

ISTANBUL TECHNICAL UNIVERSITY ★ GRADUATE SCHOOL OF SCIENCE
ENGINEERING AND TECHNOLOGY

**DESIGN DRIVEN STRATEGIC RENEWAL:
DEVELOPMENT OF STRATEGIC DESIGN AND DESIGN MANAGEMENT
CAPABILITIES IN THE TURKISH CERAMIC SANITARY WARE INDUSTRY**



Ph.D. THESIS

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Department of Industrial Product Design

Industrial Product Design Programme

AUGUST 2016

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**TASARIM TAHRİKLİ STRATEJİK YENİLENME:
TÜRK SERAMİK SAĞLIK GEREÇLERİ ENDÜSTRİSİNDE STRATEJİK
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To my grandmother,



FOREWORD

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June 2016

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ABBREVIATIONS

DC	: Design Council
DDC	: Danish Design Centre
GDP	: Gross Domestic Product
ICSID	: The International Council of Societies of Industrial Design
ITC	: International Trade Center
KBV	: Knowledge Based View
MBV	: Market Based View
NPD	: New Product Development
OECD	: Organization for Economic Cooperation and Development
RBV	: Resource Based View
R&D	: Research and Development
SME	: Small and Medium Sized Enterprises
TSF	: Türkiye Seramik Federasyonu (Turkish Ceramic Federation)
US	: United States



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DESIGN DRIVEN STRATEGIC RENEWAL: DEVELOPMENT OF STRATEGIC DESIGN AND DESIGN MANAGEMENT CAPABILITIES IN THE TURKISH CERAMIC SANITARY WARE INDUSTRY

SUMMARY

In the face of major dynamics such as globalization, increasing pace of technology, increased product and service offerings, and heightened customer knowledge and expectations, organizations are continuously looking for ways to generate differentiated and innovative offerings that are of greater value and that can catch up with evolving user contexts, needs and desires. Inside these complex and ever more demanding conditions that characterize today's competitive landscape, companies are turning their attention towards design as an important capability that can help them generate innovation and improve business outcomes. When these dynamics are combined with mounting evidence regarding the role of design in increasing innovation, competitiveness and business performance, we are witnessing an increasing integration of design into business strategies and new product development processes of businesses from various scales and industries.

However, a very critical point that must be underlined is that solely investing in design or engaging in design activities is not sufficient to ensure that design contributes to organizational goals and generates the desired business outcomes. In order to attain the contributions that design can offer to a business, organizations need to carry out effective design management practices. Theoretical and empirical studies reveal design management to be the mediating factor that determines the effectiveness of design projects and how design plays a role in improving business performance. Additionally, scholars underline that effective design management must begin with connecting design to corporate objectives, business strategy and the overall business context. A review of design management literature portrays that these strategic level responsibilities under design management are increasingly taking the lead, as necessary steps that must be successfully carried out, before the identification and administration of design resources, projects or processes.

Based on these major premises, this thesis examines design management capabilities with a special attention on strategic level capabilities in managing design. It focuses on the management of design inside organizational contexts; examines systems, processes and resources used for managing design; and places a particular attention on understanding how design is linked to corporate goals and strategy through existing design management capabilities.

The research was carried out in two main phases. The first phase involved an extensive theoretical review of existing literature in design, design management and strategic management, in order to develop the conceptual frameworks to be employed in the empirical part of the study. On account of this theoretical phase, a new design management audit tool named *Design Management Audit Framework* was developed as a systematic instrument to enable a detailed examination and assessment of an organization's design management capabilities. The tool allows not only the analysis of more traditional capabilities and responsibilities under design management, but also the appraisal of strategic level design management capabilities that are necessary for aligning a company's design efforts with its business strategy and organizational objectives. *Design Management Audit*

Framework provides major improvements to present design and design management audit tools, by incorporating critical capabilities, which have been omitted in existing tools and frameworks and by updating them in the light of recent perspectives that emerged in design management literature.

In the second, empirical phase of the research, design management capabilities were explored in three large scale manufacturers from the Turkish ceramic sanitary ware industry, based on case study research methodology that utilized the new *Design Management Audit Framework* to form the main analytical structure. In addition to assessing design management capabilities residing inside these organizations, the case studies specifically focused on understanding how these organizations developed design management capabilities relating to the strategic level, how they connected their design efforts to business strategies through existing systems and routines and major enablers and barriers influencing the development of strategic level capabilities in managing design.

The empirical context was based on firms from the ceramic sanitary ware industry for several decisive reasons. Ceramic sanitary ware is one of the first sectors in Turkey to start utilizing design and design management capabilities. It is one of the oldest and most powerful sectors of the Turkish economy, having a major place in national industrial development strategies. More importantly, after the mid 2000s, several firms from this industry were noted to initiate important strategic renewal activities that involved the inclusion of design in corporate and brand strategies, improvement of design management skills and increase in the amount of design investments. Additionally, reports detailing the nature of the sector and the prevailing competitive conditions of the world ceramic sanitary ware industry reveal design and design-driven innovation as extremely critical capabilities to boost competitiveness. Altogether, these factors render this sector a significant ground to explore design management capabilities.

The findings of the case studies revealed that although the reasons for the initial acquisition and development of design management capabilities can be varied, the development of strategic level capabilities in managing design and an increased integration of design into business strategies have taken place as a result of major strategic renewal and organizational transformation efforts. These organizations focused on developing their strategic level design management capabilities to support major changes in business strategies, such as changes in market focus, transfer to a brand development strategy targeting global markets, and restructuring of brand architecture and product management strategy.

The study identified that the assignment of management responsibility for design at the senior level, inclusion of design managers in strategy formulation and business planning processes and establishment of an independent design department serve as major means for ensuring the alignment between design efforts and business strategies. Major enablers in this process appear as design's identification as a vital tool to achieve a long-term strategic objective, continuous support and commitment coming from top management, as well as programs focusing on the development of an organization wide awareness and culture for design. In terms of barriers, the study identifies that finding the right place for design function in the organizational structure, formal assignment of strategic level design management capabilities, underdeveloped marketing capabilities, as well as organizational culture present major barriers for these organizations, in the process of advancing their strategic design management capabilities.

As a result, this thesis provides 3 major contributions to knowledge. First is the development of a new, integrative model illustrating the wide-ranging roles of design inside organizational contexts, based on a broad review of design, design

management and strategic management literature. Second major contribution is the development of a new and comprehensive *Design Management Audit Framework* to be used by design practitioners, organizations and researchers to assess design management capabilities residing inside organizations. Third contribution is the in-depth portrayal of design management capabilities possessed by three major players of the Turkish ceramic sanitary ware industry, how they developed design management capabilities at the strategic level and major enablers and barriers that affected their development. Overall, this thesis provides both theoretical and empirical knowledge on building organizational capabilities towards the strategic management of design.





TASARIM TAHRİKLİ STRATEJİK YENİLENME: TÜRK SERAMİK SAĞLIK GEREÇLERİ ENDÜSTRİSİNDE STRATEJİK TASARIM VE TASARIM YÖNETİMİ BECERİLERİNİN GELİŞİMİ

ÖZET

Küreselleşme, teknolojinin her geçen gün artan hızı, artan ürün ve hizmet çeşitliliği ve yükselen tüketici beklentileri gibi dinamikler karşısında kurumlar, farklılaşmış, yenilikçi, gelişen bağlam, ihtiyaç ve isteklere ayak uydurabilen ve böylece tüketici gözünde daha yüksek değer oluşturabilen ürün ve hizmetler yaratabilmenin yollarını arıyor. Günümüzün rekabet ortamını tanımlayan bu karmaşık ve talepkar koşullar, firmaların dikkatlerini, yenilik üretmeye ve ticari sonuçları iyileştirmeye yardımcı olan önemli bir beceri olarak tasarıma yöneltmelerine neden olmakta. Bu koşullar, tasarımın, yenilikçiliği, firmaların rekabet gücünü ve ticari performansını arttırmadaki rolüne dair gitgide artan bulgularla birleştiğinde, çok farklı sektörlerden ve farklı büyüklükteki firmaların, tasarımı firma stratejilerine ve ürün geliştirme süreçlerine daha fazla entegre etmeye başladığına şahit oluyoruz.

Ama altı çizilmesi gereken çok önemli bir nokta, tasarımın firma hedeflerine katkı sağlayabilmesi için sadece tasarıma yatırım yapmanın ve tasarım aktiviteleri yürütüyor olmanın yeterli olmadığı. Tasarımın firmaya sunabileceği farklı katkıları elde edebilmek için firmalar, öncelikle tasarımı etkili bir şekilde yönetmeliler. Bu konuda yapılan teorik ve ampirik çalışmalar, tasarım yönetiminin, tasarım projelerinin etkinliğini ve tasarımın ticari performansı arttırmadaki rolünü belirleyen çok önemli bir faktör olduğunu göstermekte. Etkili tasarım yönetimi pratikleri ise, en önce tasarımın firma stratejileriyle bağlantısının doğru bir şekilde kurulması ve tasarımın, kurumsal hedefler, farklı firma stratejileri ve genel endüstri bağlamı çerçevesinde nasıl kullanılacağını tanımlanması ile başlıyor. Tasarım yönetimi literatürünün genel bir incelemesi, tasarım yönetimi altındaki bu stratejik düzeydeki sorumlulukların gittikçe daha fazla önem kazandığını göstermekte; ve tasarım kaynaklarının, projelerinin ve süreçlerinin yönetilmesinden önce, tasarım ve firma stratejisi arasındaki bağlantının kurulmasına yönelik bu sorumlulukların etkili bir şekilde gerçekleştirilmesi gerektiğinin altını çizmekte.

Bu temellerden yola çıkılarak bu çalışma, tasarım yönetimi becerilerine odaklanmakta ve özellikle stratejik seviyedeki tasarım yönetimi becerilerinin gitgide artan önemini dikkate alarak, tasarım yönetimi becerilerinin nasıl değerlendirilebileceğini incelemekte. Tasarımın kurumlar içinde nasıl yönetildiğini; tasarımı yönetmek için kullanılan sistem, süreç ve kaynakları; ve firmaların, var olan tasarım becerileri üzerinden, tasarım, kurumsal hedefler ve firma stratejileri arasındaki bağlantıyı nasıl kurduklarını anlamaya çalışmakta.

Bu çalışma, iki ana aşamada gerçekleştirildi. İlk aşamada, araştırmanın ampirik fazında kullanılacak kavramsal çerçevelerin oluşturulması amacıyla, tasarım, tasarım yönetimi ve stratejik yönetim literatürünün kapsamlı bir incelemesi yapıldı. İlk fazdaki bu teorik çalışma sonucunda, firmaların sahip olduğu tasarım yönetimi becerilerinin sistematik ve detaylı bir incelemesi ve değerlendirmesinin yapılmasını sağlamak için, *Design Management Audit Framework (Tasarım Yönetimi Denetim Çerçevesi)* adında, yeni bir araç geliştirildi. Bu araç, var olan tasarım ve tasarım

yönetimi denetim araçlarının odaklandığı daha geleneksel, ve planlama, süreç, kaynak ve kültür odaklı beceri ve sorumluluklara ek olarak, stratejik seviyedeki tasarım becerilerinin ve sorumluluklarının incelenmesini de mümkün kılmakta. Dolayısıyla, mevcut denetim araçlarının, son dönemde tasarım yönetimi ve stratejik yönetim literatüründe ortaya çıkan yeni bilgiler ve görüşler ışığında güncellenmesini ve geliştirilmesini sağlamakta. Bunlara ek olarak, *Design Management Audit Framework (Tasarım Yönetimi Denetim Çerçevesi)*, tasarım için araştırma, tasarım entegrasyonu, tasarım için eğitim ve gelişim gibi, mevcut tasarım ve tasarım yönetimi araçlarında incelenmeyen önemli tasarım yönetimi becerilerinin incelenmesine olanak vererek, var olan araç ve çerçevelere başlıca geliştirmeler sunmakta.

Çalışmanın ikinci ve ampirik aşamasında ise, firmalardaki tasarım yönetimi becerileri, Türkiye seramik sağlık gereçleri sektöründe faaliyet gösteren üç büyük ölçekli üretici üzerinde gerçekleştirilen vaka çalışmaları üzerinden incelendi. İlk fazda geliştirilen *Design Management Audit Framework (Tasarım Yönetimi Denetim Çerçevesi)*, bu vaka çalışmaları içinde, temel analitik çerçeveyi oluşturacak şekilde kullanıldı. Vaka çalışmaları, firmalardaki tasarım yönetimi becerilerinin değerlendirilmesine ek olarak, bu firmaların özellikle stratejik düzeydeki tasarım yönetimi becerilerini nasıl geliştirdiğine; tasarım çalışmalarıyla firma stratejileri arasındaki bağlantıyı, hangi kurumsal sistemler ve yöntemler üzerinden, ne şekilde kurduklarına; ve stratejik seviyedeki tasarım becerilerinin geliştirilmesinde karşılaşılan temel destekleyici ve engelleyici faktörlerin neler olduğunun anlaşılmasına odaklandı.

Ampirik çalışmaların seramik sağlık gereçleri sektöründen firmalar bağlamında yürütülmesinde birkaç önemli neden rol oynadı. Bunlardan ilki, seramik sağlık gereçleri sektörünün, Türkiye’de tasarım ve tasarım yönetimi becerilerinin edinilmeye başlandığı ilk sektörlerden biri olmasıdır. Ayrıca bu sektör, Türk ekonomisinin en eski ve en güçlü sektörlerinden biri olarak, ulusal sanayi stratejileri ve kalkınma planlarında önemli bir yere sahiptir. Daha da önemlisi, 2000’lerin ortalarından itibaren, bu sektördeki bazı firmaların art arda önemli stratejik yenilenme süreçlerine girdikleri; ve bu süreç içinde, tasarımın firma ve marka stratejilerine entegre edilmesi, tasarım yönetimi becerilerinin geliştirilmesi ve tasarım yatırımlarının artırılması gibi konulara odaklandıkları gözlemlenmektedir. Bunlara ek olarak, Türkiye seramik sağlık gereçleri sektörünü ve dünya seramik sağlık gereçleri sektöründeki rekabet koşullarını inceleyen raporlar, tasarım ve tasarım tahrikli yeniliğin, ürünlerdeki katma değeri ve firmaların rekabetçiliğini arttırmada son derece önemli beceriler olduğuna işaret etmektedir. Bütün bu nedenler, bu sektörün tasarım yönetimi becerilerinin araştırılması için önemli bir saha olduğunu göstermektedir.

Çalışmanın bulguları, firmalarda tasarım yönetimi becerilerinin ilk defa oluşturulmasındaki tetikleyici nedenlerin farklılık gösterebilmesine rağmen, stratejik düzeydeki tasarım yönetimi becerilerinin geliştirilmesinin ve tasarım ve firma stratejileri arasında artan bir entegrasyonun sağlanmasının, firmalarda başlıca stratejik yenilenme ve kurumsal dönüşüm çalışmaları kapsamında başlatıldığını göstermektedir. Bu firmalar, tasarımı daha güçlü bir şekilde firma stratejilerine entegre etmeye ve stratejik tasarım yönetimi becerilerinin geliştirilmesine, kurumsal stratejilerinde yaptıkları, odak pazarın tamamen değiştirilmesi, küresel pazarları hedefleyen marka geliştirme stratejisine geçiş, marka mimarisinin ve ürün yönetimi stratejisinin yeniden yapılandırılması gibi, büyük çaplı değişiklikleri desteklemesi amacıyla odaklanmaya başlamışlardır.

Bunlara ek olarak çalışma, tasarım yöneticilerinin strateji oluşturma ve iş planlaması süreçlerine katılımlarının; firma içinde stratejik düzeyde tasarım yönetimi sorumluluğunun atanmasının; ve bağımsız bir tasarım bölümünün oluşturulmasının, tasarım ve kurumsal stratejiler arasındaki bağlantının sağlanmasında kullanılan

temel yollar olduđuna iřaret etmektedir. Bulgular, bu sũreçteki temel destekleyici faktũrlerin, tasarımın uzun vadeli bir hedefle iliřkilendirilmesi; ũst yũnetimin tasarım iin gũsterdiđi ve devamlılık gũsteren destek ve bađlılık; tasarım ve temel fonksiyonel bũlũmler arasında iletiřim ve koordinasyonun geliřtirilmesi ve kurum iinde tasarıma dair farkındalık ve kũltũrũn arttırılmasına odaklanılması olduđunu gũstermektedir. Bu sũre iinde, firmaların karřılařtıkları temel zorlukların ve engelleyici faktũrlerin ise kurumsal yapıda tasarım bũlũmũnũn etkili bir řekilde konumlandırılması; stratejik dũzeydeki tasarım yũnetimi sorumluluklarının atanması; geri kalmıř pazarlama becerileri ve kurumsal kũltũr olduđu ortaya ıkmaktadır.

Bu tez mevcut literatũre 3 temel konuda katkı sađlamaktadır. Bunlardan ilki tasarım, tasarım yũnetimi ve stratejik yũnetim literatũrũnũn kapsamlı bir incelemesi sonucu tasarımın kurumlardaki farklı ve geniř aplı iřlevlerini gũsteren yeni, bũtũnleřtirici bir model geliřtirilmiř olmasıdır. İkinci temel katkı, tasarım alanında alıřanlar, tasarım yũneticileri, kurumlar ve arařtırmacılar tarafından kurumsal tasarım becerilerinin deđerlendirilmesinde kullanılması iin yeni ve kapsamlı bir ara olarak *Design Management Audit Framework'ũn (Tasarım Yũnetimi Denetim erevesi)* geliřtirilmiř olmasıdır. ũũncũ temel katkı ise, Tũrk seramik sađlık gereleri sektũrũnũn en nemli 3 firmasının sahip olduđu tasarım yũnetimi becerilerinin, bu firmalarda stratejik seviyedeki tasarım yũnetimi becerilerinin nasıl geliřtirildiđinin ve bu sũreci etkileyen destekleyici ve engelleyici faktũrlerin detaylı bir řekilde ortaya koyulmuř olmasıdır. Sonu olarak bu tez, tasarımın stratejik olarak yũnetilmesi iin gerekli kurumsal becerilerin geliřtirilmesine ynelik teorik ve ampirik bilgi sunmaktadır.



1. INTRODUCTION

1.1 Background Argument

1.1.1 The new economy and a heightened recognition of design

Design is becoming recognized by businesses as an ever more strategic tool contributing to business success. There are several supporting factors behind this recognition. Together with the effects of globalization and the increasing pace of technology, all over the world, economies are going through a major restructuring. Competition has taken a paramount dimension in all markets, resulting in increased product and service offerings, and heightened customer expectations. Nussbaum (2004) mentions that we are observing a shift from economies of scale to economies of choice and the fragmentation of mass markets. Above all, these developments are complemented by the evolution of the economy faster and faster towards a knowledge and creativity economy. Additionally, the novel contexts and characteristics of this new economic scenery are requiring an equal emphasis on service, experience, knowledge and interaction as on physical products (Norman, 2010).

In this new, ever more complex and demanding competitive landscape, companies eventually recognize the fact that price, quality or technology factors alone do not suffice to establish sustainable competitive advantages (Lorenz, 1986). This realization turns their attention to the vital question of how to build new capabilities that will enable them to create more compelling products, services and meaningful customer experiences - capabilities that will enable them to bring about innovation in their products, services, and business models. Today, this is one of the most persistent inquiries in the business world.

This question has been directing the focus of businesses from various scales and industries more and more towards design. Design has become an important business topic on the side of academia, popular press and industry. Besides academic researchers, commentators in many leading business journals (Brown, 2005; Nussbaum, 2004, 2005) and authors of books focusing specifically on the connection between design and business (Brown, 2009; Brunner et al. 2009; Martin,

2009), indicate that design is increasingly receiving a principal position in company strategies, and in the new product development processes of companies from all over the world.

Back in 1980s, Lorenz (1986) was one of the first to reveal this trend towards a heightened recognition and utilization of design in the context of globalization, as well as the changing economic, technological, social and competitive conditions of the global economy. He underlined design's emerging role as a "key competitive weapon" for the development of global products:

For those involved in competition on a global scale - a rapidly increasing proportion of companies - the design dimension is becoming a particularly important factor. It is being exploited more and more to create competitive distinctiveness for products of all kinds, whether they be Olympus cameras or Sony Hi-Fis from Japan; Philips compact discs or shavers from Holland; Wilkinson razors from Britain; Audi automobiles from Germany; or the 'Swatch' watch from Switzerland. (Lorenz, 1986, pp. 3-4)

Since then, design became an increasingly recognized business practice in the generation of distinctive products, communications, services, environments and experiences. Research indicates that design budgets in Europe and the US have been increasing between 8 to 20 % a year (Gemser & Leenders, 2001). Danish Design Council's (DDC) report named "The Economic Effects of Design" states that in Denmark, the design industry has grown 20% annually over the last decade, where this seems to constitute a trend (DDC, 2003). Additionally, while design had traditionally been regarded as a supportive activity within the more established functional departments like marketing, R&D or manufacturing, it is increasingly being considered as a significant competency and a separate business function "emerg[ing] from the shadow of these functional groups and forging a distinctive image as a separate and legitimate business discipline" (Olson et al., 1997, p. 1).

Whereas in the context of governmental policy and initiatives, we see that all over Europe, and in East Asian countries like South Korea, Taiwan and Singapore, design has become a major constituent of national technology and innovation policies, in addition to an apparent increase in national design promotion and support programs (Cho, 2004). Similarly, on the side of education, we observe an increasing attention to design from highly prominent universities around the world such as Stanford, INSEAD, University of Toronto, where business schools are collaborating with design schools to offer joint courses and projects (Borja de Mozota, 2008), as a way of answering the urgent need, to better integrate the fields of design and business, and to increase the design knowledge and understanding of business students as well as practitioners.

1.1.2 From a heightened recognition of design to design as a strategic tool

Alongside these developments, the once prevalent perspectives on design's contribution to businesses evolved from design being discussed majorly on the basis of its operational functions such as a marketing tool to create distinctiveness, or a product development tool to enable efficiency and speed to market - to a wide ranging discourse on the various strategic contributions of design inside organizational contexts. This discourse that highlighted design as a strategic tool/resource, clearly emphasized that design should be strongly related to a firm's strategy in order to obtain its significant benefits.

Kotler and Rath (1984) were one of the major figures in this discourse by acknowledging design as a strategic tool that businesses can use to gain sustainable competitive advantages. They called for a recognition on the side of design's use as a strategy tool "in connection with products, environments, information, and corporate identities" (p. 17), with the ultimate objectives of increasing customer satisfaction and company profitability. They strived to connect design to corporate strategy, by discussing various contributions that design can make to an organization besides product distinctiveness, such as: creating corporate distinctiveness, communicating value, increasing information efficiency and even functioning as a planning and decision making process. Lorenz (1986) augmented this discussion, although with a more deliberate focus on industrial design. Based on his case studies on successful international companies like Olivetti, Ford, Philips, and Sony, he indicated that since the 1980s, a mounting number of companies have been realizing the potential that design offers, and argued that "The design dimension is no longer an optional part of marketing and corporate strategy, but should be at their very core" (p. 9).

Other important academics contributed to the development of a deeper understanding about the connection of design to corporate goals and strategy, and contributions that design can make both at the operational and strategic levels (Borja de Mozota, 2003b; Bruce & Bessant, 2002; Cooper & Press, 1995; Walsh, 1995; Walsh et al. 1992). Design's strategic role has been revealed in diverse contexts ranging from product differentiation, corporate identity (Blaich & Blaich, 1993; Olins, 1978; 1989) and brand repositioning (Walsh, 1992), to creating deeper consumer connections (Noble & Kumar, 2008), understanding user needs (Borja de Mozota, 2003b; Veryzer & Borja de Mozota; 2005) and fostering a creative organizational culture (Cooper & Press, 1995). More recent research, added to this discourse by locating design as a strategic tool in driving innovation (Bertola &

Teixeira, 2003; Ravasi & Lojacano, 2005; Utterback et al., 2006; Verganti, 2008, Von Stamm, 2003, 2004) and in inducing strategic renewal and change in organizations (Borja de Mozota, 2003; Ravasi & Lojacano, 2005). Ravasi and Lojaco (2005) give extended accounts on how design is driving product innovation and strategic renewal in successful companies like Nokia, Philips, Alessi, Electrolux, Bang & Olufsen, to name a few. Having studied numerous organizations from different industries, ranging from consumer goods to high tech, they explain and illustrate how design has also promoted and supported shifts in the strategic course of these companies.

Likewise, case studies of the renowned design consultancy firm IDEO's collaboration with some of the Fortune 100 companies, demonstrate how design was utilized throughout these organizations, in support of numerous strategic objectives: to create powerful consumer connections; generate better products, services, business models; increase market demand, enhance profitability and business performance (Brown, 2009; Kelley & Littman, 2001). Although providing anecdotal evidence, these case studies are instrumental in displaying the wide-ranging benefits design can bring at different levels of an organization, when design is employed with a premeditated link to business strategies.

Another important line of research focuses on design's strategic role in the context of increasing business performance and competitiveness (Gemser & Leenders, 2001; Hertenstein & Platt, 1997; Hertenstein et al. 2005; Roy & Riedel, 1997; Walsh et al. 1992), seeking to assess design's contribution to financial performance. All together these studies provide convincing support for the positive relationship between design and business performance, thus contributing further to the increasing acknowledgement of design by the business world as an important competitive tool.

Today, due to this heightened recognition of design as a strategic resource, even those businesses that are not typically associated with design are observed to be building design capabilities. Such as P&G, which is reported to have increased the number of its design staff by 400% in 2001, and by utilizing the power of design, "has transformed itself from a stagnant brand manager into a model of innovation efficiency that outperforms industry rivals" (Nussbaum, 2005, para. 16). Another example of design's strategic use in an industry that is not design oriented by nature can be given from the Turkish agricultural industry, where Tariş Zeytin A.Ş. has managed to employ design to develop a distinctive competitive strategy through a careful integration of its products, brand identity and brand communication (Er et al.,

2005). Other accounts on design's strategic use have been reported by the author of this thesis, in the context of Turkish ceramic sanitary ware sector (Topaloğlu & Er, 2010, 2011). This indicates that not only in developed economies of the world, but also in Turkey, a developing economy, design began to be recognized as a strategic resource by firms from different industrial sectors.

1.1.3 Yet design has to be managed strategically! - From design management to strategic design

As it has been briefly discussed in the previous section, design can offer many benefits to businesses, both at the operational and strategic levels. Nevertheless, design is a business process that integrates the contribution from diverse business functions, and like all business processes, it requires a successful management to be effective. When Kotler and Rath (1984) first claimed design to be a strategic tool, they also pointed out that it is well-managed and high quality design that offers strategic benefits to the organization. Similarly, the significance of an effective management of design, in order to attain the contributions that design can make to organizations has been strongly underlined by both theoretical and empirical studies. (Gorb & Dumas, 1987; Dumas & Mintzberg, 1989; Bruce & Bessant, 2002; Chiva & Alegre, 2007; 2009). In a recent empirical research, Chiva and Alegre (2009) analyzed the effect of design investment on firm performance and how this relationship is mediated by design management skills. The results of their study suggest that design management improves firm performance, investment in design is positively related to design management, and design management has an important role in determining how design investment affects firm performance.

Simply put, design management involves all the organizational activities, skills and processes necessary for design to take effect (Gorb & Dumas, 1987). One of the first definitions, provided by Michael Farr in 1965, defined design management specifically in the context of managing design projects (Farr, 1965). Yet, since then, the scope of design management has broadened significantly. Design management evolved from the simple view as the management of design projects, to cover various other activities and skills, and to be considered as strongly integrated with corporate goals and strategies. Blaich and Blaich's definition reflects this broadened approach by defining design management as: "the implementation of design as a formal program of activity within a corporation by communicating the relevance of design to long-term corporate goals and coordinating design resources at all levels of corporate activity to achieve the objectives of the corporation" (Blaich & Blaich,

1993, p. 13). This definition effectively captures the significance of relating design activities to corporate objectives and strategy, and locates this task as one of the major responsibilities of design management.

Parallel to *design as a strategic tool/resource* discourse, which increasingly underlined the strategic contributions that design can make to organizations, the concepts of *strategic design* and *strategic design management* also developed inside the design management literature, underlining the importance of linking an organization's design approach, processes and efforts to corporate strategy and organizational objectives through effective design management practices.

While describing the evolution of design management stages in companies, Lorenz (1994) explains strategic design as the stage that "integrates industrial design more deeply into the company" (p. 80). Hertenstein and Platt (1997) define a "strategic design culture" as one "in which the company strategy is clearly linked to design" (p. 10). In the same way, Er et al. (2005) explain this broadened perspective attained through *strategic design* as:

Beyond a limited understanding of design management confined to the management of the design function at organizational or project levels, the concept of strategic design foresees that design is not only concerned with the products, but also with how a company defines its goals. (p. 42)

Therefore, the concepts of *strategic design* or *strategic design management* are observed to denote a higher level of design integration within the organization by means of utilizing design, with a clear connection to corporate goals and strategy. When we overview design management literature, we see that it has become increasingly rooted in the relationship between strategy and design, and emphasizes their alignment as one of the hallmarks of effective design management practices. In this respect, successful management of design begins with a clear connection between design efforts and organizational goals and strategies.

1.1.4 New perspectives on design management suggesting new roles and responsibilities

The previous section highlighted the emphasis placed by design management literature on connecting design efforts to corporate strategy and business goals in order to secure the benefits that design can offer to organizations. Additionally, more recent views on design management and on the relationship between strategy and design, increasingly point out that this relationship does not have to be practiced in one way (Chung & Kim, 2011; Francis, 2002; Hertenstein & Platt, 1997). The central

idea is that in addition to design being perceived and utilized as a tool to implement strategy and achieve corporate objectives, it can also participate in the strategy formulation process and inspire strategy. There is a growing body of literature pointing to this new role on the part of design.

Based on their research on leading-edge manufacturing firms with internal design functions, Hertenstein and Platt (1997) identified that by being included as an input to the strategic planning process, design can provide ideas about new business possibilities, new directions and opportunities, therefore acting as a major tool in strategy formation. They indicated that in organizations where design's role in strategy formation was acknowledged, design managers were being invited to play a part in discussions that shape overall corporate strategy. In the same lines, Chung and Kim (2011) explain that besides playing functional roles in strategy implementation, designers can also play interactional roles in strategy formulation by interacting with senior management and strategy experts. Through these interactions, they can provide a "basic guideline for new product strategy for a certain product concept" and also, "participate in the formulation of new product strategy" (p. 262).

Parallel indications are also coming from leading design consultancies around the world, for instance Frog and IDEO, as they have long been including services such as brand strategy, technology strategy, innovation strategy, and business design among their more traditional design services. Weiss (2002), former Head of the Business Factors Discipline in IDEO, indicates that an increasing number of design consultancies have extended their services to strategic services in order to strengthen the connection between business needs and user needs. She explains that design capabilities can also participate in the discovery and decision making processes in connection to the business context. These firms have long recognized the value in expanding design's influence towards the more upstream, strategic decision making processes of their clients (Sanchez, 2006).

Moreover, based on the realization that design approaches and methods can significantly contribute to wider business contexts and problems - such as strategy formulation, organizational change, generation of innovations in business activities, and even tackling with social challenges - new concepts have been put forward, mostly over the last decade. The concepts of *design thinking* (Brown, 2005; Liedtka, 2000; Liedtka & Ogilvie, 2011; Martin, 2009), *design attitude* (Bolland & Callopy, 2006) and *managing as designing* (Bolland & Callopy, 2004) have been introduced, especially to a managerial audience, as ways of integrating design approaches to

business thinking in order to deal with complex business challenges in more innovative ways.

In particular, the concept of "design thinking", has been gaining increasing popularity in the business world (Drews, 2009), yet this trend seems to be largely limited to the business community in developed economies. Although these concepts and their descriptions by various authors suggest certain differences (Johansson-Sköldberg et al., 2013), it can be said that they generally point to a set of "designerly ways of thinking", approaches and methods which can also be used by managers and non-designers, as a promising alternative to the more traditional and linear approaches that they are accustomed to use in dealing with complex problems. The divergent ways of thinking and questioning utilized by designers, and their discipline specific methods are offered as more suited to generating better ideas, solutions and futures, also inside strategy formulation processes (Golsby-Smith, 2007; Liedtka, 2000, 2004; Liedtka & Ogilvie, 2011).

Consequently, these recent perspectives call for more participative and interactive roles and subsequently widened responsibilities for designers and design managers, particularly in the context of strategy formulation processes in organizations. They also point to the growing need to handle design efforts, corporate goals and strategies in a more unified manner, which has long been highlighted by the design management literature.

1.2 Gap in Knowledge

As has been briefly portrayed in the previous sections, scholars from the design field as well as those from the business field have been emphasizing the strategic role of design for organizations, and the necessity of an effective management of design in order to transform design into a strategic resource. Additionally, it is observed that especially in the last two decades, design and design management has evolved from being discussed solely in the context of products and services - namely in the context of end products of businesses - to being considered more holistically, in the overall context of design's relation to business objectives, strategy and strategic management processes in organizations. As a result, recent perspectives have suggested new roles and responsibilities for design and design management, which expand beyond the creation of products, services and experiences, towards an increasing focus on shaping design's link to organizational goals, strategies and organizational means through which company strategies are created and supported.

However there are important gaps regarding the body of knowledge concerning the management of design in organizational contexts.

First of all, inside the design management field, empirical research is lacking on how design is actually being managed as a strategic resource inside organizations, and specifically on how design efforts are actually linked to corporate goals and strategy through organizational design management capabilities. We do not know how design is managed by organizations in order to assist their business strategies, and to what extent existing design management capabilities facilitate this process. In addition to developed economies, research focusing on these subjects is especially lacking in the context of developing economies, and similarly in the context of the Turkish industry.

Secondly, several models and frameworks have been developed, in order to structure and assess design and design management capabilities of businesses, such as Design Atlas (Design Council, 1999), The Design Ladder (Danish Design Centre, 2001) and Design Management Staircase (Kootstra, 2009). However a closer look reveals that while they present significant guidance in the assessment of organizational and project level skills in managing design, they lack to provide an adequate approach, specifically to frame and assess design management capabilities with respect to building the connection between organizational goals, strategy and design practices. Moreover, the briefly reviewed outlook provide the grounds to suggest that frameworks regarding the assessment of design management capabilities need to be updated in the light of new perspectives and research that have emerged over the last decade, in order to better accommodate and evaluate the integration of design with organizational objectives and strategy, as well as to evaluate the increasing role of design in contributing to strategy formation processes.

1.3 Research Objectives and Scope

In the light of identified gaps in knowledge, this thesis endeavors to provide a comprehensive understanding about how design can be utilized as a strategic resource by businesses, and specifically, about how design is linked to corporate goals and strategy through design management capabilities.

This overall research aim was approached firstly through a theoretical review and synthesis of existing literature in design, strategic management and design management; and later, through empirical research on design management

capabilities in the context of the Turkish ceramic sanitary ware industry. The understanding gained in the theoretical part was used to develop the conceptual frameworks that are employed in the empirical part of the study. Accordingly, two sets of research questions were defined to guide the overall research.

The research questions for the **theoretical phase** were defined as:

1. What are the contributions of design to organizations, and in what ways can design be utilized as a strategic resource?

This question was the first step to understand the links between design and strategy since, in order to understand how design can be connected to an organization's strategy and goals, it is first necessary to have a comprehensive understanding regarding design's possible contributions to organizations.

2. How are design and design management capabilities linked to major concepts and frameworks of strategy and strategic management?

This research question sought to understand strategy and strategy formulation processes in organizations, and to consider design and design management capabilities through the perspective of strategic management.

3. How can design management capabilities be assessed with an up to date consideration, particularly incorporating design management capabilities at the strategic level?

With this research question, it was intended to come up with a comprehensive design management assessment framework that incorporated design management capabilities that are integral to the linking of design activities with strategy, as well as capabilities that are critical for design integration, and ensuring the continual development of design and design management capabilities throughout the organization.

The research questions for the **empirical phase** were defined as:

1. What is the scope and nature of design management capabilities in firms from the Turkish ceramic sanitary ware industry, specifically including design management capabilities at the strategic level?
2. How are design and strategy linked through design management capabilities, in firms from the Turkish ceramic sanitary ware industry?
3. Are there specific enablers for the development of strategic design management capabilities?

4. Are there specific barriers for the development of strategic design management capabilities?

1.4 Choice of Ceramic Sanitary Ware Sector for the Empirical Research

The empirical context for this research is based on firms from the ceramic sanitary ware industry for several reasons. First of all, this industry is one of the first industries in Turkey to begin acquiring design and design management capabilities. Additionally, beginning with the mid 2000s, several firms from the industry have been observed to initiate major strategic renewal processes that involved the integration of design into their corporate strategies, an increasing focus on the development of design management skills and a noticeable intensification in design activities carried out in different areas (Topaloglu & Er, 2010; 2011). This trend towards taking a more strategic perspective to the management of design is noticed to be followed in differing degrees by the major players in the industry.

Additionally, ceramic sanitary ware sector is one of the oldest and most powerful sectors in the Turkish industry. After the ceramic tile sector, it is the second most important sector in terms of value added and in terms of its contribution to the national economy. With exports constituting 44% of total production and Turkey being among the top ten global exporters of ceramic sanitary ware, the sector has a major place inside national industrial development strategies. Moreover, given the design oriented nature of this mature sector, design, product development and innovation are extremely critical factors that play a paramount role in increasing the value added to these products and hence in the competitiveness of the sector as a whole. Therefore, effective design management and the integration of design with organizational goals and strategies are especially significant capabilities for this sector in the creation of sustainable competitive advantages. As a result, it is believed that in the context of the Turkish industry, ceramic sanitary ware sector provides a unique and significant ground to explore design management capabilities at the strategic level. For these reasons, the empirical research was carried out in the ceramic sanitary ware sector.

1.5 Structure of the Thesis

The thesis begins with a critical review of literature in 3 major parts (Chapter 2, 3 and 4), which constitute 3 main spheres pertaining to managing design as a strategic resource: Chapter 2 reviews design and its contributions to businesses;

Chapter 3 provides an overview of strategy & strategic management literature; and Chapter 4 focuses on design management with its history, evolution, levels and responsibilities. However, in addition to the aim of understanding and presenting current knowledge in these spheres, the literature review for each part was undertaken as part of a wider conceptual research, and is complemented by a synthesis section, either presenting the frameworks developed or the theoretical analysis undertaken. Figure 1.1 illustrates the contribution of each part of the literature review inside the overall thesis study, and the resulting synthesis.

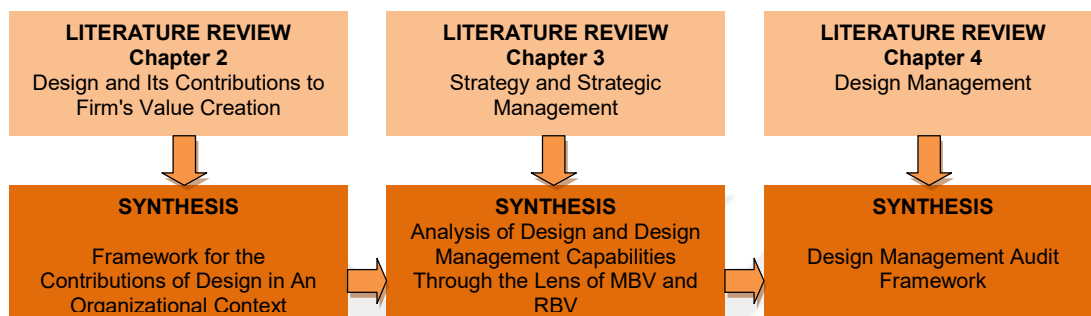


Figure 1.1 : Major parts of the literature review and their contributions.

Therefore the literature review in Chapter 2 results in the development of a comprehensive framework that integrates and illustrates the various contributions of design inside an organizational context; Chapter 3 gives rise to a synthesis section analyzing design and design management capabilities through the lens of strategic management literature; and Chapter 4 results in the generation of an updated design management audit framework with the objective to provide a comprehensive examination of design management capabilities inside a business.

After Chapters 2, 3 and 4, which present the findings of the literature review and the resulting synthesis, Chapter 5 overviews the ceramic sanitary ware industry, portrays its major characteristics, main players and and the importance of design management capabilities for this sector. Next, Chapter 6 overviews the research approach and methodology used in the empirical phase of the study; describing the motivations for choosing case study strategy, explaining how the case studies were carried out, and detailing the techniques used in data collection and data analysis.

Subsequently, Chapter 7, 8, and 9 present the findings of the case studies conducted in 3 different large scale ceramic sanitary ware manufacturers, including an audit of their design management capabilities that was carried out using the design management audit framework developed in the theoretical phase of the study. Chapter 10 provides a discussion of the study findings and integrates them to come up with the major conclusions of the research. Finally, Chapter 11 presents

the contributions of the thesis to theoretical knowledge and practice, discusses the study's limitations and provides directions for future studies.





2. DESIGN AND ITS CONTRIBUTIONS TO BUSINESSES

Many businesses and organizations want to know what design means, how it can help them and how they can employ design in a meaningful and cost effective manner. (Cooper & Junginger, 2011, p. 540)

Although scholars agree on the centrality of design for firms' innovativeness, there is still uncertainty about the channels or mechanisms whereby design exerts its 'power'. (D'ippolito, 2014, p. 716)

Although both anecdotal and empirical evidence on design's strategic utilization for business success is growing, many researchers indicate that most organizations do not have a proper understanding about design and consequently about its value for businesses (Cooper & Junginger, 2011; Lorenz, 1995; Trueman & Jobber, 1998).

To begin with, design has different meanings for different people, and for different functional groups within an organization, ranging from design viewed as art, to design understood as problem solving related to engineering design (Cooper & Press, 1995; Lorenz, 1995). Additionally, the breadth of design and its wide ranging disciplines poses another level of confusion with regards to understanding design and how to exploit this important resource inside an existing business context. There is a prevailing tendency to view design as entirely involving the generation of form and style, related exclusively to the aesthetic elements of products (See Bloch, 1995; Kaul & Rao, 1995). This neglects the broad nature of the design discipline; and design's crucial task in integrating a wide range of factors into products, services and systems, ranging from the aesthetic, functional, and environmental considerations to economic, social and cultural.

This, largely missing and imprecise understanding about design, creates a major barrier to design's utilization as a strategic asset, inhibiting its effective integration by businesses, and its connection with business strategies, since businesses do not know how and in what ways design can contribute to their business goals. For these reasons, this section will start with an overview of design and its different disciplines and then move towards identifying design's numerous contributions to businesses, in order to understand the essence of the discourse on *design as a strategic resource*. In brief, this section aims to (1) provide a clear understanding about design, (2) to situate its various functions inside an organizational context, and most importantly (3) to understand how design functions as a *strategic resource* by

exploring the wide ranging contributions that design can make to organizations. This understanding is essential in order to recognize how design can play a part in achieving business goals and to identify how design can be managed with a clear connection to corporate strategy. Finally, the chapter will end with a synthesis section, presenting the model which was developed through the integration of the reviewed literature, in the form of a comprehensive framework representing the wide ranging contributions of design inside an organization.

2.1 Understanding Design

The term *design*, in its broadest sense, covers a wide spectrum of activities, knowledge and skills, in addition to a wide range of domains in which these activities can be performed. Thus, it is highly challenging to provide a single, well-established definition for design that would cover its interdisciplinary and broad nature. Consequently, the literature presents various definitions for design, which depend on the specific domain and context of design activities, provided by scholars from different fields, ranging from engineering to innovation, from management to arts and aesthetics. This causes a certain level of confusion and ambiguity in the use of the term.

Another level of confusion comes from the fact that similar to the term *innovation*, *design* can be considered both as a verb and as a noun; as a verb referring to a process/activity, and as a noun to the outcome of that process/activity (Walsh et al., 1992). However, instead of a view on design as an outcome, viewing design as a process/activity provides a much broader and generic understanding regarding the nature of design, and is more suitable for identifying its common characteristics that are applicable to numerous disciplines under the design field.

Appreciating design's wide ranging relevance, one of the first academic definitions provided by Herbert Simon, characterizes design in its broadest sense, as a cognitive activity, which is not restricted to professional designers or engineers. His highly quoted definition for design is: "devise[ing] courses of action aimed at changing existing situations into preferred ones" (Simon, 1996, p. 111). Another major stance taken by Simon (1996) with respect to design, is to locate it as a *problem solving activity* that is concerned with "devising artifacts to attain goals" (Simon, 1996, p. 114). Archer (1981) also regards design as a goal directed problem solving activity with the aim to provide "the combined embodiment of configuration, composition, structure, purpose, value and meaning in man-made things and systems" (Archer; 1981 p. 30). Buchanan explains that "the central theme of design

is the conception and planning of the artificial" (Buchanan, 1992, p. 199). Similar to Simon, when characterizing design, he focuses on the thought process that guides the planning and generation of artifacts, which can cover any aspect of the artificial world, "material objects; verbal and visual communications; organized activities and services; complex systems or environments for living, playing, working, and learning" (Buchanan, 1992, p. 199); and that can be produced by craftsmanship or mass-production.

These definitions demonstrate the breadth of the discipline and situate design as a problem solving and planning activity that is purposeful, goal oriented, and concerned with the creation of all artifacts and processes inside the man-made world.

On the other hand, other definitions underline the creative dimension and divergent thinking (Lawson, 1990) inherent in design activity and in "designerly ways of knowing" (Cross, 1982), which make the generation of unconventional unique and innovative solutions possible. In this vein, Bruce and Bessant (2002) provide a definition for design as: "Design is essentially the application of human creativity to a purpose - to create products, services, buildings, organizations and environments which meet people's needs. It is the systematic transformation of ideas into reality" (p. 3).

Trying to bring together various aspects of design, and to highlight its essential role in major human pursuits, such as innovation, humanization of technologies, and cultural and economic exchange, The International Council of Societies of Industrial Design (ICSID) defines design as:

Industrial Design is a strategic problem-solving process that drives innovation, builds business success, and leads to a better quality of life through innovative products, systems, services, and experiences. Industrial Design bridges the gap between what is and what's possible. It is a trans-disciplinary profession that harnesses creativity to resolve problems and co-create solutions with the intent of making a product, system, service, experience or a business, better. At its heart, Industrial Design provides a more optimistic way of looking at the future by reframing problems as opportunities. It links innovation, technology, research, business, and customers to provide new value and competitive advantage across economic, social, and environmental spheres. (ICSID, 2015).

As indicated by these definitions, the design activity covers many different areas, such as products, visuals, environments, processes and interactions (Figure 2.1), which eventually form design's various disciplines. The common point to all these disciplines is that the design process requires the engagement in a creative problem solving activity, accompanied by the visualization of ideas, solutions, concepts in the

form of sketches, models and other representations, in order to provide directions for the construction of objects, systems or processes that "did not exist before, or which did not exist in quite that form - which might be a building, a dress, a plastic bowl, a machine, a company's logo or a pair of trainers bearing a company's logo" (Walsh et al., 1992, p. 14). This view also points out that the design activity does not necessarily require the generation of something totally new, but also involves the generation of different and hopefully better alternatives to existing ones.

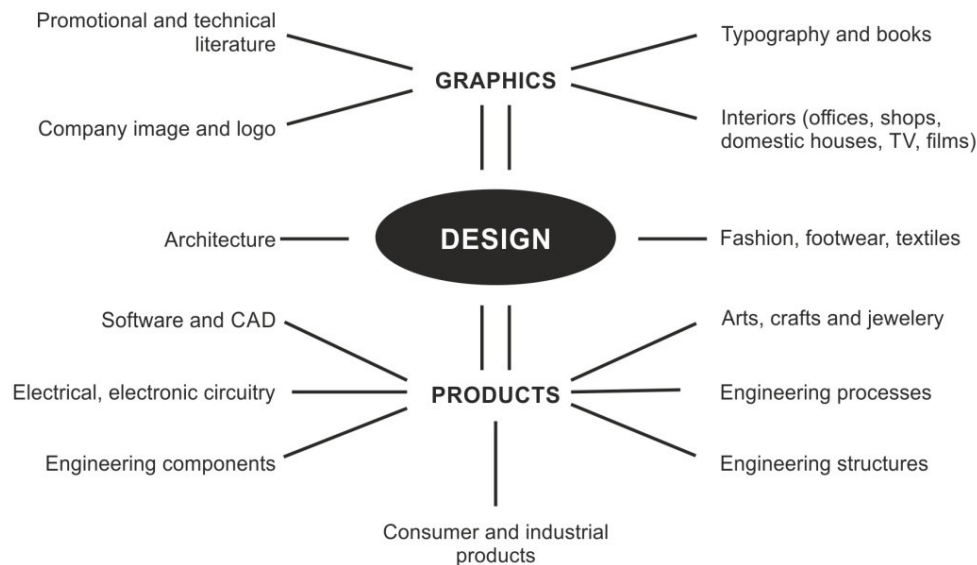


Figure 2.1 : The main areas of design (Shirley and Henn as cited in Walsh et al., 1992).

Underlining the broad nature of the design field, Cooper and Press (1995) group different views and perspectives about design into *design as art*, *design as problem solving*, *design as a creative act*, *design as a family of professions*, *design as an industry* and *design as a process*. Similar to the spectrum characterized by their classification, design disciplines range from those based more heavily on artistic skills and traditions such as graphic design and textile design to those based to a great degree on science and technology such as engineering design and software design. Consequently, each discipline has its own set of knowledge, methods and skills.

To illustrate the varying knowledge domains covered by different design disciplines, Walker provides a representation (Figure 2.2) for various design areas (as cited in Cooper & Press, 1995), which indicates the proximity of each design discipline to the two poles of artistic and scientific traditions and knowledge bases, in addition to trying to hint at their roots in the craft tradition. This representation is instrumental in acknowledging the breadth of design, while giving a structure to where each design

discipline lies with respect to each other, and with respect to major knowledge domains. Some of the design disciplines such as industrial design, interior design, furniture design, lie closer to the middle of the spectrum and require a more balanced combination of artistic and scientific knowledge and skills.

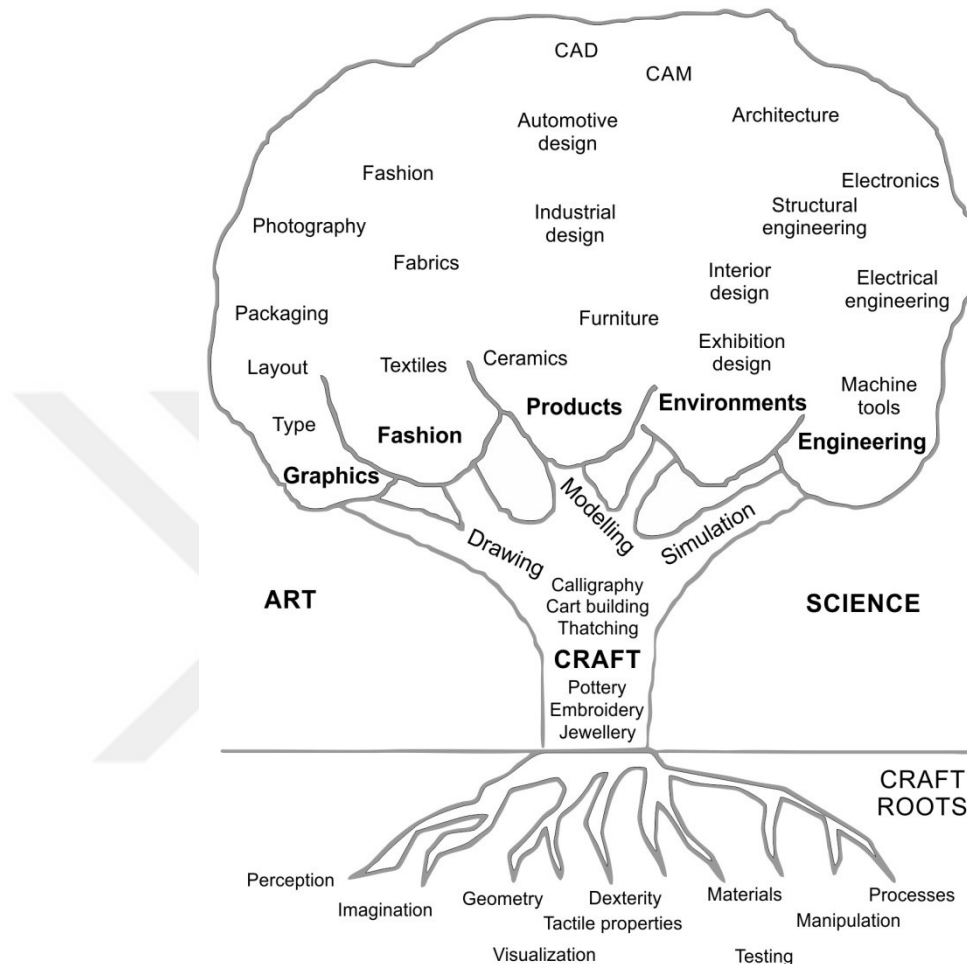


Figure 2.2 : The design family tree (Walker as cited in Cooper and Press, 1995)..

Some of the major design disciplines can be listed as: architecture, landscape design, interior design, industrial design (sometimes also referred as product design), service design, graphic design, textile design, fashion design, jewelry design. Among these disciplines, specifically industrial design has gained a prominent status due to its central role in the development of manufactured products and the growing recognition of its emerging role as a major competitive tool especially since the 1980s (Lorenz, 1986). And yet compared to most other design disciplines it is probably the least understood and the most vaguely acknowledged design discipline for many. In this research it will be the design discipline that is more at the center of the study with respect to design management skills.

Industrial design, is the design discipline that focuses on the design of mass manufactured products. A crucial point recurrently mentioned by scholars, is the existence of a prevailing tendency to view industrial design as entirely involving the generation of the form and determining the aesthetic elements of products (See Bloch, 1995; Kaul and Rao, 1995; Ulrich and Eppinger, 2007), whereas other important product attributes like functionality and ease of use are seen solely as the responsibility of engineering design. This view neglects the broad nature of the industrial design discipline, and its crucial task in integrating a wide range of considerations into products, services and product systems such as aesthetic, functional, environmental, financial, social and safety considerations. Besides determining the aesthetic attributes of products - like form, color, size, configuration, and material - industrial design's other major tasks are to determine the ergonomics, ease of use, functionality, quality, price, safety, ease of manufacture and environmental friendliness of products, as well as that of their related services and systems. When developing concepts, solutions, and specifications for products, industrial design tries to find an optimal fit between the concerns and capabilities of the manufacturer and the needs and desires of the user.

Coming to the confusion between the terms 'industrial design' and 'product design', Mutlu and Er (2003) mention that defining these concepts is an ongoing debate in design literature. They attempt to clarify this confusion by indicating the view that industrial design is a discipline and a practice in the total design field, whereas product design refers to the overall collaborative design activity, which involves the participation of several disciplines that are all targeted at the generation of a product:

Thus, 'product design' should be considered not as a 'discipline', but as an 'activity' consisting of the contribution of various disciplines. A 'product design' activity appears to inevitably encompass 'industrial design' as the central practice harnessing the contribution of all other practices, for instance, engineering design, software design, interaction design, design of product graphics, and so on. The level of contribution of other practices relies on the characteristics of the product, to which the product design activity is devoted (Mutlu & Er, 2003, p. 12).

Walsh et al. (1992) and Cooper and Press (1995) take a similar approach, where product design is used to refer to the product design activity that entails industrial design and engineering design as its major contributing disciplines. Likewise in *The Corfield Report*, product design is defined as including both engineering design and industrial design (Corfield, 1979).

Although in design and design management literature, there is a difference between these terms, it is seen that in other contexts, the terms industrial design and product design are used totally synonymous with each other.¹ Especially scholars from marketing and innovation literature prefer to use the term product design, instead of industrial design, to refer to this discipline (Luchs & Swan, 2011), whereas scholars from management and design management literature are observed to favor industrial design. As this study is based majorly on design and design management literature, in the scope of this research, industrial design will be the preferred terminology to refer to the discipline, while product design will be used to denote the combined activity that can involve contributions from several other disciplines throughout the design of products.

2.2 Understanding '*Design as a Strategic Resource*' Discourse

Especially since the 1980s, which has been characterized by many as the "design decade" (Cooper & Press, 1995, p.1), design began to receive an increased attention from the media and the business world. Together with the growing design hype and mounting evidence regarding the benefits of effective design, an increasing number of academics and commentators pointed to design as a significant resource and concentrated on identifying the strategic contributions that design can make to organizations. This started a discourse on design's position as a strategic tool/resource for businesses of all kinds (Bruce & Bessant, 2002; Kotler & Rath, 1984; Svengren 1998; Svengren Holm, 2011).

In their article *Design: a powerful but neglected strategic tool*, Kotler and Rath (1984), being among the first to call attention to this argument, identified design as a strategy tool mainly in the context of marketing strategy and discussed in detail the wide ranging ways in which companies can use design to gain sustainable competitive advantages. They indicated that design can be used to create corporate distinctiveness, differentiate products, revive interest for products in mature industries, communicate value and information to customers, increase visual impact, improve information efficiency and enhance customer satisfaction in the long-term. Additionally, they tried to expand the traditional understanding of design limited to the context of products to a more holistic understanding of design that involves

¹ As an example the Design Council, UK, which is an important body providing design support and consultancy to UK's industry and local governments, uses the term product design instead of industrial design to refer to the discipline. Similarly, scholars from marketing and innovation literature prefer to use product design instead of industrial design (See Luchs & Swan, 2011).

organizational environments, communications and corporate identity. But most importantly, they attempted to situate design as a crucial element of strategy and planning processes, in order to lead businesses to superior customer satisfaction and company profitability.

Similarly, Lorenz (1986) pointed to the emerging role of design and specifically industrial design "as a key competitive weapon" (p. 3), endorsing his case within the background of globalization, increasing competition, fragmentation of markets, shortening product life cycles, emerging trends in technology and shortening product development cycles. He discussed industrial design's role in product differentiation; speeding up product development; assisting the formation of product and market strategy; making new connections between technology and customer needs; and integrating, coordinating and communicating between different departments and functional specialists. Expanding from these roles, he advocated that design must be a central part of marketing and corporate strategy (Lorenz, 1986).

Up to today, many other studies followed the discourse on design as a strategic tool, with similar depictions such as 'design as a strategic resource/asset' or the 'strategic use of design', denoting that design provides sustainable competitive advantages to businesses. Some characterized design's strategic role in innovation (Bertola & Teixeira, 2003; Ravasi & Lojacano, 2005; Utterback et al., 2006; Verganti, 2008, Von Stamm, 2004), some considered its contribution to business success (Chiva & Alegre, 2009; Gemser & Leenders, 2001; Hertenstein et al., 2001; Hertenstein et al. 2005; Roy & Riedel, 1997; Walsh et al. 1992), others pointed to its role in inducing change and strategic renewal in organizations (Borja de Mozota, 2003b; Deserti & Rizzo, 2013; Ravasi & Lojacano, 2005) and to its impact on consumer behavior (Bloch, 1995; Borja de Mozota, 2003; Veryzer 2000). Other researchers and practitioners revealed design's strategic use in the creation of deeper consumer connections (Noble & Kumar, 2008), its role in brand building (Kathman, 2010) and corporate identity (Olins, 1989; 2001). Although relatively new, design's strategic role with respect to corporate social responsibility (Koo & Cooper, 2011) and organizational cultural change (Lee & Evans, 2012) are other dimensions revealed by literature. Again a recent research identifies design's strategic role with respect to services (Candi & Saemundsson, 2011) and still other research emphasizes its role in the context of strategy formulation (Chung & Kim, 2011; Francis, 2002; Golsby-Smith, 2007; Hertenstein & Platt, 1997).

Compared to the initial identifications, it can be observed that the focus of design as a strategic resource discourse moved increasingly from design's more directly

observable contributions such as product differentiation, communication of value or speeding up new product development, to its more embedded and more difficult to observe roles such as its role in business performance, organizational change, innovation, and strategy formulation process. Yet the latter are increasingly more recognized roles for design that businesses are highly recommended to consider during their marketing and corporate strategy making processes.

In total, the literature provides wide ranging insights about the contributions that design can make to an organization, both at the functional and strategic levels. However the research is scattered, at certain times unclear about what is exactly meant by strategic use of design/strategic design/design as a strategic resource (Stevens, 2009), and without a guiding integrative framework to facilitate a comprehensive understanding about the contributions that design can make to organizations. Therefore the following sections aim to track the contributions of design to businesses, to provide a comprehensive view about how design can function in different ways inside an organization.

2.3 Design Activities Inside an Organizational Context

Every aspect of an organization can be designed. Consequently, different design activities can take place inside organizations, ranging from the design of buildings, workplaces and products to the design of advertising, corporate communications, and digital media. Therefore design activities inside an organization can span the whole spectrum of design disciplines, and can serve different organizational aims such as product differentiation, reducing time to market, communicating information or brand building to name a few.

In order to provide a structure for understanding and managing design activities, Gorb (1990) classifies four major fields of design activity that can contribute to an organization:

1. Product design: includes the design of totally new products or the re-design activities for existing products aimed at improvement and differentiation; it entails both industrial design and engineering design.
2. Environmental design: incorporates architecture, interior design, landscape design, and can be aimed at the design of corporate buildings, work environments, equipment and furnishings, in addition to the design of retail and service environments.

3. Information design: covers the design of all types of communication used by the organization to communicate with its internal and external stakeholders (e.g. customers, employees, suppliers) and can range from packaging graphics, catalogues, point-of-sale materials to annual reports and advertising.

4. Corporate identity design: utilizes information design, product design and environmental design to construct a uniform identity and image for the organization that express its values, goals and culture.

In a similar manner, Borja de Mozota (2003b) proposes a "matrix of design integration in a company" (p. 12) in which she classifies design activities into 4 groups as: environmental design, product design, graphic design and package design. In her matrix, she adds packaging design as a new category other than product design, while graphic design is seen to refer to the information design category in Gorb's (1990) classification.

Additionally, changes in technology, society, communication and consumption patterns have led to the rising importance of service economy and together with this, to the advancement of other design disciplines, such as service design and interaction design.

The manufacturing sector is lending its way to service industry, which is consisting of "70 percent to 80 percent of GDP in many developed countries" (Saco & Goncalves, 2010, p. 159). In today's economy, we are witnessing an increasing shift from products to services, in addition to product service systems (PSS), which suggest promising opportunities towards eco-efficiency and sustainability for addressing critical global challenges (Manzini & Vezzoli, 2002; 2003). In the context of material products, it is observed that companies are bundling their products with innovative services that differentiate their offerings; that satisfy customer needs; and that provide convenience, fun and other important added values. Additionally, services are gaining popularity in offering both physical and experience products to larger market segments, such as the case of on-line product sales and delivery services, on-line auctions or on-line travel organization and sales services. Therefore, in today's world, service design and interaction design constitute other major design disciplines that businesses can make use of either to support their business processes or to build their business models on.

Following up with design's expanding range, more recent classification models also include services and PSS inside their categorizations. For example, Soylu and Er (2014) provide a detailed review of design classification models suggested by

design management literature and propose a model based on four categories as: product-service systems, communications, environments and identity. On the other hand to categorize design expenditure taking place inside organizations, Moultrie et al. (2009) suggest 3 major categories as:

- Design in the creation of products and services, which include both the technical and the experiential aspects of those products and services.
- Design in the communication, promotion, and delivery of products and services; and in the creation and communication of the identity of the business.
- Design within the business, including the design of business processes or the design of the workplace to improve efficiency (p. 80).

They detail and explain each of these groups in Figure 2.3. Their model provides a comprehensive approach by including services, as well as business processes and business systems as major areas of design activity inside a business.

Design in the creation of products and services		Design in the communication, promotion, and delivery of products and services and in the creation and communication of the identity of the business		Design within the business	
Design relating to the technical / engineering aspects of creating products and services	Design of the user experience in the creation of products and services	Design as part of promotion, communication, branding, and distribution of products and services	Design as a part of developing, promoting, and communicating the corporate identity	Design of the organization, operating environments, and workplaces	Design of business processes and systems

Figure 2.3 : A model for capturing design spending (Moultrie et al., 2009).

It must also be underlined that today, the areas of design activity within a business are also strongly connected to the concept of customer *touchpoints*. An organization is now conceived as an entity coming into contact with different stakeholders through *touchpoints* that cover everything from products and services to environments, interfaces and communications (Lockwood, 2010, p. 92). As an overarching concept, denoting any way or area a stakeholder can get in touch with an organization, the idea of touchpoints provides a widened perspective to conceive

all the different areas that design can have an effect inside an organizational context.

The reviewed categorizations indicate where design can be used throughout the organization. However, it is also critical to understand how and in relation to which types of operational, functional and strategic objectives these different design activities can be utilized. The following sections focus on understanding design's different roles and contributions in connection to different objectives.

2.4 Different Roles for Design Inside an Organizational Context

2.4.1 Design adding value to products and services

Design can have various roles working at different levels inside an organization with different design disciplines contributing to different goals and activities. From an economic and commercial perspective, the role of design has initially been analyzed in the context of competitiveness (Lorenz, 1995; Walsh et al., 1992). In its most direct role, design increases the competitiveness of businesses by adding value to their offerings, with the ultimate purpose of: "make[ing] us desire the artifact that is designed, based on its 'image' and its function and performance" (Walsh, 1996, p. 515).

Design's recognition as "playing an important role in determining the success of products" has been significantly supported by studies made in the field of consumer behavior. Design defines various critical qualities of products and services, which in turn can increase their instant appeal, market demand, and their long-term customer satisfaction. In order to understand in which ways design can add value to a firm's offerings, the role of design has been studied from the perspective of customer choice, and various factors affecting customer's decision to purchase. These studies have ascertained "design's role as an important determinant of consumers' preferences and choices" (Veryzer, 2000, p. 64).

Walsh et al. (1992) analyze the wide array of reasons behind a customers' purchase decisions, such as cost, quality, convenience, financial arrangements for purchase, availability of services, servicing and part costs, influence of advertising, company image, brand loyalty, etc.; and group them as price and non-price factors in competitiveness. They underline that the non-price factors are at least as important as price factors and explain:

The non-price factors are those related to the quality and design of a product such as performance, reliability, appearance, safety, durability, ergonomics or ease of use and

maintenance ('intrinsic' non-price factors); and those related to the quality of the service offered by its manufacturer or supplier, such as delivery time, user training, technical services, after-sales service or availability of spare parts ('associative' non-price factors). (Walsh et al. 1992, p.65)

They indicate that design has a direct influence over many of these factors and provide a table (Table 2.1) which details the role of design in shaping both price and non-price dimensions of competition.

Table 2.1 : The role of design in competitiveness (Walsh et al., 1992).

Factor in Competitiveness			Influence of Design
Price		Sales price	Design for economic manufacturing and economic part costs
		Life-cycle costs	Design for economic maintenance use and service costs
Non-price	Intrinsic non-price (Product related)		Product performance
			Uniqueness
			Appearance
			Finish
			Quality
			Reliability
			Durability
			Safety
			Ease of use
			Maintenance
			Ergonomics
			Portability
			Etc.
	Associative non-price (Organization and Service Related)	Company image	Product presentation
			Packaging
			Display
			Promotion
		Delivery time	Ease of development
		After-sales service	Ease of service
			Ease of repair

Therefore, in this major economic and commercial role, design adds value to products and services by defining attributes, such as their performance, appearance, ergonomics, eco-friendliness, etc., and by influencing their costs through the determination of factors such as number of parts, ease of manufacture, material use, and speed to market. Additionally, design has a major influence on product's life cycle and after sales costs, as well as attributes such as ease of repair and ease of service. Design increases the value of a firm's offerings and its competitiveness also through the dimension of corporate image and identity.

2.4.2 Design in corporate identity, corporate image and branding

Corporate identity and image are strongly bound to each other. The concept of corporate identity has developed from its roots in corporate visual identity to cover all expressions of an organization (Cornelissen & Elving, 2003). According to Bouchet (2015) corporate identity defines the way a company perceives itself.

Whereas, corporate image refers to the way the company is perceived by others, and is described as "the collective perception that the stakeholders have of corporate identity" (Malevar & Karaosmanoglu, 2006).

Design's role in the creation of corporate identity and image, in addition to a closely linked process of branding - and the generation of brand identity and image - has been established by important practitioners as well as researchers (Kathman, 2010; Olins, 1978, 1989; Stompff, 2003; Wheeler, 2012). They illustrate that design functions in this process by creating, orchestrating and projecting the desired image through all touchpoints, from company logo, packaging, work environments and architecture to products, sales environments, promotion materials, online mediums and published and digital communications. Additionally, design does not only create corporate and brand identities, but is an important resource for their continued performance, their renewal, as well as for the repositioning of established brands, products and companies (Trueman, 1999).

2.4.3 Design in major organizational processes

Another perspective is provided by various scholars in terms of design's role in the context of critical organizational processes, such as new product development, marketing and production. In this perspective, academics particularly underline the communicative and integrative role of design, and describe designers as a "bridge", a "connector", a "gatekeeper", an "interface", an "interpreter", a "translator", an "integrator" between different networks of people, different networks of functions, and between different business objectives (Borja de Mozota, 2003b; Cooper & Press, 1995; Lorenz, 1986; Trueman & Jobber, 1998; Walsh, 1996; Walsh et al. 1992).

At one level, as characterized by Freeman, "the designer stands between the user and the producer" linking user needs and producer capabilities, in other words, it is "where the 'coupling' occurs between technical possibilities and market demands or opportunities" (as cited in Walsh, 1996, p. 514). At this level, designer's task in understanding user needs, preferences, and lifestyles (Borja de Mozota, 2003b, Walsh, 1992), recognizing broader changes in society and the environment (Blaich & Blaich, 1993; Verganti, 2008), and integrating this information, understanding and insights into new ideas about products, services and environments become very critical.

At another level, designer links various functional groups within the organization, integrating their perspectives and functional constraints in the generation of end products. Walsh (1996) explains:

[...] the designer can be seen as an actor playing a key role as translator in one or more networks of people (inside and outside the firm, all with different knowledge, information, skills and desires), and of ideas, artefacts, instructions, cost constraints, machinery, blueprints, prototypes and so on. (p. 515).

Through this integrative role, design can lead to effective products and innovations (Borja de Mozota, 2003b) that create deeper consumer connections and customer satisfaction, as well as process efficiencies and reduced time to market (Fujimoto, 1990; Trueman & Jobber, 1998).

This communicative and integrative role for design is especially underlined in the context of new product development (NPD) and innovation processes (Borja de Mozota, 2003b; Perks et al., 2005; Veryzer, 2002; Von Stamm, 2003), where designers' role in bringing together perspectives, inputs, concerns and considerations of different groups and functions (e.g. marketing, engineering, R&D, management, production) is extremely critical.

In innovation, "design can play the all important role as an interface between project team members and other company personnel as well as stakeholders who may be suppliers, distributors, customers or shareholders" (Trueman, 1999, p. 118). Due to the recognition of this significant position, researchers identify that design is becoming more and more critical in NPD and innovation contexts (Borja de Mozota, 2003; Veryzer, 2002; Von Stamm, 2003). Perks et al., (2005) indicate that the role of design in the NPD process have moved from "design as a subprocess of NPD", which was the case in 1990s, to "design as product development process leader" in the 2000s (p. 112-113).

Another important business process where design, and its communicative and integrative role has significant contributions is production. Lack of effective communication and integration between the design and the production department increases product iterations and lead times, leading to significant costs (Christensen, 1998). Through efficient communication and consultation with production engineers and manufacturing personnel, designers can integrate critical considerations for implementation, manufacturability and time and cost savings into products (Cooper & Press, 1995). In this way, designers can reduce the complexity of products and therefore production processes, by reducing number of parts; and through designing for ease of manufacture, by incorporating details for easy

assembly, modularity and economies in material use (Cooper & Press, 1995; Trueman, 1999).

2.4.4 Design in corporate culture and climate

Researchers also point to design's role in the creation and development of an innovative corporate culture and climate, in other words, the generation of a creative environment that "encourages and stimulates new ideas" (Cooper & Press, 1995, p. 168). In this context, Cooper and Press (1995) explain that design activities themselves are contributors to innovation and creativity, but in addition to the role of engaging in design processes, the existence of designers inside the organization can also contribute to the formation of an innovative climate due to their education, attitude of mind, creativity based working methods and thinking approach. Similarly Borja de Mozota (2003b) points to the strong links between design, corporate culture and identity. Defining culture as the "set of representations, symbols, values, and beliefs shared by the human group that constitutes the institution" (p. 153), she highlights that the links between design and culture are reflected through both the visual symbols but also in the psychological climate that is developed. People, artifacts, interactions and relationships interact and influence each other towards the formation of shared values, beliefs and behaviors. Therefore engagement with designers and design activities can guide the organization towards the generation of more creative and innovative organizational cultures.

2.4.5 A model for the contributions of design to a firm's products and services

With the aim of integrating different perspectives with regard to design's role inside an organizational context, Trueman (1999) has identified design attributes working at different dimensions and groups them to provide a framework for 4 different dimensions of design implementation (Figure 2.4).

In her *VIPP design dimensions* framework Trueman (1999) denotes 4 levels that design contributes to the performance of a firm's products and services as: value, image, process, production. At the value level, she focuses on design's role in customer perceived value, where design adds value to products and services by being able to determine attributes such as quality, appearance, ergonomics, functionality, ease of use, performance and eco-efficiency. At the image level, design can function in the definition, strengthening and repositioning of brand image, it can contribute to the establishment of corporate identity and the creation of a corporate design culture. At the process level, she concentrates on the product development process and indicates design's potential roles as increasing the speed

and efficiency of the product development process by working as an interpreter and integrator of ideas and by communicating between departments and team members. Also at the production level, design is able to enhance the efficiency of the manufacturing processes and reduce time to market, by reducing product parts, decreasing material use, or providing modularity.

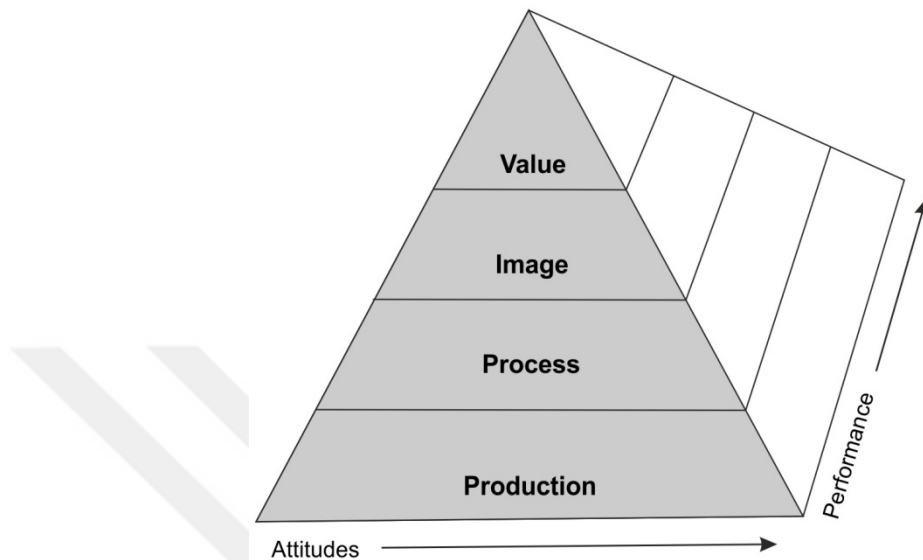


Figure 2.4 : VIPP design dimensions (Trueman, 1999).

Cooper and Press (1995) express that design contributes to achieving strategic goals through its wide ranging roles in different dimensions inside an organization. She uses case studies to illustrate how design is used in various ways to achieve strategic goals, such as securing unique niche markets, developing distinctive identity, exploitation of scale economies and increasing speed in product development to answer fast changing market needs.

2.5 Design in Competitiveness and Business Performance

The economic value of design, both in terms of business and national competitiveness was first recognized in Britain by the government, towards the first half of the 20th century. The Council of Industrial Design was established in 1944 that later became the Design Council, which is one of the most important governmental bodies in the promotion of design, providing assistance, advise, tools and knowledge for the utilization of design by the British industry. In the 1980s, in response to UK's decline in overseas markets, UK government increased its focus on design as a vital factor in national competitiveness and in the commercial performance of English businesses, and began several government initiatives to promote good design (Roy & Potter, 1993; Cooper & Press, 1995). It is observed

that this was also an important trigger in the intensification of research on design, and specifically, research concentrating on contributions of design to business performance.

Initial studies had a stronger focus on identifying design's role in increasing the competitiveness of businesses in international markets. In their book *The Role of Design in International Competitiveness*, Ughanwa and Baker (1989) drew on their studies among companies that are leaders in export amounts in their specific fields to conclude that design instead of price is the major factor that determines customer satisfaction. Moreover, they revealed that effective design is the principal characteristic of these companies, which compete successfully in international markets. Their research, which was based on questionnaires sent to 138 firms, demonstrated that design is correlated with competitiveness, and is a significant factor in determining the success of manufactured products in export markets.

Research also concentrated on examining the effect of design on various indicators of business performance, such as sales, turnover, profit, and return on investment. One of the most cited studies investigating the relationship between design and business performance of British firms, explored the commercial performance of design award winning firms in comparison to a random selection of firms from the same industry (Walsh et al., 1992). They found that firms with design awards performed significantly better in business performance indicators such as turnover growth and profit growth. The study identified design as a major source of competitive advantage and discussed its critical impact on both price and non-price dimensions of competition (Walsh et al., 1992).

Several studies on the commercial impacts of design, conducted in the late 1980s and early 1990s by the Design Innovation Group, investigated commercial performance of firms at the design project level and revealed that firms investing in design achieved commercial returns such as increased sales, new markets, and increased exports (Roy & Potter, 1993; Roy & Riedel, 1997). The evidence provided by these studies were mainly based on commercially successful projects and built on project level performance measures.

Another study, also conducted by the Design Innovation Group, identified that 'design conscious' firms in the plastics industry (defined as those which had at least one design award, prize or citation for its products) had consistently better performance measures of turnover growth, capital growth and return on investment than the study's representative firms that were not design conscious (Walsh et al.,

1988). Their study on the design leader firms in the heating, furniture and electronics sectors also showed that these firms had higher return on capital and higher profit margins compared to other firms in the same industry. Similarly, a more recent study by Gemser and Leenders (2001), examined the relationship between industrial design intensity and overall company performance in two different industries, where they used turnover, turnover growth, profit, profit growth and exports as indicators of company performance. Their results indicated that business performance is generally positively related to industrial design intensity and this relationship is even stronger in the industry where design investment is relatively new, compared to the industry where investment in design is a common strategy. Therefore their results also emphasized the potential role of design for improving business performance in industries where the use of design is less mature.

Hertenstein et al. (2005) studied the relationship between industrial design effectiveness and company financial performance, where firms' design effectiveness was ranked by a panel of expert industrial designers, and firms were divided into two groups as those with high design effectiveness and low design effectiveness. For financial performance measures they used returns on sales, returns on assets, growth rates of sales, net income, cash flow and stock market returns for a 7 year period. Their analysis revealed that design effectiveness is positively related to corporate financial performance and stock market performance, even after allowing for expenditures made on industrial design.

An alternative study, conducted by Chiva and Alegre (2009) took a slightly different perspective. Instead of investigating the relationship between design and firm performance as a direct relationship, they explored this relationship through the mediating role of design management skills. Using self reported scales to operationalize the measures, they found that investment in design is positively related to design management as well as firm performance. Additionally, the results indicated that design management skills play an important role in determining the effects of design investment on company performance, providing significant implications for design management.

While most of the research has focused on industrial design in the context of manufacturing firms, there is also empirical evidence on the contributions of design to business performance from the service industry. In their study, which explored the use of design in new service development and its effects on business performance, Candi and Saemundsson (2011) revealed that in addition to contributing to profitability and competitive advantage, design also contributes to resistance to

imitation. Besides, their analysis showed that the positive relationship between design and resistance to service imitation is stronger in sectors where design is not expected to be utilized as an element of new service development, which also points to the higher sustainability of advantages generated through design in sectors with lower design focus. Similar to the findings of Gemser and Leenders (2001), their study indicates that in industries where design use is less mature and less expected, design offers a higher potential to improve competitiveness and business performance.

In addition to academic research, several industrial studies were also carried out by design organizations, such as the Danish Design Centre (DDC) and Design Council (DC), UK. DDC's research named *The Economic Effects of Design* (Danish Design Centre, 2003) revealed that companies that purchased design have registered a total increase in their gross revenue amounting to 22% above average growth, and higher exports, compared to companies that do not purchase design. Additionally, both gross revenue and export performance were observed to be better, the higher the companies were located in the 'Design Ladder', which is a framework developed by DDC to identify "the different levels in which companies adopt design" (Danish Design Centre, 2003, p.28). Similarly, Design Council's surveys on British firms indicates that nearly two thirds (59%) of the businesses agree on a positive link between investment in design and profitability (Design Council, 2008). Based on several surveys and studies, Design Council concludes that "Businesses that add value through design see a greater impact on business performance than the rest." (Design Council, 2007, p. 8).

Although the reviewed studies used various approaches to the measurement of design effectiveness (such as design investment, design emphasis, design outcomes and design management), and explored the contributions of design to firm performance employing different indicators of business performance (turnover, turnover growth, profit, profit growth, export, etc.), all together they have provided mounting evidence and detailed accounts on how investment in design and effective design is correlated with increased financial performance and increased competitiveness. Consequently, the evidence provided by this research stream contributed further to the appreciation of design as a strategic resource for businesses.

2.6 Design in Innovation

Another major research stream in design and design management literature explores the contributions of design in the context of innovation. Today innovation is at the heart of science, technology and industrial policies of many developed and developing economies around the world, as it is regarded as "the dominant factor in national economic growth and international patterns of trade" (Organization for Economic Cooperation and Development [OECD], 1997, p. 15). OECD (2007) indicates that the importance of innovation has been strengthened even more by the factors of globalization and rapid developments in technology, which have resulted in the creation of totally new markets and new forms of competition, increasing the pressure on countries to continually undertake a process of innovation in order to move upwards in the global value chains.

Together with this increased focus on innovation, one of the most important roles for design originates from its central position in the innovation process. As Walsh et al. (1992) indicate: "Every innovation, from the most radical to the incremental, requires design input." (Walsh et al., 1992, p. 25). This recognition has been escalating, especially in the last decade, while various scholars from design, management and innovation literature have been characterizing design as a strategic business resource for creating product, process and business innovations (Bertola & Teixeira, 2003; Borja de Mozota, 2003b; Utterback et al., 2006; Verganti, 2003, 2006, 2008, 2009; von Stamm, 2003).

2.6.1 Innovation, its levels and categories

Innovation as a process, can be defined broadly as "the act or process of introducing new ideas, devices, or methods" (Merriam-Webster's online dictionary, n.d.) or "the embodiment, combination, and/or synthesis of knowledge in novel, relevant, valued new product, processes or services" (Leonard & Swap, 1999). Innovation is explained as differing from invention such that innovation involves both invention, a unique and novel idea or method, and its commercial exploitation as a product, service or process, through several other important activities necessary for it to be introduced to the market as an economic offering. Invention is only the initial step in a lengthy process of turning a new idea into effective and widespread use while innovation is expressed by many as the successful commercialization of new ideas and inventions (Tidd et al., 2001). Consequently, the innovation process can be described as having two major phases, the first being usually more technical in nature with major inputs from engineering and R&D, and the second phase being

focused on effective commercialization, with major inputs coming from design and marketing (Candi, 2006).

Innovations can involve different degrees of novelty. Two major levels of innovation are introduced by Schumpeter as *radical innovation* and *incremental innovation*. Radical or disruptive innovation creates major, disruptive changes in a market (Schumpeter, 1942) that totally alter how a product is viewed or how a process is undertaken in an industry (Tidd et al., 2001). Whereas, incremental innovation is the continuous advancement of the process of change (Schumpeter, 1942), through improvements made on the performance, use, and value of products, services or processes. Therefore the degree of innovation can vary in the range from radical to incremental innovation, and can differ between firms, industries and countries, resulting in different levels of competitive advantages.

Although the generation of radical innovation is at the center of most innovation efforts and research, due to their long wave effects throughout the industry and economy (Freeman et al. 1982), and their likelihood for providing long term competitive advantages and higher profits (Walsh et al., 1988), successful radical innovations are much rare to generate compared to successful incremental innovations (Norman & Verganti, 2012). However both forms of innovation are complementary such that radical innovation "brings new domains, new paradigms and creates a potential for major changes", but is often difficult to use in the initial stages due to limited capabilities or high prices (Norman & Verganti, 2012, p. 6). On the otherhand it is incremental innovation, which "transforms the radical idea into a form that is acceptable to those beyond early adopters" and realizes the possibilities enabled by radical innovation in enhanced ways (Norman & Verganti, 2012, p. 6).

Schumpeter (1934) grouped innovations into 2 major categories as product and process innovations. Product innovations involve the introduction of new products, or making important improvements in the quality of existing products. While, process innovations involve the introduction of new processes, methods or materials in the production or delivery of products and services, which improve the efficiency, productivity or value of the production and delivery processes. Additionally, Greenhalgh and Rogers (2010) explain that product innovations can include tangible manufactured products, intangible services, as well as combinations of these two; meaning that the term product refers to both goods and services. Some scholars have presented organizational innovations as another category of innovation. However organizational innovation is regarded by Schumpeter and others as a different type of process innovation (Mutlu & Er, 2003; Greenhalgh & Rogers, 2010).

2.6.2 Roles of design in the innovation process

Since Schumpeter's initial characterization of innovation as the *engine* of the capitalist economy, driving commercial profit, economic growth, and consequently the development of the standards of life (Schumpeter, 1934, 1939, 1942), the theory of innovation has been advanced significantly by scholars from diverse fields. The literature on innovation has put a more intense focus on technological innovation, therefore bringing engineering and R&D to the forefront of the innovation process (Helfat, 1997; Tether, 2005). Consequently, scientific and technological information and technological capabilities have generally been regarded by many scholars as the central driver of innovation (Helfat, 1997). However, an increasing body of research has also been pointing to the critical role of design inside the innovation process (Candi, 2006; Freeman, 1982, 1983; OECD, 1992; Utterback et al. 2006; Verganti, 2008, 2009; Walsh et al. 1992), as well as to its important function in the successful commercialization of technological innovations, "where technical possibilities are connected with market needs" (Walsh et al. 1992, p. 23). Additionally, more recently researchers have characterized design as the major driver of certain forms of innovation, which they refer to under the terms "design innovation" (Mutlu & Er, 2003;), "design-inspired innovation" (Utterback et al. 2006) or "design-driven innovation" (Verganti, 2008, 2009).

2.6.2.1 Design in technological innovation

A technological product innovation is defined by OECD's (1997) Oslo Manual as "the implementation/commercialisation of a product with improved performance characteristics such as to deliver objectively new or improved services to the consumer" (p. 9). The technological innovation process consists of various activities or sub-processes, all necessary to transform an idea or invention into a new product, service or process available for use, such as research, design, development, market research, market testing, manufacturing engineering, marketing, etc (Walsh et al., 1992). Initially, it was design's function as a core activity in the overall technological innovation process that was emphasized by researchers. Similarly, it is in this respect that OECD explains: "Design is the very core of innovation. The moment when a new object is imagined, devised and shaped in prototype form." (as cited in Walsh et al., 1992, p. 18).

Figure 2.5 indicates design's central role in the context of product innovations, where Walsh et al. (1992) explain *the design and development* process as: the activity that takes the initial idea and/or invention and embodies it in various design

concepts; develops these concepts into initial prototypes; then into detailed drawings; determining technical and aesthetic specifications, materials and components; and finally transferring these to production. In this process, design is vital to the commercialization phase of innovation, enabling the linking of technology to the market, and "providing a bridge from technical functionalities to value in a finished product or service" (Candi, 2006, p. 353). Consequently, especially in the context of technological innovations, design plays a crucial role in the successful implementation of technological innovations, their effective commercialization, "where technical possibilities are connected with market needs" (Walsh et al. 1992, p. 23), and in the "humanization" of technologies (Cooper & Press, 1995, p. 138) through the generation of smooth and meaningful applications for new technology, with a focus on increasing ease of use, acceptance, adaptation and diffusion.

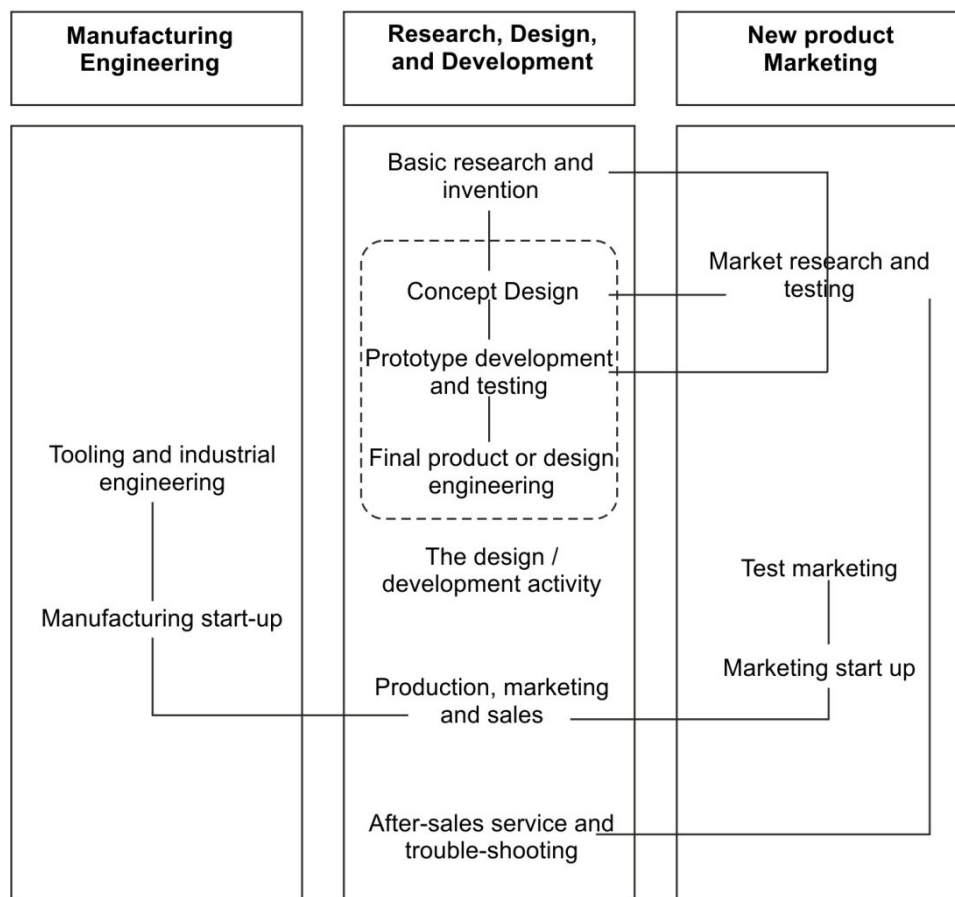


Figure 2.5 : The process of technological innovation showing the role of the design and development activity (Walsh et al., 1992).

2.6.2.2 Design innovation

Besides design's role as a core activity which transforms technologies into usable products and services, and in enhancing their value and performance through

gradual developments and re-designs, design itself can be the source of innovation. The recognition that in some cases innovation can also happen, without a technological change or novelty, but solely or principally through design novelty have lead to the necessity to make a distinction between technological innovations and innovations attained through design. Consequently, this identification has also brought forth several recent terminological and conceptual developments suggesting new categories for innovation such as *design innovation* (Mutlu & Er, 2003; Walsh et al. 1992), *innovation by design*, *design inspired innovation* (Utterback et al., 2006) and *design driven innovation* (Verganti, 2008).

Mutlu and Er (2003) draw attention to the increasing use of the term design innovation in academic and professional design discourse. They analyze *design innovation* as a new category of innovation, which can constitute both radical or incremental innovation, depending on the degree of novelty introduced. Through an extensive review of design and innovation literature, they propose a definition for *design innovation* as:

(a) *the incremental novelties in the design of an existing product or service, or (b) radically new products or services obtained by design effort with no or minimal technical novelty.*" The 'design effort' mentioned in this definition refers to '*a design activity with a central role of 'industrial design', and contributions of a variety of design practices*'. In addition, within the framework of this definition, 'design innovation' concerns both radical and incremental innovations. (Mutlu & Er, 2003, p. 18)

In a similar manner, Utterback et al. (2006) describe *design-inspired innovation* as those products, processes and services that "broaden and change the boundaries of performance, usefulness, and meaning" and provide a delightful customer experience through a "creativity of a higher order" (p. 1-2). In their view, instead of placing the weight on technology and function, design-inspired innovation finds a balance between technology, market needs and meaning. This is achieved by combining functionality with emotional and symbolic values that provide meaning and delight to users, where design is the key ingredient. They explain that design inspired innovation is based on design effort at the systems level, which is combined with a fresh approach, simplicity and elegance; often resulting in products with new uses, new functionalities and their integration with a system of services and accessories that further enhance their functionality and experience.

Verganti (2008) proposes a similar terminology, *design-driven innovation*, as the process of generating radical innovations in the meaning of products. Although design is still at the center of the innovation process, he takes a slightly different approach. This approach aims to "radically change the emotional and symbolic

content of products (i.e., their meanings and languages) through a deep understanding of broader changes in society, culture, and technology" (p. 436). He gives examples from design-driven innovations such as Swatch watches and Bang & Olufsen's Beosound 4000 stereo; the former changing the meaning of a watch from a jewel and a time instrument into a fashion accessory, and the latter changing the meaning of a music player from an electronic gadget into a piece of furniture. Instead of being based on user requirements, user studies and market needs, design-driven innovation is shaped by visions concerning how novel meanings can be proposed to users in the context of changing environments, lifestyles and technologies. The change in the meaning of the product is at the center of *design-driven innovation* and this may or may not require technological novelty (Figure 2.6).

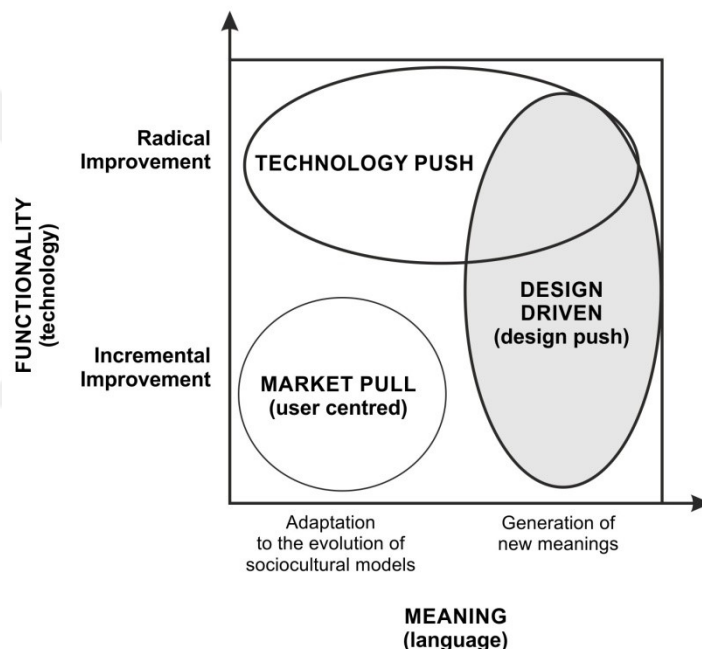


Figure 2.6 : Design driven innovation (Verganti, 2008).

Although providing slightly different interpretations and being aligned with different levels of innovation, all these conceptual developments - design innovation, design-inspired innovation, and design-driven innovation - characterize innovations attained mainly through design effort. In this context, design replaces technology as the major driver of the innovation process, design itself being the source of novel ideas, concepts, and perspectives. In the process of design innovation, the main role of design moves from the secondary phase of innovation, as the core function in the commercialization phase of the idea, to the first phase of innovation, as the core function in the generation of the unique idea itself. Therefore in design innovation, design becomes the major driving activity all throughout the innovation process.

2.6.2.3 Other roles for design inside the innovation process

Research identifies various other critical roles for design in the innovation process. One of these roles is understanding cultural and environmental opportunities, lifestyle trends, user needs, preferences, and changes in social values in order to embody this broad understanding in novel visions. (Blaich & Blaich, 1993; Borja de Mozota, 2003; Verganti, 2008). These socio-cultural sources of ideas and inspiration can lead to highly unique outcomes in terms of both meaning and use, and thus are acknowledged as extremely valuable for innovation. Although this role of design is especially emphasized in the context of *design-driven innovation*, *design-inspired innovation* or *design innovation*, it is also critical for technological innovations, specifically, for their successful commercialization. Additionally, this approach is expressed as a strategy that is more likely to generate radical innovations that focus on providing major changes in either the meaning or the use of products and services (Norman & Verganti, 2012). According to Verganti (2008), this role of design is particularly underlined in the innovation strategies of design-intensive firms.

Another important role for design in innovation is mentioned as understanding user needs, and internalizing customer/user information and feedback (European Council, 2009; Norman & Verganti, 2012). This role for design is especially underlined in the context of user-centered innovation. In the initial phase of user-centered innovation processes, design resources are utilized in studying users, and identifying problems through techniques such as ethnographic research, user observation or participatory design. In the following phases, design is utilized to solve the identified problems and opportunities, through ideation, the transfer and development of ideas generated from user research to design concepts, and in prototyping and testing of the generated concepts in iterative cycles until a satisfactory outcome has been reached. The role of design have also been emphasized in the context of lead-user research, open innovation (Acha, 2008), user innovation and co-creation processes (Von-Hippel, 2005). However user centered innovation processes are most likely to provide incremental innovations due to their focus on understanding difficulties, problems and opportunities with respect to existing products and services (Norman & Verganti, 2012). This approach usually leads the way to improvements in existing products and services rather than totally new visions.

An alternative role for design appears particularly in the context of knowledge management. Design's integrative role in bringing together different ideas,

knowledge domains, various organizational functions and networks of people has already been revealed by many researchers (Borja de Mozota, Lorenz, 1986; Walsh et al.1992). This role of "design as a knowledge integrator" is underlined as even more critical in the context of innovation, where design acts "as a knowledge agent by collecting, analyzing, and synthesizing the knowledge contained in the three domains" of users, organizations and networks (Bertola & Texeira, 2003, p. 183). Besides integrating and synthesizing user's community knowledge, organizational knowledge and network knowledge in the generation of innovations, design is indicated to have a brokering role (Bertola &Texeira, 2003, Hargadon, 2003). By moving technological knowledge among different industries (Hargadon & Sutton, 1997), design acts as a broker of knowledge, ideas, and solutions between different industries, organizations, user communities and networks (Bertola & Texeira, 2003; Verganti, 2008). Promoting knowledge flow from the outside, to the inside of the organization, design triggers innovation through the cross-fertilization of ideas, facilitating the application of knowledge and solutions from different domains in totally new contexts and industries.

2.7 Design in Organizational Change and Strategic Renewal

Besides the more established roles of design such as differentiating products communicating value, driving innovation or contributing to better business performance, literature increasingly points to design as a stimulating and supportive resource that can eventually bring about organizational change and strategic renewal (Buchanan, 2008; Borja de Mozota, 2003b; Deserti & Rizzo, 2013; Junginger, 2008; Lee & Evans, 2012; Lockwood, 2011; Ravasi & Lojacono, 2005; Smith, 2008). Researchers indicate that besides the more direct economic benefits of design, the process of carrying out design projects, the introduction of design knowledge and skills to the organization, and the continuous application of these skills in the development of new products and services are observed to incite important indirect effects, such as changes in organizational processes, corporate strategy and organizational culture. However, these changes and transformations are long-term and are more difficult to recognize and analyze (Smith, 2008).

In his research, which focused specifically on identifying the long-term, non-economic impacts of government subsidized design-focused projects on business strategy and organizational design practices, Smith (2008) concludes that "Design-specific projects contribute towards both direct economic benefits and indirect, qualitative changes in business strategy and culture" (p. 72). The most striking

organizational changes observed were increased commitment to design, increased positive attitudes towards design, increased understanding of design processes resulting in more efficient use of design resources, investment in design technologies, review of design strategies, and the integration of design into marketing strategies and NPD processes. Additionally, among other non-financial benefits of investment in design, he lists changes in marketing strategies, such as coordinated branding and packaging; the recognition of the value of branding and styling in the development of an image of quality; and the entrance to design competitions, leading to subsequent effects such as the increased publicity raising the profile of the company. However, Smith (2008) also underlines that the enterprises in the research were "favourably predisposed to design" (p. 96), receptive to new ideas and the absorption of new knowledge and skills. He emphasizes that these conditions were critical factors, not only in the success of design projects, but also in the generation of successive changes in business strategies and organizational culture.

Similarly, Junginger (2008) focuses on the role of product development in changing the organization. She specifically concentrates on human-centered product development and indicates that by the introduction of the user perspective to the organization, designers can assist the business to reorganize itself in order to improve the customer experience. According to her, by their active participation in making change happen, designers incrementally guide the organization towards new visions. As a result, product development becomes an inquiry into the organization, where the organization learns "develops and changes in the development of a new product" (p. 31) and "A more human-centered organization is one of the development outcomes" (p. 31). She proposes human-centered product development as a vehicle and a deliberate strategy for generating organizational change.

Nevertheless, there is also another side to design's involvement in the organizational change process. The formal integration of design into organizational processes, especially if it is for the first time, can present a "culture shock" for the businesses (Smith, 2008, p. 97). This is expected, because design, both as a new function and by its very nature, challenges the established routines, traditional approaches and ways of doing things. Consequently, the integration of design into the company necessitates the organization to go through a wide-ranging adaptation and change process in order to absorb this new knowledge and skills, as design

processes can have an effect on all parts and levels of the company, from marketing to production, from corporate strategy to NPD processes.

Similar to Smith's (2008) depiction of design setting out a "culture shock", Deserti and Rizzo (2013) point out that the introduction of design culture to organizations encounters many challenges and obstacles, because design confronts the established culture and in consequence, experiences the natural resistance to change inherent to organizations. As a result "design culture seems to fight a daily war" throughout this integration process (Deserti & Rizzo, 2013, p. 36). Jenkins (2010) provides a similar picture about the challenges in introducing design inside inside businesses explaining that when integrating design into an organization the organization needs to go through an entire cultural transformation. However, Deserti and Rizzo (2013) also point out that it is exactly through this constant tension between the current culture and the one necessary to accommodate design that organizational change takes place. Consequently, the culture of the enterprise transforms as a result of the interaction between these two different cultures interacting throughout the process of development of new products and services. Using case studies, they reveal and discuss how the interaction with design culture in new product development processes, and the introduction of design capabilities to organizations triggered dynamic and emergent changes in the cultures of the companies studied. They characterize that organizational and cultural changes happen as a "side-effect" and "in unexpected ways", by "challenging the ways in which people interact with one another, its existing capabilities, and how daily activities are accomplished." (Deserti & Rizzo, 2013, p. 52). Deserti and Rizzo (2013) specifically study the effects of design and new product development projects on organizational culture, from the perspective of organizational change, and suggest that design practice and culture initiates a bottom-up and emergent approach to organizational change, compared to the top-down and prescriptive methods proposed by some of the organizational change and change management literature. Viewing design culture as a "system of knowledge, competencies and skills" utilized in the development of new products and services, and mediating between the worlds of production and consumption, they situate design "as an implicit agent of organizational change" (p. 42), providing potential to be carried out intentionally to bring about organizational and cultural change. Other researchers likewise locate design as a source of organizational change and suggest that it can be used proactively as a change tool within organizations (Borja de Mozota, 2003b).

In a similar manner, but focusing specifically on strategic change and renewal, Ravasi and Lojacono (2005) propose design-driven strategic renewal as a model for organizational renewal. In their model, design is the driving factor that stimulates and supports a continuous process of product innovation, and a process of regular revision of the strategic direction of the company. Having studied leading organizations renowned for their innovative product designs, the researchers observed that changes in product designs as well as internal experimentation and development projects that explore new business opportunities have led to the repositioning of brands, and shifts in the strategic course of these companies. They explain that changes generated by design at the product level have gradually induced changes at the organizational level: "What started as a more or less substantial variation in product design eventually results in an organization-wide renewal in values, beliefs and strategic positioning" (p. 56). Similar to Deserti and Rizzo's (2013) perspective of design creating organizational change in an implicit and emergent way, they view strategic change and renewal through design, as an emergent process, brought about by the continuous engagement in a process of innovation, which is complemented by a periodic revision and redefinition of the business strategy. Design driven changes in products and services, result in changes in the processes, approaches and strategy, used in the development, production and delivery of these offerings to the market. Consequently, product level changes and organizational changes evolve in a cyclic feedback process, leading to organizational development, change and strategic renewal.

The overviewed studies reveal that the development of new products and services have the potential to bring about important changes in all aspects of the organization, such as processes, knowledge, capabilities, technologies, behaviors and values that all together constitute the culture of an organization. Both the first time introduction of design capabilities and their continual development and utilization in the generation of new products and services, can lead to unexpected changes throughout the organization, usually starting within the areas of marketing, NPD and production, gradually diffusing to other areas and levels, and finally leading to changes in the overall organizational culture and corporate strategy. It is also noted that the degree of organizational change increases with the degree of novelty of the new products and services created (Deserti & Rizzo 2013; Jevnaker, 1998). However research also reveals that design bringing about organizational change and renewal is not unconditional, but dependent on several factors, such as the way the design process is managed and coordinated with other functions

(Ravasi & Lojacono, 2005); the organizational openness to change and to the absorption of new knowledge and skills (Smith, 2008); and existing design attitudes - essentially, whether design is acknowledged as an important capability and a resource for creating competitive advantage. Pointing to an increasing interest, on design's role in management and organizational change, not only on the part of design researchers but even more so by management scholars and practitioners, Buchanan (2008) identifies the need for a new line of design research "oriented directly toward the effect of design on organizational life" (p. 3).

2.8 Design in Strategy

Business organizations combine different activities and resources in the creation of a value that the market will be willing to pay for, with the ultimate aims of making profit and being sustainable. Strategy is about making business decisions that are targeted at creating and sustaining competitive advantages. It is basically defined as the process of setting organizational goals and defining courses of action for achieving them (Andrews, 1980). It connects the ends (goals) to means (policies) (Porter, 1980) and guides the business on which activities to carry out and how to use its resources in order to achieve its business goals.

Design is one of many resources that a company can acquire and utilize inside its strategy towards the creation of sustainable competitive advantages. Corporate goals and strategies eventually shape how design is utilized, whether intentionally, through a clear connection between business strategies and design, or unintentionally, through an emergent process influenced both by strategy and organizational culture.

Corporate planning, and the philosophy and strategy which are implied, or made explicit, in the plans have a decisive influence over the design process. Even if design is not explicitly mentioned in a firm's strategy and plans, this itself has implications for the way in which design is likely to be regarded, the way in which resources are allocated to it and the management of the design process. (Walsh et al., 1991, p. 104)

As have been discussed in detail in the previous sections (See chapter 2.2, Design as a Strategic Resource Discourse) design is increasingly acknowledged as a strategic resource by many researchers, as well as an increasing number of business organizations. However, in order to transform design into a strategic resource, first it is essential to recognize its potential in the overall business context, and then to align its utilization with business goals and strategy.

Although the business world is relatively delayed in beginning to acknowledge the strategic potential of design, the recognition of the important relationship between corporate strategy and design and design's strategic role for businesses has long been underway in design management literature. Establishing a strong relationship between corporate strategy and goals and organizational design practices has been one of the most underlined subjects by design management scholars (Bruce & Bessant, 2002; Cooper & Press, 1995; Walsh, 1995; Walsh et al. 1992). Aligning design practices with corporate strategy and goals is a key condition to ensure that design contributes to organizational objectives, in addition to getting the most out of design's potential contributions. The role of design in strategy can be considered in two major ways: one is exploring the function of design in strategy implementation; and the other is design's specific roles in strategy formulation. These will be reviewed in the following subsections.

2.8.1 Design in strategy implementation

The earlier theoretical works and research linking design and strategy mostly conceptualized this relationship as a progression starting from strategy and flowing to design. Hertenstein & Platt (1997) explain that in this first route, "strategy drives design" and "information flow[s] from the strategic planning process to the design process so that the strategic planning outputs become design process inputs" (p.10). This means that "strategy provides direction and focus" to design, guiding decisions regarding design resources, design strategies and activities (Cooper & Press, 1995, p.111).

To illustrate the influence of strategy on design, Walsh et al. (1992) indicate that:

firms with offensive and defensive innovation strategies in sectors with considerable technological opportunities have emphasized engineering design, and to a lesser extent industrial design. [...] Meanwhile, firms with less offensive strategies for innovation, in mature, medium or low technology sectors, have emphasized industrial, graphic and sometimes fashion design in product development and interior and packaging design in retailing (p. 99).

This way they have identified different design strategies, processes and activities to contribute to their business goals and strategies that are tailored for their individual business contexts.

Similarly, giving examples from various renowned companies and their use of design for tackling different business challenges, Cooper and Press (1995) try to demonstrate how design is linked to strategy and is utilized to achieve various strategic goals (Table 2.2). For example, a company that has set its strategic goal to

open to international markets can use graphic design and communication design to establish and communicate a global corporate identity; or a business that wants to enter a new, more cost conscious market can utilize industrial design with a particular focus on ease of manufacture, and minimization of parts and material use. In this way, design functions as an important resource in "strategy implementation" (Hertenstein & Platt, 1997, p. 10). Yet in this main role in the implementation of strategy, the linking of design with business strategies and the communication of strategic plans and goals to design managers and designers becomes especially critical.

Table 2.2 : Strategic role of design (Cooper & Press, 1995).

Challenge	Strategic goal	Role of Design	Examples
Small firm in consumer electronics market	Secure distinctive international niche	Provide niche through unique styling, identity and product innovation	Consumer electronics (B&O, Linn Psion)
Survival in a mature industry with keen price competition	Concentrate on added value markets of processes	Add value through fashion orientation	Textiles (Leeds Group, Issey Miyake)
Transnational manufacturer with diverse world markets	Coherent identity and appropriate exploitation of scale economies	Corporate identity and coordination of design resources to target global markets	Electronics (Philips)
Japanese companies in competitive western markets	Quickly develop products appropriate to diverse lifestyles	Integrate innovation process and humanisation of product	Electronics/motor vehicles (Canon, Ricoh, Sony, Toyota)
Service supplier in newly competitive market	Develop distinctive identity	Corporate identity and environmental design	Services (Prudential, Scottish, Power, Royal Mail)

2.8.2 Design in strategy formation

Although the widely practiced path is the utilization of design as a resource in the implementation of strategy, recent research identifies a second route. Design can also be a valuable resource in the formation of strategy by helping to define corporate objectives and providing ideas about business possibilities, new directions and opportunities that can inspire and shape strategy (Chung & Kim, 2011; Francis, 2002; Hertenstein & Platt, 1997). To clarify the role of design and designers in strategy formation, Francis (2002) explains that designers provide firms with input for strategic decision making, by "open[ing] doors of opportunity" and by "creating new ways to see the world:

Designers play three key roles as they open doors of opportunity. These roles can be in tension. Firstly, designers *extend* managers' notions of what is possible. Secondly they *substantiate* possibilities by making a glimmer of an idea into a proposal (for example by

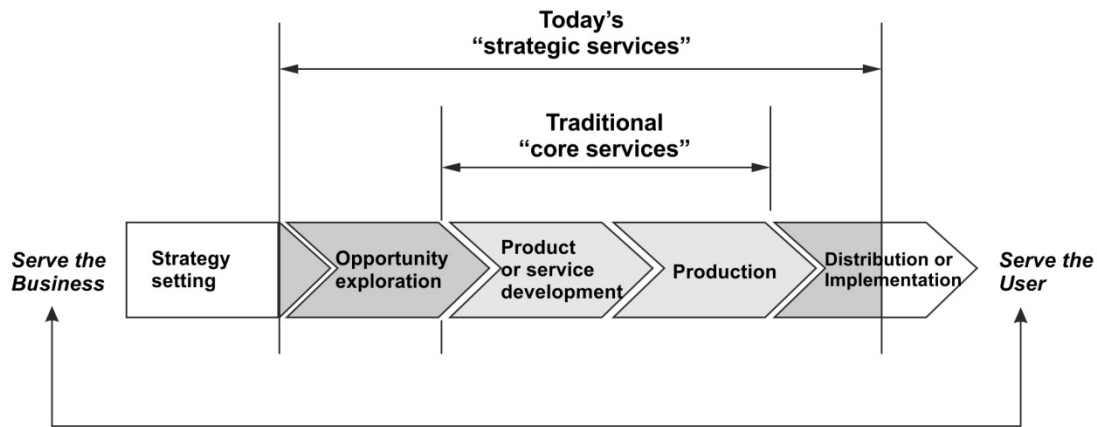
making a prototype). Lastly, they *fight* for their ideas, thereby introducing functional abrasion into management decision-making processes. (p. 65)

In their research, focusing on the course of integration between strategic planning and industrial design processes, Hertenstein and Platt (1997) observed that in some firms, the head of design was a major participant in the strategic planning process and influenced strategic direction by participating in strategy formation. Similarly, Chung and Kim (2011) point to two distinct roles for designers with respect to strategy: their *functional role* in strategy implementation and their *interactional role* in strategy formulation. The interactional role entails being the initiator of new product development, by providing new ideas, opportunities and new combinations of ideas; and being a participant in the formulation of new product strategy, by providing guidelines for product concepts (Chung & Kim, 2011).

Sanchez (2006) indicates that these recently more articulated roles for design in strategy formation, can also be observed in the practices of design consultancy firms, which have extended their traditional design services to cover "upstream strategic decision processes of client firms" (p. 10). Today, strategic services, such as brand strategy, technology strategy, innovation strategy, business design and organizational design can be observed among the services provided by design consultancy firms such as Ideo, Continuum or Frog Design (Continuum, 2015; Frog, 2015; Ideo, 2015). Frog Design even goes on to describe itself as "a global strategy and design firm" (Frog, 2015). Weiss (2002) confirms the increasing expansion in the services of design consultancies, to cover broader contexts and challenges, as well as "additional upstream and downstream activities that facilitate critical decision making associated with the earliest stages of new product and service development" (Weiss, 2002, p. 35). In Figure 2.7, Weiss (2002) clarifies this broadened view about core services provided by design consultancies and explains:

Whereas traditional core services offered by design consultancies and others focus on helping clients do things the right way in terms of design, engineering, and manufacturing, now they are being engaged for "strategic services" to help them choose to do the right things in the first place. (p. 35)

However, the role of design in strategy formation is not limited to new product or service strategies, but can be extended to cover wider business problems and contexts, as well as the overall strategy making process. These new roles for design are also becoming increasingly embraced by management and strategic management scholars under the concepts of *design thinking*, *design attitude* and *managing as designing*.



Extending core services to strengthen the connection between business needs and user needs.

Figure 2.7 : Expansion in the core services provided by design consultancies towards strategic services (Weiss, 2002).

2.8.3 Design thinking in strategy formation

The recently popularized concepts of *design thinking* (Brown, 2005; Liedtka, 2000; Liedtka & Ogilvie, 2011; Martin, 2009), *design attitude* (Bolland & Callopy, 2006) and *managing as designing* (Bolland & Callopy, 2004) - the last two being developed by management scholars - are informing on the potential of design approaches and methods to reframe business thinking processes and to contribute to solving broader business problems that are beyond the traditional boundaries of design. Among these concepts, *design thinking* in particular have become widely recognized within the management field (Brown 2009; Drew, 2009; Kimbell 2011; Martin 2009).

Although having roots in both the design and the management discourses, with clear differences in perspective and descriptions, it is inside the management discourse that *design thinking* is mostly elaborated and valued as an approach for design and design methods to contribute to strategic management processes (Johansson-Sköldberg et al., 2013). Inside the design discourse, the concept of *design thinking* or *designerly thinking* is rooted in academic theory and “refers to the academic construction of the professional designer’s practice (practical skills and competence) and theoretical reflections around how to interpret and characterize this non-verbal competence of the designers” (Johansson-Sköldberg et al., 2013, p. 123). Yet in the managerial discourse, *design thinking*, as well as the notions of *design attitude* and *managing as designing*, mainly suggest that the creative and divergent thinking methods used by designers can also be employed to think about business problems. Martin (2009) explains that as an alternative to traditional business thinking approaches which are linear, left-brain focused and found insufficient to tackle the complexity of certain problems, design thinking offers the

possibility to combine right brain and left brain cognitive processes. Therefore, the application of design thinking methods also by business managers and non-designers in dealing with challenges, such as strategy formulation (Golsby-Smith, 2007; Liedtka, 2000), organizational change and innovation, is proposed to offer a larger potential to generate unique, intelligent and innovative solutions in the context of handling complex problems.

Liedtka (2000) particularly focuses on design and design thinking as metaphors for thinking about business strategy and the process of strategy-making explaining that design thinking and strategic thinking have similar characteristics. She lists: "the attempt to make a science of planning", "loss of creativity", "excessive emphasis on numbers", "the drive for administrative efficiency" that standardizes "inputs and formats at the expense of substance" and "dominance of single techniques" among the problems of traditional approaches to strategy-making process, and advocates: "Design offers a different approach and would suggest processes that are more widely participative, more dialogue-based, issue-driven rather than calendar-driven, conflict-using rather than conflict-avoiding, all aimed at invention and learning, rather than control" (Liedtka, 2000, p. 28).

Golsby-Smith (2007) argues that strategy process is among the weakest processes in most organizations, which are usually much capable in operational management and protecting the status quo, rather than "for inventing and shaping new futures" (p. 22). Similarly, he supports that design thinking offers "a new approach to strategy that can unlock fresh energy and make it more innovative and less data driven" (Golsby-Smith, 2007, p. 22).

2.9 Summary

This chapter focused on understanding design inside an organizational context. But more importantly, it strived to understand design as a strategic resource, by tracing, reviewing and mapping out the various streams of literature that focused on diverse contributions of design to businesses. The analysis began with more physical and more directly recognizable roles and contributions of design inside an organization, such as in creating and adding value to products, services, environments, corporate and brand identities, to its less physical, more hard to discern, yet more strategic roles and contributions such as its contributions to business performance and competitiveness; its integrative roles in major organizational processes like NPD and innovation; its role in the creation and development of corporate culture and bringing about organizational change and strategic renewal. The section ended with a

consideration of design's specific functions and contributions with respect to strategy and strategic management processes. As can be seen, the literature is far-reaching and continually evolving, embracing both the more traditional and established roles for design, as well as its more recently recognized and emerging roles. Each stream complements one part of the total picture about how design can become a strategic resource for an organization and how it can be linked to different business objectives and strategies.

2.10 Synthesis: A Model for '*Contributions of Design inside an Organizational Context*'

Through this literature review, it was seen that although the literature is wide ranging, it lacks an integrative framework to bring together the extensive and interacting contributions and roles of design inside a business.

To facilitate a comprehensive understanding about the relationship between design, the organization and business strategy, the reviewed literature is synthesized into a model named *Contributions of Design inside an Organizational Context*, which is presented in Figure 2.8.

As a theoretical contribution, this model can be utilized to facilitate a thorough understanding of the breadth of design's roles inside an organization, as well as forming the basis for empirical research aimed at exploring how design is utilized by businesses in various ways.

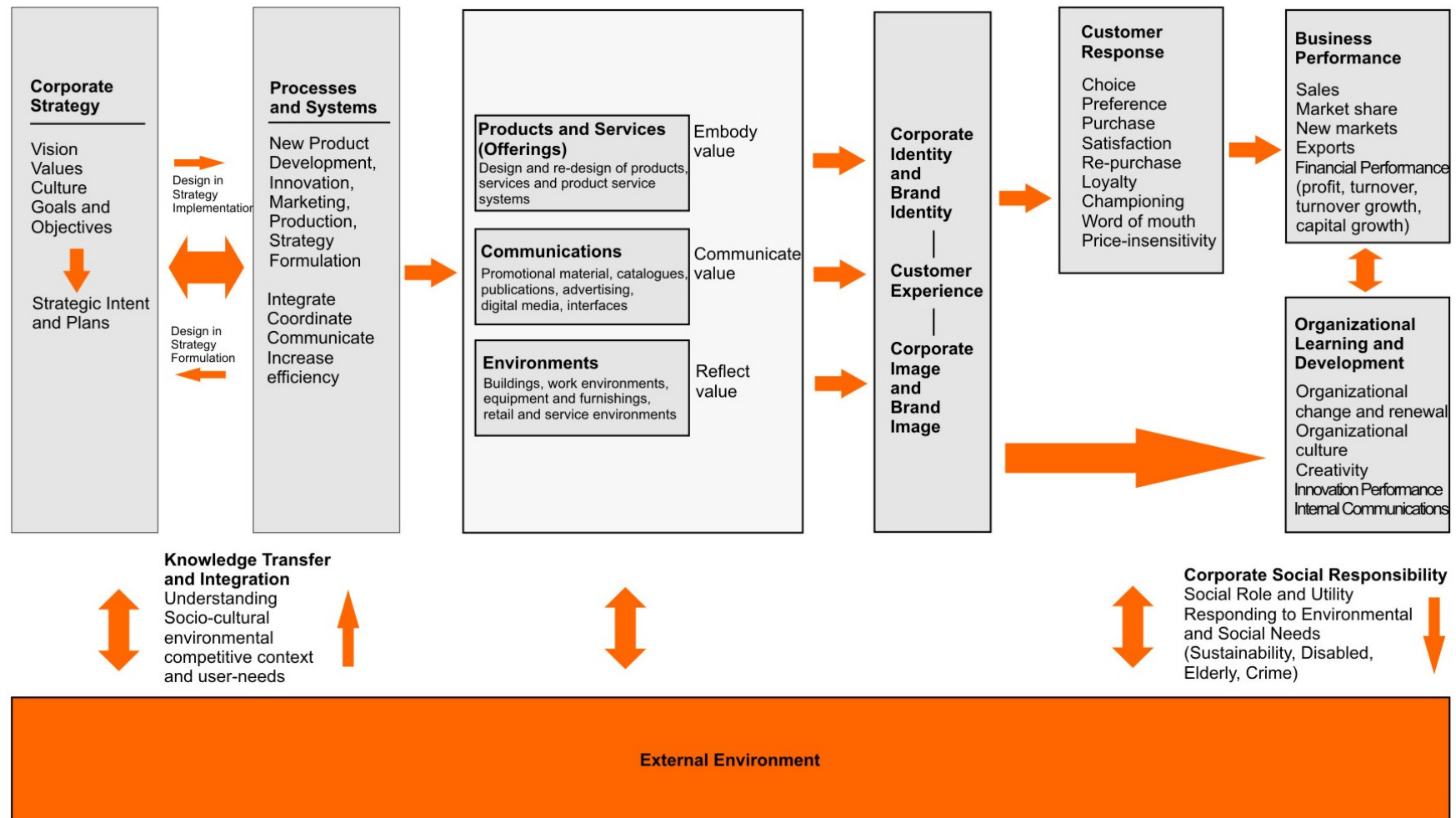


Figure 2.8 : Contributions of Design inside an Organizational Context



3. STRATEGY AND STRATEGIC MANAGEMENT

Strategic management field focuses on organizational choices that give direction to "the evolution of the business enterprise" (Augier & Teece, 2008, p. 1188). Having its roots in literature on warfare and military policies, the field began to be established in the 1960s, and developed significantly after the 1980s, looking for answers to the major question of: how to make the organization survive and prosper in the face of continuous changes and uncertainties in markets, competition and the wider macro-environment. The literature initially focused on strategy making as analyzing industry conditions and competitive forces that characterize it, with the objective to identify and target a favorable position inside the market. But later, it started to center on the identification and development of unique and distinctive resources, competencies and capabilities to form the basis for an organization's strategy.

This section aims to review the literature on strategy and strategic management in order to understand different perspectives on strategy making and to explore how design and design management capabilities are linked to strategy and strategic management practices taking place inside organizations. This change of perspective, from looking at design management through the side of design, towards looking at design management through the strategic management standpoint is essential to explore how design and design management capabilities can better be linked to strategic management concepts and processes.

After an examination of what is meant by strategy and a fast review of different schools of thought that emerged inside the strategic management field, the chapter focuses on two major perspectives that dominate the literature, that is, the market based view (MBV) and the resource based view (RBV). Later, the chapter continues with an exploration of important concepts and perspectives that emerged out of the RBV, such as dynamic capabilities, organizational learning, knowledge creation and the knowledge based perspective. Finally, the chapter ends with a synthesis section, which analyzes design and design management capabilities and their roles in the strategic management of organizations, through the lens of the MBV and the RBV; also integrating the various contributions of design identified in chapter 2 inside this synthesis.

3.1 Strategy

In essence, strategy is concerned with the "long term prosperity" of the organization (Pearson, 1990, p. 21). It focuses on identifying and securing a long term competitive advantage for the business (Cooper & Press, 1995) that will support the profitability and sustainability of the enterprise.

Basically, strategy aims to answer major questions about the ends an organization seeks and what it should do to attain these ends. Through this conception, strategy gives a sense of "direction" so that the whole organization can be guided towards a common course; it "focuses effort" seeking to create coordination between different functions and parts; it "defines the organization" presenting meaning and a major comprehension about its activities; and it "provides consistency" in order to offer structure, order and simplification, which are all necessary to facilitate action (Mintzberg et al., 1998, pp. 16-18). Although there is greater clarity and agreement about its main purposes, definitions and views regarding strategy and strategic management are many, with various schools of thought bringing different perspectives as to what strategy is.

One of the foundational figures in strategic management literature, Alfred D. Chandler (1962) defines strategy as: "the determination of the basic long-term goals of an enterprise, and the adoption of courses of action and the allocation of resources necessary for carrying out these goals" (p. 13). He indicates that strategy is necessary to respond to "opportunities and needs" (p. 15) generated by the changes taking place in the environment, which can be about the changes in population, national income, technology, or markets. Kenneth Andrews, represents a similar perspective, but provides a more comprehensive definition for strategy as:

Corporate strategy is the pattern of decisions in a company that determines and reveals its objectives, purposes or goals, produces the principal policies and plans for achieving those goals, and defines the range of business the company is to pursue, the kind of economic and human organization it is or intends to be, and the nature of the economic and non-economic contribution it intends to make to its shareholders, employees, customers, and communities. (Andrews, 1980, pp. 18-19)

His definition presents strategy from different points of view, as a pattern of decisions, a plan for reaching goals, as well as a vision, or a perspective towards the future.

Both of these scholars, Alfred D. Chandler and Kenneth Andrews, represent the earlier models of strategy, what Mintzberg et al. (1998) refer to as *the design school*. Up to today, other schools of thought advanced and refined the concept of strategy

with significant contributions. However, the definitions from this early school have been presented here to explain the essence of strategy particularly because, they embody the basics of the strategy concept, as they have been the most influential school in strategic management, continuing to establish the foundations of strategy courses and the strategic management practice all around the world (Mintzberg et al., 1998). This school has also established a core notion in strategy: that strategy concerns finding an alignment between the internal capabilities of the organization and external possibilities.

In similar lines, Chaffee (1985) expresses that while there is no consensus in literature about its definition, the basic premise in thinking about strategy is the organization's inseparability from its environment, and notes that strategy is used by the organization "to deal with changing environments" (p. 89). Additionally, he points to the agreement in literature on the existence of both an analytical and a conceptual dimension in the strategy making process, in addition to a consent on the distinction between two levels of strategy as:

- *corporate strategy*, which is concerned with the businesses to be in (therefore being applicable to corporations with multi-market activities) and,
- *business strategy*, which deals with how to compete in each business.

Regarding the contents of strategy, Augier and Teece (2008) express that strategic choices consist of:

- the selection of products and services to offer to customers,
- the market segments to address,
- the business models to employ,
- the appropriate level of diversification,
- and organizational structures, policies and practices needed to coordinate activities (p. 1188).

Another important notion that is recurrent in strategic management literature is the concept of uniqueness, which indicates that through their strategies, organizations should strive to set themselves apart from the crowd, by choosing to carry out either different sets of activities or performing their activities in different ways. Andrews (1980) indicates that the way organizational resources, distinctive competence and values are combined through strategy should be unique to each organization. Similarly, Porter (1996) underlines that business strategy rests on unique activities:

"Competitive strategy is about being different. It means deliberately choosing a different set of activities to deliver a unique mix of value" (Porter, 1996, p. 64). Both earlier and more recent views on strategic management likewise put emphasis on unique, firm-specific resources and capabilities and their continual development as the main source of value and competitive advantage, as well as "the source of the uniqueness of each individual firm" (Penrose, 1959, p. 25).

Pointing to the immensity of literature and diverse perspectives in strategic management, Mintzberg et al. (1998) conclude that strategy requires at least 5 particular definitions, or rather perspectives, calling these the 5 P's of strategy:

- when looking into the future, strategy is an intended *plan* - "a direction, a guide or a course of action into the future, a path to get from here to there" (p. 9);
- when looking at past and what actually happened, strategy is a *pattern*, revealing the consistency in behavior over time;
- when looking from the standpoint of placing products at specific markets, strategy is a *position*;
- when trying to provide an overall vision for the organization and its approach to business, strategy is a *perspective*;
- and when it is used as a specific tactic or approach to rise above a competitor, strategy is a *ploy*.

3.2 A Fast Track Through Strategic Management Literature and its Major Schools of Thought

Since its establishment in the 1960s, the field of strategic management has evolved greatly through the contributions of scholars with differing perspectives on strategy. Reviewing nearly 2000 items in the strategic management literature, Mintzberg et al. (1998) have marked out 10 distinct schools of thought, assembling them into 3 major groups. They characterize the first group as being "prescriptive in nature", which means that they focus on providing a rational approach towards how strategies should be made in organizations. They are more rigid, rational and formal in their approach, viewing strategy formation as a deliberate and controlled process, consisting of distinct phases of strategy formulation, implementation and control. Basically, the strategy process begins with an analysis of the external environment, internal capabilities and corporate values; continues with setting goals and

objectives; and then making rational decisions about actions and plans that will move the organization towards these goals. Although this first group is criticized for dealing with the strategy process in a prescriptive (Mintzberg et al., 1998) and linear (Chaffee, 1985) manner, and not giving much room for incremental development, organizational learning and realities such as emergent strategies, the 3 schools under this group have dominated literature and practice, as they have provided clear models and frameworks to approach strategy making.

The first school in this group, *the design school*, outlines the process of strategy making as a search for attaining a fit between internal capabilities of the enterprise and external possibilities. Strategy making starts with an appraisal of external possibilities, namely, opportunities and threats; and internal capabilities, namely, strengths and weaknesses of the organization. Based on this analysis, comes the conception and evaluation of alternative strategies. After deciding on the best alternative, the strategy implementation process begins.

The second school, *planning school*, developed hand in hand with *the design school*. It took the basic model of the design school, and turned it into a highly formal planning process, through "the quantification of goals as a means of control" (Mintzberg et al., 1998, p. 51); and the development of extensive procedures, quantitative techniques, and checklists to facilitate evaluation, choice, and the planning of action programs, together with schedules, programmes and budgets.

The third school in this group, *the positioning school*, which has been initiated by Porter (1980), with his influential book *Competitive Strategy*, has largely built on the basic models and premises of the first two schools (Mintzberg et al., 1998). But more specifically, this school has promoted a clearly outside-in approach to strategy making (Priem & Butler, 2001), basing the strategy process mostly on an analysis of the conditions in the outside environment and then setting the company's position as an answer to this environmental context.

According to Mintzberg et al. (1998), the second group of schools are "descriptive" in nature, focusing less on suggesting how strategies should be made, and more on understanding and describing the actual strategy making process. This group points out that the highly analytical, rational and sequential treatments provided by the prescriptive schools does not reflect the reality taking place inside organizations, such as the existence of intuition and creativity, adaptation and learning in the strategy making processes, which have no room in the prescriptive approaches to strategy. Therefore these schools strive to incorporate different perspectives such

as behavioral, cognitive, cultural, and organizational points of view, to the consideration of the strategy process. And mostly, they argue for an inside-out perspective, emphasizing internal factors such as capabilities, resources, vision and culture of the organization, over the conditions of the external environment, as the basis for strategy making. In this group, *the entrepreneurship school* focuses on the creation of a vision by an entrepreneurial leader and highlights leadership and strategic perspective. *The cognitive school* elaborates on the complexity of the strategy making process; the cognitive processes in a strategist's mind and the limitations of mental structures. *The learning school* treats strategy making as an emergent process based on organizational learning, where people and organizations learn and develop new capabilities as they face new problems and contexts and adapt to change through incremental steps. *The power school* points out the dimensions of power and politics in strategy making and views strategy formulation as a process of influence and negotiation among different individuals and interest groups. *The cultural school* emphasizes the significance of organizational culture and takes it as the basis for all tangible and intangible manifestations of an organization as well as its strategy. Whereas, *the environmental school* argues that the environment defines and limits strategic choice.

Finally, the third group consisting of a single school, *the configuration school*, which integrates the views from the previous schools and treats strategy as a process of transformation and change (Mintzberg et al., 1998).

Despite the multiplicity of distinct schools and perspectives, it can be observed that the literature in strategic management revolves around two main groups of thought, which emphasize intrinsically different points of view. They are denoted as the Market Based View (MBV), also referred to as the outside-in view (Caves & Porter, 1977; Porter, 1980, 1985) and the Resource Based View (RBV), or the inside-out view (Barney, 1991; Penrose, 1959; Peteraf, 1993; Wernerfelt, 1984). These two theoretical perspectives, provide alternative approaches to explaining the source of competitive advantage - and therefore strategy making - for firms. MBV mainly highlights outside conditions, namely, the industry structure, barriers to competition arising due to the structure of the industry, and getting hold of appropriate product market positions, as the basis of competitive advantage. On the other hand, RBV takes an inward looking stance, and concentrates on firm's resources, capabilities and core competencies to explain firm profitability and competitiveness. While MBV has dominated the literature and practice of strategic management for a long time

and is still relevant today, since the 1990s, RBV has gained increasing popularity and diffused rapidly throughout the strategic management literature (Mahoney & Pandian, 1992; Priem & Butler, 2001). In the following sections, these two approaches will be further explored in order to gain a deeper understanding about their stances and their specific implications for design and design management.

3.3 Market Based View

In the earlier theoretical works in strategic management, scholars have placed an equivalent emphasis on outside conditions of the environment (opportunities and threats) and internal capabilities of the organization (strengths and weaknesses) as significant sources of competitive advantage (Andrews, 1980; Ansoff, 1965). However, with Porter (1980) and his treatment of strategy based greatly on industrial organization economics, the outside conditions defined by the industry structure and competitors, gained dominance over internal assets and capabilities, as the basis of a firm's competitiveness (Priem & Butler, 2001). In this perspective, the industry structure is the principal factor "determining the competitive rules of the game as well as the strategies potentially available to the firm" (Porter, 1980, p. 3). Therefore, the fundamental sources for value and competitiveness lie, to a great extent, on conditions external to the firm, leading to the designation of this approach as the *market based view* (MBV) or the *outside-in perspective*.

According to Porter (1980), the competitive environment in an industry is defined by 5 major forces that altogether determine the intensity of competition and profitability potential of the industry, and therefore making some industries more profitable than others. As indicated in Figure 3.1, these 5 forces are: the threat of new entrants, the threat of substitute products/services, the bargaining power of suppliers, the bargaining power of buyers and rivalry among existing firms. Industries with high barriers to entry for new competitors are potentially more advantageous, since the threat of new entrants are less and firms in such industries are expected to face less competition compared to industries with low barriers to entry. Again industries, where the substitutability of products and services are lower, are anticipated to provide more favorable conditions. Similarly, having higher bargaining power with respect to suppliers and customers, as well as a strong market position compared to rival firms are other main sources of competitive advantage for a firm. However, none of these forces are enough to determine competitiveness on their own, but jointly create the conditions for competitiveness. Additionally, these forces are dynamic and change as the industry evolves.

Porter (1980, 1985) suggests a framework of analytical techniques that assist in examining industry structure, competitors' and a firm's own place in the industry and to transform this understanding into a competitive strategy for the business. In this sense he puts forward structural analysis or 5-forces analysis as the "fundamental underpinning" for formulating strategy. He asserts that only after an understanding about forces affecting competition and their specific causes, can the firm determine its competitive strategy. Therefore, strategy formulation is based on a detailed analysis of these 5 forces that determine industry conditions in order to find a profitable position in the industry; and then determining courses of action either to influence or defend against these 5 major forces, with the objective of attaining the firm's targeted position.

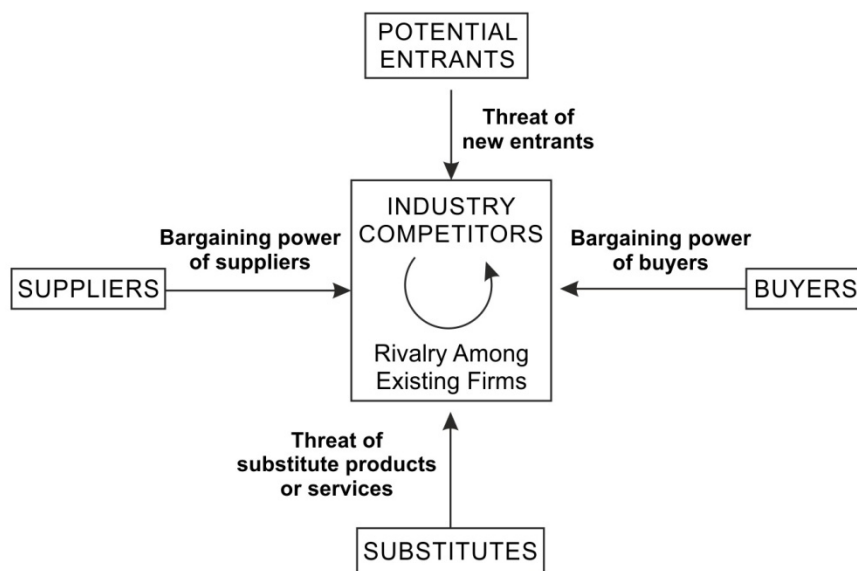


Figure 3.1 : Forces driving industry competition or the 5 forces (Porter, 1980).

Additionally, Porter (1980, 1985) argues that in the broadest sense, there are 3 *generic strategies* (Figure 3.2) that firms can use separately or in combination to outperform their competitors. Although firms can transform these generic strategies into more specific strategies to suit their particular conditions, in the broadest sense these are:

- overall cost leadership,
- differentiation,
- and focus.

Cost leadership focuses on having the lowest cost position in the industry. This strategy is based on the reduction of all costs through functional policies such as,

economies of scale, facilities focused on efficiency, cost control & minimization, design for manufacture, experience curve effects, etc.; and through the attainment of advantages in production inputs, such as favorable access to raw materials, energy and labor (Porter, 1980, 1985). This position defends the firm against bargaining power of powerful buyers as well as suppliers, and generally puts the firm in a more advantageous position compared to its competitors in terms of substitute products and services.

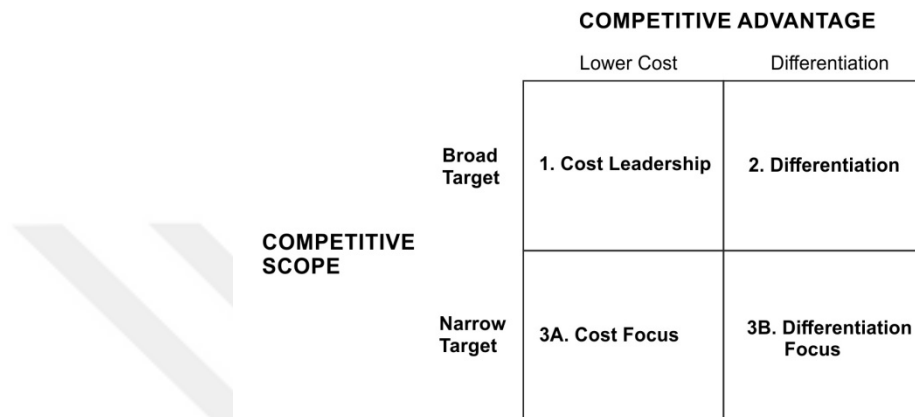


Figure 3.2 : Three generic strategies (Porter, 1985).

Differentiation strategy focuses on making the offer perceived as unique by the buyers. This can be based on different factors such as, design, brand image, technology, customer service, dealer networks, or a combination of these (Porter, 1980, 1985). Although costs cannot be disregarded in this strategy, the primary focus is on achieving uniqueness through differentiation. Differentiation strategy can provide above-average returns through the creation of customer loyalty, resulting in lower price-sensitivity. It decreases the threat of substitutes and provides protective barriers against a competitor by making it harder for the competitors to come up with an alternative that can overcome the unique value achieved through differentiation.

On the other hand, focus strategy involves concentrating on a particular customer group or segment, which can be defined by a geographic market, demographic features, income level, etc. Whereas cost leadership and differentiation are directed towards the total market (broad competitive scope), focus strategy targets a specific group (narrow competitive scope). The firm can either try to provide a more effective offer that is better at meeting the needs of this particular group, leading to a focused differentiation strategy; or it can concentrate on achieving lower costs for this particular group, leading to a cost focus strategy; or it can do both.

Each of the generic strategies necessitates different resources and skills, different organizational arrangements and functional activities, even different types of leadership and corporate culture. Therefore, a firm pursuing a certain generic strategy must focus on aligning its internal structure and activities to the requirements entailed by the overall objective of the strategy (Collis & Montgomery, 1997; Porter, 1980).

Another important framework suggested by Porter (1985) is the *value chain*. Value chain (Figure 3.3) conceptualizes the firm through the set of activities it performs in order to deliver value. Porter (1985) explains that "A firm gains competitive advantage by performing these strategically important activities more cheaply or better than its competitors" (p. 34). Therefore the value chain helps to identify those activities that are core to the creation of competitive advantage and to diagnose significant relationships between them. By aiding the firm in the analysis of its functional areas, major activities and how they interact, the value chain analysis facilitates the identification of present and potential sources for generating competitive advantage.

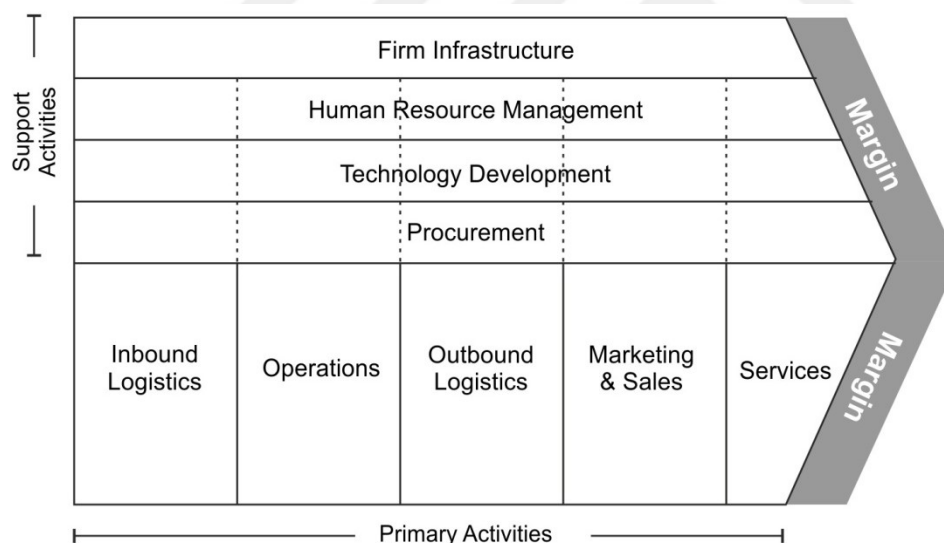


Figure 3.3 : Value chain (Porter, 1985).

3.4 Resource Based View (RBV)

In contrast to Porter's (1980, 1985) stance on external, industry based sources and relative product positioning as the basis of strategy, the resource based view suggests to change the perspective of strategic management from the product-market side to the resource side of the firm. Building on foundational works in strategic management - such as Selznick's (1957) concept of *distinctive*

competence, Penrose's (1959) discussion of the firm as a collection of productive *resources*, Andrew's (1971) emphasis on *strengths and weaknesses* and Chandler's (1962) stress on *capabilities* and *core of competence* - scholars of the RBV propose to focus back on firm's unique and distinctive resources and capabilities to explain competitive advantage, firm profitability and value (Barney, 1991; Peteraf, 1993; Wernerfelt, 1984). Wernerfelt's (1984) article titled *A Resource-Based View of the Firm* is often cited as the initiator of this perspective change (Priem & Butler, 2001).

3.4.1 Resources

Wernerfelt (1984) suggests that assessing firms in terms of their resources opens up different insights than the traditional product market perspective. He goes on to offer a treatment of strategy based on the identification of high profit yielding resources and "striking a balance between the exploitation of existing resources and the development of new ones" (p. 172).

Resources consist of all tangible and intangible assets, capabilities, organizational processes, firm attributes, information and knowledge that are either possessed or controlled by the firm, and which can be used in the implementation of the firm's strategies (Barney, 1991; Wernerfelt, 1984). Machinery, human resources, technological know-how, brand names, efficient procedures, trade contacts, patents, licenses and capital constitute some examples of a firm's resources (Amit & Schoemaker, 1993; Wernerfelt, 1984). In contrast to the MBV, inside the RBV, the differences in firm performance and competitiveness are explained by the heterogeneity of resources that originate from imperfections in the resource market, and managerial decisions about which resources to acquire, exploit and develop (Amit & Schoemaker, 1993; Helfat & Peteraf, 2003).

However while a firm has many resources, only some are "strategically relevant", implying that only some "can be a source of sustained competitive advantage for a firm" (Barney, 1991, p. 102). Therefore, Barney (1991) introduced a framework specifying characteristics of such resources that can present a lasting competitive advantage for the firm. According to him, resources that are *valuable* - "in the sense that it exploit opportunities and/or neutralizes threats in a firm's environment" (p. 105) - *rare*, *imperfectly imitable* (or *inimitable*) and *non-substitutable* hold a potential for generating sustainable competitive advantage (Barney, 1991). While his VRIN (valuable, rare, inimitable, non-substitutable) framework has largely been adopted as the basis for identifying strategic resources (Priem & Butler, 2001), other scholars extended on this framework, pointing to some additional characteristics for isolating

strategic resources, such as durability, imperfect transparency, imperfect transferability, and imperfect replicability (Grant, 1991). Additionally, when evaluated from this angle, tangible resources are generally less rare, and much easier to imitate, acquire or substitute. This is the major reason why the RBV centers on intangible resources, as promising higher strategic potential than tangible resources for the generation of sustainable competitive advantages for the firm (Connor, 2002).

Expanding on this emergent literature pointing to the strategic value of these unique and mostly intangible resources as the major source of long-term survival and success, other scholars focused specifically on firms' unique *capabilities* and *core competencies* as the basis for creating sustainable competitive advantages (Amit & Schoemaker, 1993; Grant, 1991, 1996; Prahalad & Hamel, 1990).

3.4.2 Capabilities and core competencies

Amit and Shoemaker (1993) point out that in order to convert a firm's resources into value embodied in products or services, a broad range of organizational assets and mechanisms are utilized, such as technology, information systems, managerial systems, to name a few. In this respect, they continue by making a clear distinction between resources and capabilities, defining capabilities as a firm's capacity to deploy its various resources through its organizational processes. Therefore, while earlier, scholars of the RBV (Barney, 1991; Wernerfelt, 1984) have included capabilities inside their characterization of resources, for Amit and Schoemaker (1993) resources and capabilities are clearly different, but interdependent assets for the firm. Amit and Shoemaker (1993) explain that capabilities are:

"information-based, tangible or intangible processes that are firm-specific and are developed over time through complex interactions among the firm's *Resources*. [...] *Capabilities* are often developed in functional areas (e.g., brand management in marketing) or by combining physical, human, and technological *Resources* at the corporate level. As a result, firms may build such corporate *Capabilities* as highly reliable service, repeated process or product innovations, manufacturing flexibility, responsiveness to market trends, and short product development cycles. (p. 35)

Another important aspect that makes capabilities distinct from resources is their dependence on a firm's human capital in developing, carrying and exchanging information, to enable their cultivation over time (Amit & Shoemaker, 1993). In a similar manner, Grant (1991) expresses that capabilities are developed by the application of resources through complex processes of coordination between people and other resources. He emphasizes two critical aspects in the development of

capabilities, the *learning* dimension (learning through repetition) and the crystallization of this learning through time in *organizational routines* (Nelson & Winter, 1982), concluding that "A capability is in essence a routine, or a number of interacting routines" (Grant, 1991, p. 122). Therefore, the main source of competitive advantage derives mostly from capabilities, which are embedded in organizational routines, practices and procedures, while a firm's resources form the basis for the development of capabilities (Teece et al., 1997).

Similar to resources, not all, but only some capabilities can provide a strategic potential for the firm. In this sense, Amit and Shoemaker (1993) adopt Barney's (1991) approach and state that "the set of difficult to trade and imitate, scarce and appropriable resources and capabilities" constitute a firm's *strategic assets* (p. 36). Consequently in the RBV, the challenge for strategy is identifying a set of *strategic assets* - these sets of rare, difficult to imitate, and unique *resources* and *capabilities* - as the basis for establishing a firm's sustainable competitive advantage.

Particularly to account for these unique capabilities that can be considered as a strategic asset for the firm, Prahalad and Hamel (1990) suggest a different notion which they refer to as *core competence*. Similar to Grant's (1991) interpretation regarding the development of capabilities over time through a learning process that involves repetition, Prahalad and Hamel (1990) also conceptualize *core competence* as a collective learning process: "Core competencies are the collective learning in the organization, especially how to coordinate diverse production skills and integrate multiple streams of technologies" (p. 82), such as Sony's expertise in the miniaturization of technology and Philips's expertise in optical media.

According to them, core competencies result from the combination of different skill sets that make it possible for the firm to generate valuable products and services. Although the definition gives weight to the combination of skills related to technology and production, Prahalad and Hamel (1990) do not restrict core competencies to these areas, as they note that core competence also involves combination of skills with respect to the organization of work, communication, working across boundaries and delivery of value. Thus, core competencies can be related to any phase in the overall process of value creation, from the acquisition of inputs to the delivery of value. Like 3M expanding its competence in adhesives to wide ranging business areas, from post it notes to coated abrasives, core competencies provide opportunities for new business development and like the root system of a tree, they connect and nurture the entire corporation (Prahalad & Hamel, 1990). 3 properties with which to identify core competencies of a firm are listed as:

- providing potential for access to different markets;
- making a significant contribution to customer's perceived benefits;
- and being difficult to imitate (Prahalad & Hamel, 1990).

Although a firm can have many capabilities, it can only have a few core competencies (Prahalad & Hamel, 1990; Tampoe, 1994). Additionally, core competencies are more complex and specialized than capabilities, as they usually involve their integration. For example, Casio must integrate its skills and capabilities in microprocessor design, miniaturization, ultrathin precision casting and material science, in coming up with its digital watches, as well as its miniature calculators (Prahalad & Hamel, 1990). This level of complexity and uniqueness in their configuration make core competencies difficult to develop but for the same reason also difficult to imitate.

Regarding the difference between *capabilities* and *competencies*, Prahalad and Hamel (1992) indicate that they are using the terms interchangeably, and the critical point in their terminology is what makes the skills or capabilities *core*. Through a concentration on the concept of *core competence*, they urge managers to view their firm as a portfolio of resources and capabilities that can be united in different ways to generate unique value, and not as a portfolio of products or businesses.

Together with the RBV of the 1990s, Stalk et al. (1992) point to a fundamental shift in the logic of competition from a product based competition to a "capabilities-based competition" (p. 57), shifting the context of strategy from "where a company chose to compete" to "how it chose to compete" (p. 62). This logic necessitates to view strategy's major building blocks as business processes and capabilities, not as products, or product-market positions (Stalk et al., 1992). Competitive advantage is constructed through transforming key processes into strategic capabilities that tie the entire organization, in order to consistently craft a superior value to the customers.

3.5 Dynamic Capabilities Perspective

Inside rapidly changing environments, the possession of certain specialized skills become more critical for the firm. These can be broadly described as skills related to the rapid identification of new opportunities and organizing effectively for a timely responsiveness (Teece et al., 1997). In order to signify these specialized capabilities Teece et al. (1997) introduce the concept of *dynamic capabilities*, which indicate a

firm's ability to attain new and innovative forms of competitive advantage in times of rapid change and instability. The authors explain:

The term 'dynamic' refers to the capacity to renew competences so as to achieve congruence with the changing business environment; certain innovative responses are required when time-to-market and timing are critical, the rate of technological change is rapid, and the nature of future competition and markets difficult to determine. The term 'capabilities' emphasizes the key role of strategic management in appropriately adapting, integrating, and reconfiguring internal and external organizational skills, resources, and functional competences to match the requirements of a changing environment. (p. 515)

While Teece et al. (1997) define dynamic capabilities as "the firm's ability to integrate, build, and reconfigure internal and external competences to address rapidly changing environments" (p.516), another, more recent definition for dynamic capabilities by Helfat et al. (2007) is given as "the capacity of an organization to purposefully extend, create, or modify its resource base" (p. 1). Helfat & Peteraf (2003) clarify that dynamic capabilities do not entail operational capabilities, which are utilized in the production of goods and services; instead they have an impact on operational capabilities, with the purpose of building, integrating and reconfiguring them. Therefore, dynamic capabilities are exclusively concerned with the change and transformation of operational capabilities.

Augier and Teece (2009) group dynamic capabilities into three as:

- the capability to sense opportunities,
- the capacity to seize opportunities,
- the capacity to manage threats through the combination, recombination, and reconfiguring of assets inside and outside of the firm's boundaries.

According to Teece et al. (1997), three categories of factors are central to the creation of dynamic capabilities: processes, positions and paths. By processes they refer to organizational and managerial processes that have three roles: "coordination/integration (a static concept); learning (a dynamic concept); and reconfiguration (a transformational concept)" (p. 518). By positions they denote all internal and external assets possessed by the firm such as technology, intellectual property, customer base, supplier networks; and by paths, they indicate the firm's evolutionary path and alternative paths available to it. Dynamic capabilities rest majorly on organizational processes, but they are greatly shaped by the firm's positions and path dependencies.

The dynamic capabilities concept is based on the RBV, and builds on RBV's stance on firm-specific and distinctive competences as the basis for establishing sustainable competitive advantage. However, it attends to a critical issue that is not handled in the RBV, which is the need for renewing, reconfiguring and modifying existing competencies in order to tackle with changing environments and future needs. In the dynamic capabilities perspective, profits are acquired from strategic assets - that are valuable, rare, inimitable and non-substitutable (Barney, 1991) - as well as "the firm's ability to reconfigure and transform" (Teece et al., 1997, p. 524). Therefore dynamic capabilities framework is suggested as "a foundation for understanding the processes of opportunity sensing and seizing, as well as the processes of strategic renewal" (Augier & Teece, 2009, p. 410). which are extremely critical capabilities in the context of rapid change that characterize current market environments.

3.6 Organizational Learning and the Learning Organization

As have been reviewed in the previous sections, in all major notions of the RBV, like *distinctive competencies*, *capabilities*, *core competencies*, *dynamic capabilities*, one can observe a consistent theme, which emphasizes that these strategic assets are built over time through organizational learning processes that are eventually integrated into the organizational memory in the form of organizational routines (Nelson & Winter, 1982). This is why, in the RBV, scholars refer to organizational learning theory for explaining the development of firm specific capabilities and core competencies (Crossan & Berdrow, 2003).

Organizational learning is defined as "the process of change in individual and shared thought and action, which is affected by and embedded in the institutions of the organization" (Vera & Crossan, 2005, p. 123). Organizational learning takes place as individual and group learning is institutionalized, which means that the knowledge becomes embedded in organizational routines, systems, structures, culture and the strategy of the organization (Crossan et al., 1999; March, 1991; Nelson & Winter, 1982). Vera and Crossan (2005) describe the organizational learning system as the continually evolving knowledge reserve that is stored in individuals, groups, and the organization. Besides being the means by which firm-specific, valuable and difficult to imitate capabilities are developed, organizational learning is also directly linked to strategy; as Vera and Crossan (2005) note, organizational learning "constitutes the fundamental infrastructure that supports a

firm's strategy formulation and implementation processes" (Vera & Crossan, 2005, p. 124).

As can be observed from these depictions, organizational learning involves a process of change and evolution in knowledge stocks, in actions and in organizational routines. It is through this integral necessity of learning in order to adapt to change that it has also been related to the processes of organizational change and renewal (Crossan et al., 1999; Vera & Crossan, 2005) and proposed as the underlying mechanism through which organizations adapt to changing environments (Cyert & March, 1963).

In the 1990s, parallel to the emerging literature on the RBV of the firm and its emphasis on organizational learning for the development of core competencies and dynamic capabilities, the concept of *the learning organization* was introduced by Senge (1990). He pointed to the vital need for understanding how organizational learning takes place and how to accelerate this learning, to be able to explore emerging opportunities and create new sources of growth in the face of increasing pace of change.

Senge (1990) conceptualizes a *learning organization* as "a place where people continually expand their capacity to create the results they truly desire, where new and expansive patterns of thinking are nurtured, where collective aspiration is set free and where people are continually learning how to learn together" (p. 1). He presents *creative tension* - the gap between where we want to be (the vision) and where we are (reality) - as the integrative principle for leading renewal and growth, for motivating new ways of looking at the world, and for managing change through continual learning.

While literature on organizational learning is descriptive in nature, trying to understand and explain how organizations learn; the learning organization concept proposed by Senge (1990) is prescriptive, providing answers to the vital question of how organizations should learn (Vera & Crossan, 2005). However the fundamental point in both streams of literature is that continual organizational learning is central to the development of unique capabilities and to the transformation and reconfiguration of existing ones in order to exploit emerging opportunities.

3.7 Learning as Knowledge Creation and The Knowledge Creating Company

Organizational learning brings with itself the concept of knowledge, that is the content of learning. Vera and Crossan (2005) express the inseparability and

interdependence of these notions stating: "Learning and knowledge are intertwined in an iterative, mutually reinforcing process: While learning (the process) produces new knowledge (the content), knowledge impacts future learning" (Vera & Crossan, 2005, p. 131).

Knowledge has long been recognized in the RBV, as an important resource that is a key input to the process of capability development, as well as to the reconfiguration and renewal of these capabilities. This recognition also went hand in hand with the increasing acknowledgement that we are witnessing a shift from industrial society towards a "knowledge society" (Drucker, 1994). Therefore together with Nonaka and Takeuchi's (1995) highly influential book named *The Knowledge Creating Company*, the focus turned to the concept of *knowledge creation*. The concept was directly related to organizational learning and value creation processes of organizations, since the authors defined organizational knowledge creation as "the capability of a company as a whole to create new knowledge, disseminate it throughout the organization, and embody it in products, services and systems" (p. 3).

Thus, taking their cue from the Japanese approach to knowledge and knowledge creation within organizational contexts, Nonaka and Takeuchi (1995) reframed organizational learning as a knowledge creation process. They argued that organizations should be viewed from the perspective of creating information and knowledge, instead of processing them to solve problems or make decisions. In this context, they also drew attention to the importance of tacit knowledge. The distinction between tacit and explicit knowledge was already established by Polanyi (1966). Indicating that people can know more than they can explicitly tell, Polanyi (1966) had distinguished tacit knowledge as the implicit knowledge held within the individual. Building on Polanyi (1966), Nonaka and Takeuchi (1995) explain that "Tacit knowledge is personal, context-specific, and therefore hard to formalize and communicate. Explicit or 'codified' knowledge, on the other hand refers to knowledge that is transmittable in formal, systematic language" (p. 59). Although these two dimensions are both valuable, the western management systems place weight on explicit knowledge, ignoring the immense value of the tacit dimension and its role in the knowledge creation process. Additionally, "tacit knowledge is deeply rooted in action, commitment, and involvement in a specific context" (Nonaka, 1994, p. 16); therefore it is very crucial that tacit knowledge created through individual experience is converted into explicit knowledge and incorporated into new products, processes and technologies. Accordingly, Nonaka (1994) and Nonaka and Takeuchi (1995) conceptualize organizational knowledge creation as a continuous dialogue

and conversion between tacit and explicit knowledge, which they illustrate in the form of a knowledge spiral (Figure 3.4). They explain that knowledge is initially created by individuals and then becomes organizational knowledge through four modes of knowledge conversion, which involve 4 types of interaction between tacit and explicit knowledge:

1. Socialization (From tacit to tacit): The conversion of tacit knowledge through interaction between individuals in forms of observation, imitation, practice and shared experience.
2. Externalization (From tacit to explicit): The conversion of tacit knowledge to explicit knowledge through the use of metaphors, analogies, pictures, experiences.
3. Combination (From explicit to explicit): The conversion of explicit knowledge to explicit knowledge through social processes of exchange and sharing that leads to reconfiguration and creation of new knowledge.
4. Internalization (from explicit to tacit): The conversion of explicit knowledge to tacit knowledge through the use of explicit knowledge to broaden and reframe tacit knowledge held in the individual.

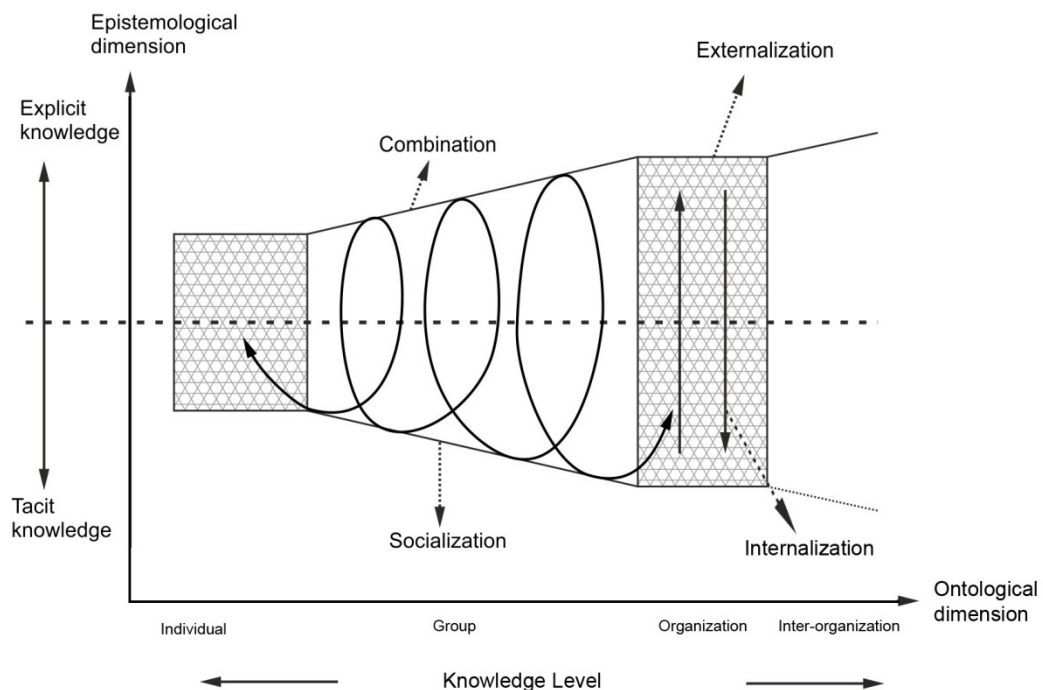


Figure 3.4 : Spiral of organizational knowledge creation (Nonaka & Takeuchi, 1995).

Nonaka and Takeuchi (1995) emphasize the role of middle management in Japanese organizations, specifically their role in the conversion of tacit knowledge to explicit knowledge, by combining the tacit knowledge of employees and senior management and incorporating this into new offerings, processes and technologies. Another major theme is the importance of group work for the creation of knowledge. The organization must facilitate knowledge creation and learning by supporting and motivating individual and group learning; and assist the combination and synthesis of knowledge by encouraging interaction, dialogue, discussion and experience sharing. Tying knowledge creation directly to strategy, Nonaka and Takeuchi (1995) indicate that "The essence of strategy lies in developing the organizational capability to acquire, create, accumulate, and exploit knowledge" (p. 74).

3.8 Knowledge Based Perspective

Together with growing emphasis on knowledge and knowledge creation since the 1990s, another important perspective stemmed from the RBV, known as the *knowledge based view* (KBV) of the firm. Although knowledge has already been recognized by the RBV as a strategic resource contributing to the creation of sustainable competitive advantages, the knowledge based perspective of the firm argues that it should be given more emphasis, and considers knowledge as the most strategically important resource of the firm (Grant, 1996a, 1996b; Kogut & Zander, 1992; Nonaka, 1994). This perspective builds upon and extends the RBV, by integrating major literature streams in organizational capabilities and competencies, dynamic capabilities, organizational learning and organizational knowledge.

In essence, all organizational capabilities necessitate the integration of specialist knowledge bases possessed by certain individuals, which takes place through productive activities carried by a group of individuals (Grant, 1996a, 1996b). As a primary input to every organizational process, routine or skill, and having characteristics like tacitness, being difficult to codify, and therefore, also difficult to transfer and imitate, knowledge and knowledge based capabilities are maintained as the key productive resources and most important determinants of sustainable competitive advantage, inside the knowledge based perspective of the firm.

Yet, knowledge integration is definitely a more significant source of competitive advantage than the knowledge itself (Grant, 1996a) as the creation of value necessitates the creation of new knowledge as well as capturing its value. Therefore more than the ownership of knowledge assets, it is the processes, systems and

structures of knowledge integration, creation and transfer that grant the organization its source of competitive advantage. Consequently, the scholars of this view conceptualize the firm as an institution for integrating, coordinating and applying knowledge (Grant, 1996b; Kogut & Zander 1992; Nonaka 1994) and hold that the central competitive dimension of a firm's skills is "to create and transfer knowledge efficiently within an organizational context" (Kogut & Zander, 1992, p. 384). Organizational routines, systems, employees, culture and identity play fundamental roles in carrying and transferring knowledge, as well as in learning and transforming it, which eventually lead to the creation of new knowledge in the form of new products, technologies, and processes (Grant, 1996a, 1996b; Kogut & Zander 1992; Nonaka 1994; Nonaka & Takeuchi, 1995).

Knowledge can exist at several levels, in the individual, the group, the organization, the inter-organization and the network (Kogut & Zander, 1992; Nonaka & Takeuchi, 1995). However, knowledge is initially created by the individual (Grant, 1996b, Kogut & Zander 1992; Nonaka, 1994; Nonaka & Takeuchi, 1995) and then integrated into organizational knowledge through formal and informal coordination processes such as, rules and directives, sequencing, routines, group problem solving and decision making (Grant, 1996b). Therefore organizational knowledge is "socially constructed" (Kogut & Zander, 1992, p. 385).

The dependence of organizational knowledge integration on social mechanisms makes the presence of common knowledge, shared culture, language and meaning critical, because they are the supportive systems that permit individuals to share and integrate their knowledge, and that increase the effectiveness and efficiency of the integration mechanisms (Grant, 1996a, 1996b). In this respect, the previously reviewed theory of organizational knowledge creation by Nonaka (1994) and Nonaka and Takeuchi (1995) complements the knowledge based view of the firm, by explaining in detail how the process of knowledge integration and creation in organizational settings take place through social interactions between the tacit and explicit knowledge stocks of individuals.

Similar to the dynamic capabilities perspective, knowledge based view of the the firm puts emphasis on the requirements of dynamically changing environments and the significance of knowledge integration and creation to answer the continual need for exploring new advantages. Accordingly, the knowledge based view clearly aligns itself with the dynamic capabilities perspective, and presents knowledge integration and creation as a dynamic capability, which enables the continual generation of new knowledge in the form of new products, technologies, and processes.

3.9 Summary

Strategy focuses on decisions that give direction to an organization's evolution; decisions that are concerned with its long term survival and the creation of sustainable competitive advantages. Although there is a multiplicity of views and perspectives, scholars agree that strategy aims to find a profitable alignment between internal resources and capabilities of the organization and the external possibilities presented by a constantly changing environment. Through strategy making and strategic management practices, organizations try to adapt to change and aim to create a marketable value that will generate a sustainable profitability for the enterprise.

In the early literature of strategic management, scholars had mostly given equal emphasis to the appraisal of conditions in the external environment and the internal resources and skills of the organization in the formulation of strategies (Andrews, 1980; Ansoff, 1965). However in time, the field started to polarize into two distinct but also complementary points of view, which essentially emphasized one over the other, and which are denoted as: the Market Based View (MBV) and the Resource Based View (RBV).

Emerging in the 1980s, the MBV puts weight on external conditions that characterize the industry, as the major sources of competitive advantage for firms. Scholars of the MBV argue that strategy starts with a thorough analysis of industry conditions and based on this analysis, it involves determining a profitable product-market position, and then, directing all organizational efforts to attaining and sustaining that position, until a new position emerges as being more profitable. Decisions regarding organizational activities and resource allocations follow from the targeted product market position, as the organization tries to align its internal structure and activities to the necessities demanded by this positioning.

The MBV is criticized on several grounds, firstly by being overly static for the current dynamism of markets and technologies (Porter, 1996); taking a top down and excessively analytic approach to strategy (Mintzberg et al., 1998); and not leaving much room for the conceptual dimension in the strategy process, nor for creative insight or for organizational learning (Mintzberg et al., 1998). Additionally, in this view, the external industry conditions define and limit strategic actions available to the business (Teece et al., 1997), reducing strategy making to choosing product-market positions (Mintzberg et al., 1998). Moreover, the MBV is criticized for ignoring the relative ease with which market positions can be imitated; the

importance of firm-specific resources and capabilities in explaining firm performance and competitiveness; and mostly the need for flexibility and transformation to be able to adapt and respond rapidly to changes in markets, competition and technologies. However, its power lies in the fact that it suggests clear and systematic frameworks to guide the conduction of industry analysis and formulation of strategy, making its approach and methods easily transferable to practice.

In contrast to the MBV, scholars of the RBV take an inward looking stance, and consider firm-specific, unique, hard to imitate and hard to substitute resources and capabilities as the main sources of competitive advantage for firms. The enterprise is viewed as a bundle of tangible and intangible resources and capabilities, among which some can constitute the firm's distinctive or core competencies. Although the terminology and concepts have different nuances, the underlying idea is that these capabilities are developed over long periods of time through firm specific learning processes. Therefore they are not easily traded or imitated, presenting a more lasting competitive advantage for the enterprise.

Consequently in the RBV, the challenge for strategy is identifying, building and deploying the set of rare, valuable, difficult to imitate, resources and capabilities and focusing on their continual development, as well as their reconfiguration and alignment to be able to respond to emerging opportunities presented by dynamic market environments.

The RBV is found more adept in explaining inter-firm differences in performance, as well as in responding to pressures faced by firms in the face of increasing dynamism of markets, technologies and consumer preferences, which has been taking increasing pace especially after the 1980s. By turning the focus of strategy, from planning of responses to external market conditions, towards identifying and building valuable internal resources and capabilities, the RBV aligns itself with a more dynamic approach to strategy making. It encourages strategic management to focus on developing distinctive competences (such as, fast product development cycles, superior process and product design, or advanced customer service) in order to create long-lasting sources of competitive advantage, in times of rapid change, where the forces in the industry are likely to alter too quickly to constitute the foundations for long term strategic action.

By placing emphasis mostly on tacit and intangible resources and capabilities, such as management skills, organizational culture, knowledge management, and brand management, the RBV underlines the significance of organizational learning,

organizational development, knowledge integration and creation processes, as well as strategic renewal and change, which have been largely neglected in the MBV. These capabilities are highly critical for organizations in today's market settings, where innovation, complexity, knowledge creation and rapid change constitute the major challenges faced by managers.

On the other hand, the RBV is criticised majorly for being mostly descriptive in nature (Priem & Butler, 2001), and lacking integrative frameworks (Grant, 1991) and management tools (Connor, 2002) to ease its transfer to practice. Its application is found difficult due to the generality of its level of analysis and the absence of specific prescriptions to guide real life application (Collis & Montgomery, 1997). Additionally, because firm resources and capabilities that constitute strategic assets are essentially intangible, tacit and complex, they are also difficult to recognize and develop (Connor, 2002), and their role for the enterprise is harder to establish and understand. These characteristics further complicate RBV's practical implications and make it hard to provide guidance to managers, who wish to follow this perspective for the development of strategic assets.

However, it is clear that both of these views have made significant contributions to strategic management. In Wernerfelt's (1984) words, they essentially form "two sides of the same coin" (p. 171), since a firm's organizational capabilities and market position are fundamentally intertwined (Henderson & Mitchell, 1997). Therefore scholars suggest that these two approaches are synthesized in order to create broader perspectives when tackling with the complexities of strategy making processes and strategic management problems inside organizations (Mintzberg et al., 1998).

3.10 Synthesis: Analysis of Design Management Capabilities from a Strategic Management Perspective

3.10.1 Design and design management capabilities through the lens of MBV

As have been explored in detail in section 3.3, the MBV has long dominated literature and practice and provided clear frameworks to guide strategy formulation and strategic planning processes inside businesses. Therefore, it is not surprising that design management literature, especially the early literature, has considered the relationship between design and strategy largely through the lens of the MBV. It can be observed that early design management literature uses their key terminology (such as differentiation and positioning) and follows their major approaches and

frameworks in suggesting ways of connecting design capabilities with business strategies. In this context, scholars mostly elaborate on how design can be used in terms of key generic strategies suggested by Porter (1980, 1985) and discuss the role of design in reference to the specific requirements of differentiation, cost leadership and focus strategies.

Design management and marketing literature mostly emphasize design's role in the context of differentiation strategy (Kotler & Rath, 1984, Lorenz, 1986, 1994; Walsh et al., 1992; Walsh, 1996), where design is portrayed particularly as a “marketing tool” (Kotler and Rath, 1984) to provide unique products, to communicate brand values and to increase customer loyalty. Porter (1980, 1985) also acknowledges the role of superior product design in the context of differentiation strategies. He indicates the importance of *use criteria*, such as product features, product quality, delivery time, distribution channels, service, prestige, brand connotation; as well as *signaling criteria* such as advertising, packaging, image, information, environments and employees, in buyer's perception of value (Porter, 1985). He relates *signaling criteria* to *significant points of contact* between the firm and the buyer before and after purchase, and underlines that inside a differentiation strategy, both *use criteria* and *signaling criteria* should be used to shape buyer's perception of value. Therefore, for a firm adopting a differentiation strategy, design's major roles are rendering the product unique and exclusively tailored to the expectations, preferences and lifestyles of the targeted market segments, in addition to contributing to brand differentiation through the communication of brand values and identity in all *significant points of contact* – in more recent terminology, *customer touchpoints*.

On the other hand, for businesses implementing a cost-leadership strategy, the major roles for design emerge in the context of design for manufacturability. Literature reveals that design capabilities that focus on process improvements, product development process efficiency, speed to market, reduction of product parts and ease of manufacture can provide significant cost advantages (Jerrard & Hands, 2008; Walsh et al., 1992). Similarly, Porter (1980, 1985) emphasizes low cost design and design for ease in manufacturing - product design modifications that facilitate manufacturing processes and that provide process improvements – among factors that can reduce the costs of value activities. Despite these critical roles, it has also been pointed out that in the scope of a cost-leadership strategy, design might be seen by businesses as a pointless expense (Stevens, 2009). This is due to the fact that the sources of cost advantage are typically sought out in economies of

scale, special access to raw materials and cheap labor (Porter, 1980, 1985) instead of developing more specialized skills such as design for manufacturability.

Coming to focus strategy, although it involves the selection of a narrow segment to be targeted, this strategy still entails differentiation or cost-leadership strategies, based on whether the business is following a cost focus or a differentiation focus strategy. Therefore depending on the type of focus, design capabilities can be utilized either for product and brand differentiation to satisfy the special needs of this narrow market segment, or for cost reduction, though with a more limited segment focus. For example, Cooper and Press (1995) illustrate how Bang and Olufsen utilizes design to secure a distinctive international niche in the consumer electronics market, by combining modern technology with distinctive design that is based on craft traditions and innovative features. Similarly, they illustrate that in Japanese companies design management focuses on reducing product development times and ensuring better links between engineering, design and marketing in order to decrease time to market, as well unnecessary costs that can occur due to lack of coordination.

Analyzing design from the perspective of Porter's (1980) competitive forces, Stevens (2009) discusses the various ways in which design can influence these 5 forces, namely buyer decisions, rivalry among competitors, threat of new entrants, threat of substitutes and bargaining power of suppliers. He indicates that threat of new entrants or substitutes can be reduced, and buyer decisions and rivalry among competitors can be influenced by creating customer loyalty through the effective use of design to generate differentiated products, strong identities, images and experiences. He adds that design can also be used to influence dependencies on suppliers through technological design choices.

Following the prescriptive approaches of the MBV and the design and planning schools of strategy, Cooper and Press (1995) similarly depict design management in a systematic and prescriptive fashion. According to them, the management of design is composed of distinct phases of "planning, organization, implementation, monitoring and evaluation" (p. 227). These phases directly follow from the vision and strategic goals and objectives of the organization, which are assumed to be clearly articulated by the enterprise. Design strategies should then be formulated in relation to each strategic objective, guiding the "use of design to achieve overall corporate objectives" (Cooper & Press, 1995, p. 228).

It is observed that because the MBV offers a more top down, analytical and systematic approach to strategy making, which is based on identifying and then trying to achieve appropriate product-market positions, design and design management capabilities are mostly placed in a subservient role in the MBV. The role of design is majorly confined to creating products, communications, environments and identities that will provide competitive advantage in selected market positions (Francis, 2002). Therefore, the focus of design management is limited to deploying design resources and capabilities effectively, in order to implement the formulated strategy, by providing "the right product at the right price in the right position at the right point in time" (Francis, 2002, p. 64), and optionally supporting this with the design of right communications and environments and identities. As a result, from this perspective, design management focuses largely on the direct and tangible contributions of design with respect to products, communications, identities and environments, and how these processes and projects can be planned in the light of the chosen business strategy.

Other significant contributions of design that were identified in chapter 2, such as design's role in the integration of knowledge possessed in different functional groups, its role in innovation, its contribution to strategy formulation processes, its role in organizational learning and the development of creative organizational culture, are not mentioned in the context of the MBV.

3.10.2 Design and design management capabilities through the lens of RBV

As already detailed in section 3.4, the RBV initiated a change of perspective in strategic management from viewing the firm as a bundle of products and businesses, to regarding the firm as a bundle of resources. RBV called attention to the strategic importance of developing unique organizational *capabilities*, *distinctive* and *core competencies*, as the basis for creating long term competitive advantages.

The influences of the RBV, with its emphasis on building unique capabilities, as well as on the processes of organizational learning and knowledge creation, can be observed especially inside the more recent design management literature. Particularly since the late 1990s, design and design management capabilities are increasingly linked to the core notions of the RBV, and explored as strategic resources (Borja de Mozota, 2003b; Svengren-Holm, 2011), core competencies (Borja de Mozota, 2003b; Svengren-Holm, 2011), dynamic capabilities (Jevnaker, 1998), and with respect to their roles in organizational knowledge creation, strategy formulation (Borja de Mozota, 2003b; Buchanan, 2008), organizational learning and

change processes (Borja de Mozota, 2003b; Buchanan, 2008; Deserti & Rizzo, 2013; Jerrard & Hands, 2008; Jevnaker, 1998; Junginger, 2008; Ravasi & Lojacono, 2005). Francis (2002) summarizes the main idea behind all these perspectives by indicating that for firms which focus their strategies on determining the capabilities and core competencies they desire to develop, design becomes a strategic resource: "Design is not seen as a project but a dynamic resource for the firm" (p. 69).

Jevnaker (1998) relates design and design management capabilities to the RBV, and specifically elaborates on design management capabilities inside the dynamic capability perspective (section 3.5), which had initially been introduced by Teece et al. (1997). Questioning how design-based competitive advantages are created by firms "not just once, but repeatedly", and how they are developed and sustained over time, Jevnaker (1998) suggests that we consider design management as a set of dynamic capabilities that enable both the exploitation and exploration of design resources. She indicates that in companies that are renowned for their design capabilities, the generation of new designs are "more about nurturing and motivating and combining competencies and expertise, than just administration and control of the assets" (p. 20). In order to convert design into a core competency, she identifies 6 component capabilities for the management and organizing of design as indicated in Table 3.1. All together these capabilities enable the firm to make use of its design resources in a distinctive way, as well as to nurture and reconfigure them, thus assisting organization's adaptation to changing environments and the repeated generation of design-based competitive advantages.

Table 3.1 : Component capabilities in organizing design and its management (Jevnaker, 1998).

Component capabilities	Core abilities
1. Resourcing capability	Ability to acquire and manage potentially profitable design resources
2. Combinative capability	Ability to configure design resources Ability to tap firm-specific or otherwise distinctive resources Ability to create interaction of design resources of competencies
3. Organizational learning capability	Ability to absorb and recreate design competences on the organizational level
4. Innovation capability	Ability to create something new and valuable which may be commercialized
5. Design-strategic capability	Ability to integrate design in strategy or otherwise make design strategic
6. Protecting capability of design-based advantages	Ability to protect design-based advantages

Jevnaker (1998) also recognizes the similarities between the design process and the knowledge creation and knowledge conversion processes described by Nonaka and Takeuchi (1995). She points that the design process incorporates knowledge embedded in different groups of people, business functions and networks, which involve social, economic and technical dimensions; and transforms this knowledge into new products, services and processes through evolutionary cycles of knowledge conversion between these numerous parties. Therefore the coordinative, communicative and integrative roles of design that were discussed in chapter 2 of the thesis, are emphasized in the context of knowledge creation processes.

Similarly, rooting her discussion in the RBV, Borja de Mozota (2003b) analyzes design as a resource; as knowledge, as a source of organizational change and as a core competency. Based on Prahalad and Hamel's (1990) 3 tests with which to identify core competencies, she indicates that design gives access to a wide variety of markets; contributes to the benefits perceived by consumers; and is difficult for competitors to imitate. Therefore, she concludes that design can become a core competency for a firm, if it is managed and integrated with other functions of the organization. It must be highlighted that in this discussion, the management and integration capabilities for design emerge as essential capabilities, in order to turn design into a core competency. Referencing Jevnaker (1998), she highlights: "The capacity to resort to design, manage and integrate design expertise, and combine the resource with the other functions becomes a core competency for the company" (Borja de Mozota, 2003b, p. 162).

Additionally, Borja de Mozota (2003b) emphasizes design's coordinative and integrative role among different business functions and inside other significant organizational processes, such as innovation, new product development and production; recognizing design as "an internal actor" in the development of other capabilities and core competencies. Consequently, besides becoming a core competency through effective management and organizational integration, design capabilities also play a critical role in the development of other organizational core competencies.

Furthermore, pointing to the tacit nature of design knowledge and processes, Borja de Mozota (2003b) connects design and design management capabilities to the knowledge based perspective and to organizational learning literature, which were reviewed in sections 3.6, 3.7 and 3.8 as integral streams of literature inside the RBV. In this context she particularly identifies design as an "integrator", "transformer", "producer" and "builder" of knowledge, explaining:

Design does not consider knowledge a transfer of information (knowledge as substance); it has a new vision of knowledge as a building process of collaborative "sense-making" (knowledge as a tool). The objective is, then, to learn while doing (cognitive learning), to provide a context for conversations and for the social construction of knowledge. (Borja de Mozota, 2003b, p. 160)

Therefore, when considered from this perspective, design management emerges as the administration of design as a learning process; a fundamental capability for organizational knowledge creation (Nonaka & Takeuchi, 1995); and a dynamic capability (Teece et al., 1997) that renews and reconfigures design capabilities, "regenerating both the products and the company" (Borja de Mozota, 2003, p. 160).

Likewise, Jerrard and Hands (2008) recognize design in the context of organizational knowledge creation (sections 3.7 and 3.8), as an integrator of knowledge that comes from different sources both inside and outside the enterprise. They emphasize that design is increasingly considered as "a means to handle knowledge and complexity" (p. 14), where "a community of designers may be observed regularly making tacit knowledge explicit, and indeed this may serve as a metaphor for the design process itself" (Jerrard & Hands, 2008, pp. 17-18).

Additionally, design enables external knowledge to be synthesized and integrated with firm's organizational capabilities, most specifically in the context of innovation processes (D'Ippolito, 2014; Verganti, 2003, 2008). With his research into the role of design in the context of innovation, Verganti (2003, 2008) details how design allows the generation of new product meanings, or the combination of new technologies with new meanings, through an understanding and anticipation of wider contexts related to the culture and trends in society. Therefore, besides its role in the communication, conversion and integration of knowledge within different functional groups, a very critical role for design emerges in the context of recognizing the value of outside knowledge; acquiring and embedding it inside the organization; and transforming it into new products, services and processes.

Scholars are also highlighting that together with mounting emphasis on design thinking and design driven innovation, the role of design is moving to more upstream phases in organizational processes, pointing to design's increasing role in strategy formulation (Brown, 2008; Chung & Kim, 2011; Cross, 2011; D'Ippolito, 2014; Hertenstein & Platt, 1997; Martin, 2009; Sanchez 2006). Through the suggestion of new visions, possibilities, and exploration of innovative business concepts, design is contributing to the formation of strategy, where designers and design managers are

“participate[ing] in the decision-making processes at the highest corporate levels” (Chung & Kim, 2011, p. 273).

The second consequence of linking strategy and design is that design influences the strategy itself. Design can provide key inputs to the strategic planning process; it can open new doors or create awareness of possibilities that may enable the firm to move in directions not previously envisioned. From this point of view, design becomes a critical element of *strategy formation*; it drives strategy in new directions. (Hertenstein & Platt, 1997, pp. 10-11)

Other scholars explore design's influence on organizational change and renewal processes. They incitate how new directions regarding product design transform business strategies and even business philosophy and culture inside organizations, expressing “that design practice and culture introduce a bottom-up perspective to organizational change that usually takes place in unexpected ways during the development of new products within companies” (Deserti & Rizzo, 2013, p. 37). Similarly, Buchanan (2008) reveals that design as a professional practice is moving into the domain of organizational change and organizational design, pointing to the growing recognition that “organizational change could come about through the practical activities of design and, most important, that “design” should be explored more explicitly and from a broader range of perspectives than it had in the past” (p. 3).

As can be observed, the perspectives suggested by the RBV are seen to be highly influential in expanding the traditional conception of design and design management inside an organizational context. Whereas design and design management had conventionally been largely limited to being regarded as subsidiary organizational processes supporting the generation of value, the ideas of the RBV laid the foundations for their consideration as significant resources, capabilities and core competencies that can become the basis for creating sustainable competitive advantages for a firm, and therefore capabilities that must be developed over time and continually nurtured. This approach recognized design's role not only in the creation of more direct and tangible outcomes (such as products, services, communications, environments and identities), but also for the coordination and development of other significant organizational processes, capabilities and core competencies, such as those related to rapid NPD, design-driven innovation, unique service provision, the creation and development of a creative organizational culture as well as design's role in strategy formulation, organizational learning and organizational change.

These standpoints paralleled the shift from viewing design as a project and design management as the management and coordination of specific design projects, to viewing design as a process - mostly a process of knowledge integration and creation - and design management as a core competency and a dynamic capability that is hard to imitate, when effectively executed and integrated with other organizational functions and processes. Therefore, this perspective underlined the management and integration capabilities of design, rather than the design capabilities per se, as requisites for converting design into a distinctive competence.

In this context, the RBV better accommodates the links between design and especially critical organizational processes such as innovation, strategy formulation, organizational development, organizational change and renewal, and the significant roles that design have inside these processes.

Therefore the RBV complements the perspectives provided by the MBV to present a broadened picture as to how design can become a strategic resource for an organization, not only externally through the creation of product market outcomes, but also internally through the creation of unique, hard to imitate capabilities and core competencies.

3.10.3 Integration and Conclusions

Just as MBV and RBV provide complementary approaches to strategy, they also emphasize complementary roles of design and design management capabilities in the context of an organization and its strategic management processes. Table 3.2 summarizes how these complementary approaches to strategic management provide different perspectives and highlight different roles for design and design management capabilities.

Through the lens of MBV, design and design management capabilities are largely considered with respect to their functions in achieving desired market outcomes, where design emerges as a tactical tool for implementing business strategies by adding value to products, services, communications, environments; and design management as the planning and execution of design projects related to these outcomes.

This approach mostly depicts the role of design and design management, as tactical or operational tools in the implementation of business strategies, which have clear goals, such as "securing distinctive international niche", or "quickly develop[ing] products appropriate to diverse lifestyles" (Cooper & Press, 1995, p. 112). This way,

design contributes to the creation of a competitive advantage by "developing a unique offer and position in a market" (Borja de Mozota, 2003, p. 158). Therefore in MBV's approach to strategy, the relationship between strategy and design is structured as a one way course, flowing from strategy formulation and the generation of clear strategic goals, and then towards the planning, management and coordination of design resources in accordance with these goals, where design functions in strategy implementation.

Table 3.2 : Design and design management capabilities through the lenses of the MBV and the RBV.

	MBV	RBV
Conception of design	• Emphasis on the outcomes of design (products, communications, environments and identities) • Design as a marketing tool, as a strategy tool	• Emphasis on the design process and the tacit nature of design processes • Design as a potential core competency and knowledge creation process
Function of design in strategy	Mostly a one way course - design as a tactical tool in the implementation of business strategies	Two way interaction - Design can also contribute to the formulation of strategies, inform new visions, new possibilities, direct organizational change and renewal
Nature of Design Processes	More routine, passive, flowing from strategy to design	More room for creativity, learning, experimentation, design having proactive and entrepreneurial roles
Roles of design	• Product differentiation (products and identities) • Creation of image and identity • Brand differentiation • Influencing customer perception • Creation of customer loyalty • Cost reduction through design for manufacture	• Coordination, communication, integration among different business functions • Organizational knowledge creation • Recognition and integration of external knowledge • Contributing to organizational learning and organizational change • Creation and development of organizational culture • Development of other core competencies (e.g., competencies in innovation, in rapid product development)
Design Management	• Design management as the implementation and coordination of design projects, in the light of strategic goals and vision • Emphasis on planning, organization, implementation, monitoring and evaluation	• Design management capabilities receive an increased focus as requisites to turn design into a core competency • Design management as a dynamic capability for continuous development, renewal and reconfiguration of design resources and capabilities • Emphasis on organizational learning, knowledge integration, nurturing competencies and organizational integration of design capabilities

Therefore it is argued that the MBV limits the exploitation of the full potential that design and design management capabilities can offer to an organization, omitting

other significant contributions of design and design management, which were identified and detailed in chapter 2 of the study. In this respect, the RBV provides a better foundation to discuss design and design management capabilities as strategic resources for a business.

It is observed that the RBV is more aligned with the contributions of design that were mostly omitted by the MBV, such as: design's role as a driver of innovation, design's position in organizational change and renewal, its contribution to strategy formulation and strategic decision-making processes, its place in the creation of an innovative organizational culture, as well as its role in understanding wider contexts related to users and trends in society and in the integration of this knowledge in the form of new products, processes, business models. Inside the RBV of the firm, design capabilities can become a core competency for a firm, if they are effectively managed and integrated with other business functions and processes, opening windows of opportunity, and suggesting new ways of seeing and approaching the world. Therefore, design management capabilities emerge as critical capabilities to turn design into a strategic resource. Additionally, design's coordinative and integrative role among different business functions and inside other significant organizational processes (such as innovation, new product development and production), makes design "an internal actor" in the development of other capabilities and core competencies (Borja de Mozota, 2003b). Through the perspectives provided by the RBV, the relationship between strategy and design is structured as a two way course; design's role is revealed not only in the implementation of strategies, but also in their formulation. Therefore the RBV gives more room to the creative and transformative potential of design and design management capabilities for an organization, not limiting them to the context of specific design projects, but considering their effects in all spheres of activity, from business strategy to organizational culture and processes.

Correspondingly, perspectives provided by the RBV has been highly significant in complementing and expanding the more traditional conception of design and design management as supportive organizational activities (carried out for the generation of a firm's products, communications, environments and identities) to their treatment as organizational capabilities, strategic assets and potential core competencies (that have integral roles in critical organizational processes such as innovation, strategic decision making, organizational knowledge creation, development of organizational culture, and organizational change and renewal).

4. DESIGN MANAGEMENT

As have been established by many researchers and as has been reviewed in detail in Chapter 2, design contributes to businesses in various significant ways. Nevertheless, design is a business process that integrates the contribution from diverse business functions and various disciplines; and like all business processes, it requires a successful management to be effective.

Beginning with the first idea, concept or need, design goes through a long and complex route of problem solving and refinement activities, seeking to combine technical, aesthetic, manufacturing and market requirements (such as materials, forms, colors, functionality, performance constraints, planned cost, tooling, etc.) in the final outcome. Moreover, the success of the design activity does not solely depend on the product or service generated, but also on whether it was generated on time, within budget, and whether it effectively serves the objectives of the design project and the overall business. Consequently, the complex and integrative nature of the design process necessitates structured managerial activities and processes to assist it and to make sure that the output is in line with the project objectives and organizational goals. This is why, as Bruce and Bessant (2002) indicate effective design does not happen solely by the application of creative effort, but as the result of a successfully managed process.

Besides its role in ensuring design effectiveness, design management emerges as a requisite to mediate the relationship between design and business success. More and more, scholars point to the strong connection between design and business performance, underlining the significance of a structured management of design in order to obtain its important contributions (Bruce & Bessant, 2002; Chiva & Alegre, 2007, 2009; Dumas & Mintzberg, 1989; Gorb & Dumas, 1987). In this respect, a recent research by Chiva and Alegre (2009) has been quite significant by providing empirical evidence concerning the positive relationship between design and business performance. Their analysis reveals 3 major results: design management enhances firm performance; investing in design is positively related to design management and; design management plays a significant role in determining the effects of design investment on firm performance. Therefore, without effective

design management; design's contribution to organizational success is severely limited.

In this chapter, design management will be explored starting from its historical development both as a business practice and an academic discipline. The chapter will continue with identifying what design management entails, together with its definitions, levels and responsibilities; and will provide a look at the recent notion of design leadership. Additionally, it will examine how design activities can be organized, as well as design's integration and strategic management inside the organization. The review will carry on with an appraisal of various tools and audits utilized for assessing design and design management capabilities inside businesses. Finally, the chapter will close with a synthesis section, which will introduce an updated design management audit framework that is developed in the theoretical phase of the thesis. This framework will be used in the empirical phase of the research, in order to explore and assess design management capabilities of businesses from the Turkish ceramic sanitary ware industry.

4.1 History and Development

The roots of the design management field goes back to the 1960s, Great Britain (Borja de Mozota, 2003b; Chung, 1998). According to Chung (1998) the term officially entered our vocabulary in 1965, with the first Presidential Awards for Design Management, where design management was defined as "a cohesive approach to corporate design activities" (p. 66). In the same year, with his influential article titled *Design Management - Why is it needed now?*, design consultant Michael Farr pointed to the beginnings of this new business practice, and described design management as the effective implementation of design projects and the coordination of communications between a business and a designer, or design agency (Farr, 1965).

Although its identification as a specific business practice took place in the 1960s, design managers had been actively participating in the industry long before, since the beginnings of 1900s. German architect Peter Behrens is regarded by many as one of the first design managers (Design Week, 1999), as well as industrial designers of the 20th century. His works for the German company AEG, which ranged from industrial products, graphics and architecture to corporate identity and communications, are considered among the first examples of corporate design management activities (Bürdek, 2005). Additionally, he set the model for many leading German companies such as Braun, Bosch and BMW on how to effectively

manage the design of every single expression of their brands (Cooper et al., 2011; Design Week, 1999). Design managers in the aforementioned German firms, as well as in some leading Italian and American companies, such as Olivetti and General Motors helped set the foundations of this business practice inside the industry, even before it was officially recognized as a separate academic field. In the context of these early and influential examples, the management of design mostly materialized as establishing a well-conceived, unified and consistent approach to corporate wide design activities.

As an academic field, design management began to appear initially at the post graduate level, inside business and design schools (Chung, 1998). The first courses were established in 1976, at the MBA level at London Business School (LBS) (Gorb & Dumas, 1987) and later at the Royal College of Art (RCA). These were followed by other business and design schools that mostly introduced post graduate level courses in design management.

However, design management, both as an academic field and a professional practice, started to show significant developments especially after the 1980s. In Britain, it was mostly the government that led the way, by recognizing the significant contributions that design can make to competitiveness and profitability of businesses (Cooper & Press, 1995; Gorb & Dumas, 1987). Through the Department of Trade and Industry and in collaboration with the Design Council, the British government initiated significant promotion and financial support programs to increase design awareness and improve the effective utilization of design throughout the industry (Chung, 1998; Cooper & Press, 1995; Gorb & Dumas, 1987). These projects were highly instrumental in increasing the recognition of design and design management; supporting the inclusion of design management courses in postgraduate education; as well as accelerating both theoretical and empirical work concerning the design management field. Through these developments, design management started to be discussed more firmly inside an economic and business context, with its relation to business, marketing and product strategies, and to key business processes, such as innovation and new product development. Assisting the effective integration of design management inside organizational contexts and the legal aspects of design were among other important subjects that received considerable attention (Chung, 1998).

Parallel to these developments, in the United States, Design Management Institute (DMI) was established in 1975, in Boston, which has since been a very important advocate and resource for the development of the field and practice. DMI has been

effective in bringing together the knowledge bases of academia and industry, by combining educators, researchers, design practitioners, and leaders from different design disciplines and industries, through its conferences, workshops, research projects and publications. DMI, and the theoretical and empirical articles in its major publications, namely *Design Management Journal* and *Design Management Review*, have largely highlighted design management with its integral role in competitiveness, economic growth and value creation. The growing body of literature in design management underlined design as a strategic resource; bridged the gap between design and management concepts, and contributed to an enhanced understanding of design from a business perspective.

Consequently, design management evolved from its initial conceptualizations as the management of design projects and corporate wide design activities, to be considered in relation to the wider business context, as the effective integration of design efforts with the business objectives, strategies and processes of an organization (Cooper & Junginger, 2011). Design's link to marketing, branding and innovation continued to receive increasing attention throughout the 1990s and 2000s. In this respect, the alignment of design with business, brand and innovation strategies began to emerge among the most central topics at the heart of the design management field.

With recent developments, the field is still expanding its boundaries. Even a quick glance at the latest articles in major design and design management journals especially since the 2000s, reveals the increasing discussion of design with respect to its role in tackling with business and management challenges. These considerations under the notions of *design thinking* (Brown, 2005, 2008, 2009; Martin, 2009) and *managing as designing* (Boland & Collopy, 2004) propose that the introduction of design approaches, methods and *designerly ways of thinking* (Cross, 2007) to management thinking and routines can significantly improve the current shortcomings of management practice; boost innovation in business models, processes and outcomes; and guide change and transformation. Accordingly, design management literature is increasingly placing emphasis on the role of design in informing, influencing, shaping strategies, visions and business models, as well as its role in leading organizational change and renewal (Buchanan, 2008). In short, design is increasingly becoming “recognized as a general human capability” which “can be harnessed by organizations and apply to a wide range of organizational problems” (Cooper & Junginger, 2011, p. 27).

It must be emphasized that the continuing shift from industrial to knowledge economy, from manufacturing to knowledge creation (Nonaka & Takeuchi, 1995) from products to experiences (Pine & Gilmore, 1999; Prahalad & Ramaswamy, 2003) are also closely inter-related developments, largely influencing the evolution of the design management field. These shifts parallel the expansion in the focus of design management, from managing and coordinating projects concerned with tangible artifacts, corporate style and aesthetics, to improving organizational processes, services, culture and overall customer experience, as well as to the creation of innovative, socially and environmentally responsible business ideas and strategies.

As several scholars have identified, these developments are suggesting a reconsideration regarding the nature of design management and naturally the roles and responsibilities of designers and design managers inside organizations (Best, 2006; Cooper & Press, 1995; Cooper et al., 2011; Er, 2005).

4.2 Defining Design Management Inside an Expanding Scope

As with design, there are various perspectives regarding design management, that have been offered by individuals in different disciplines and contexts, ranging from academia and practitioners of various design disciplines, to executives in the business and industry (Best, 2006; Cooper & Press, 1995). Additionally, because different industries such as manufacturing, services, public sector or the creative disciplines utilize, and therefore view design in different ways, there are also differences in their approaches to design management, necessitated by the characteristics of these different settings. However, in the broadest sense, design management entails all the organizational activities, skills and procedures necessary to “enable innovation and create effectively-designed products, services, communications, environments, and brands that enhance our quality of life and provide organizational success” (Design Management Institute, 2015).

One of the founding definitions provided by Michael Farr in 1965, outlines design management as "the function of defining a design problem, finding the most suitable designer, and making it possible for him to solve it on time and within a budget" (Farr, 1965, p. 38). Accordingly, Farr (1965) describes the "tasks of the design manager" (p. 39) as: exploring and setting the requirements for the project; determining the time and budget constraints; finding and briefing the designer/design team; establishing and running a network of communication between all parties involved in new product development; and coordinating the

project until the product is in the production line, and its packaging and other supportive printed materials are designed. Therefore, Farr's depiction characterizes design management mainly as the administration and coordination of design projects, with major goals being profitable execution, efficiency and coordination.

This basic depiction of design management as the management of corporate wide design projects was sufficient to cover the breadth of design management responsibilities back then. However, as have been outlined in the previous section, the field evolved, with considerable expansion in the roles of design and design management inside organizations. As a result, design management developed to cover various other activities and skills, and to be considered as a process that should be strongly integrated with corporate objectives and strategies. The definitions provided by Gorb (1990) and Blaich and Blaich (1993), reveal this broadened approach. According to Gorb:

Design management is the effective deployment by line managers of the design resources available to an organisation in the pursuance of its corporate objectives. It is therefore directly concerned with the organisational place of design, with the identification with specific design disciplines which are relevant to the resolution of key management issues, and with the training of managers to use design effectively. (Gorb, 1990 as cited in Cooper et al., 2011, p. 14).

Likewise, Blaich and Blaich (1993) define design management as "the implementation of design as a formal program of activity within a corporation by communicating the relevance of design to long-term corporate goals and coordinating design resources at all levels of corporate activity to achieve the objectives of the corporation" (p. 13).

As can be observed from these definitions, beyond the management of design projects, the importance of relating design activities and resources to corporate objectives and strategy began to emerge as one of the primary and fundamental responsibilities under design management. These definitions as well as others coming from different scholars and practitioners clearly emphasized the point that effective management of design projects is not sufficient as an end in itself; but is critical in the context of how well the outcomes of design activities contribute to the achievement of an organization's strategic goals. As a result, an increasing number of academics and design practitioners underlined that design management is initially concerned with the linking of design strategies and processes to long-term business goals and strategy, as the essential step coming before the identification and administration of design resources and processes:

The important aspects of managing design, irrespective of the job title, are about understanding the strategic goals of an organization and how design can play a part, and effectively putting in place the ways and means, the tools and methods, the teams and planning requirements and the passion and enthusiasm to achieve these goals as successful outcomes. (Best, 2006, p. 12)

As can be seen, the field is continually evolving and just a review of the changing definitions reflects this evolution. Moreover, as the businesses are expanding their focus from strictly economic concerns to include social, cultural and environmental dimensions in the way they do business, so too is the design management field. Inside to the current setting, we are seeing that design management is moving beyond a largely economic business perspective and becoming embedded inside a wider discourse in relation to the technological, social, and environmental concerns facing us today. DMI (2015) provides a comprehensive portrayal of these developments in its description of design management, and points out that the management of design is widening to incorporate environmental, social and cultural factors:

On a deeper level, design management seeks to link design, innovation, technology, management and customers to provide competitive advantage across the triple bottom line: economic, social/cultural, and environmental factors. It is the art and science of empowering design to enhance collaboration and synergy between "design" and "business" to improve design effectiveness. (Design Management Institute, 2015, para. 2)

4.3 Design Management Levels and Responsibilities

The scope of design management is quite broad. Additionally, when it comes to business practice, research indicates that design management needs and responsibilities vary significantly among firms (Best, 2006; Cooper & Press, 1995; Turner 2013). Essentially, effective management of design encompasses a broad array of responsibilities that range from project level procedures and tasks, to routines and practices for managing a corporate design organization, to informing and shaping the connection between design and corporate strategy. In order to differentiate between these different sets of responsibilities, scholars categorize these wide ranging tasks under different levels of design management.

Topalian (1980) classifies design management into two levels as *design project management* and *corporate design management*. While the former denotes short term responsibilities related to the administration of design projects, the latter refers

to long-term contributions of design capabilities at the corporate level. Topalian (1990) explains:

At the lower project management level, the issues derive essentially from shorter term, relatively confined problems encountered during the administration of design projects. In corporate design management, the issues center on the longer term implications of the relationship between an organization and its environment, and the contribution that design skills and activities make to this relationship. (p. 121)

He further details the specific sets of responsibilities under these levels as listed in Table 4.1. In alignment with Topalian, Oakley (1984) also infers two levels for design management specifying them as *design project* and *design policy* levels; whereas Blaich and Blaich (1993) denote these as *strategic* and *operational* levels of design management. On the other hand, the British Standard 7000-2 Guide to Managing the Design of Manufactured Products refers to these two levels as *organizational* and *project* levels (British Standards Institution, 2008a). Although there are slight differences in terminology suggested by different sources, in essence they denote the same set of responsibilities. British Standard 7000-2 (British Standards Institution, 2008a) also provides a comprehensive checklist of responsibilities grouped under organizational and project levels (Table 4.2).

Table 4.1 : Key issues encompassed by design management (Topalian, 1990).

At the corporate level	At the project level
• The contribution of design skills to corporate profitability • Design policy and strategy formulation • Design responsibility and leadership • Positioning and integrating the design resource within organizations • Devising and maintaining corporate design standards • Corporate design and design management audits • Sources of new design investment opportunities • The legal dimension of design • Evaluating major design investment decisions • Design management development programs • Design and the manifestation of corporate identity	• The nature of the design process and different types of design project • Design project proposals and the briefing process • Selection of designers • Bringing together and managing design project teams • Planning and administering design projects • Costing design work and drawing up budgets • Project documentation and control systems • Design research • Presentation of design proposals • Implementation of design solutions • Evaluation of design projects

Whereas in earlier studies scholars have identified 2 distinct levels of responsibility (Blaich & Blaich, 1993; BS 7000-2, 2008; Oakley, 1984; Topalian, 1980), more recent works suggest to group these tasks into 3 discrete levels (Best, 2006; Borja de Mozota, 2003b; Chung, 1998; Cooper & Press, 1995).

Table 4.2 : Checklist of design management responsibilities at the organizational and project levels (British Standards Institution, 2008a).

Organizational level	Project level
a) Establish clear ownership of design responsibility. b) Provide a vision of the future with clear objectives. c) Demonstrate genuine and visible commitment to effective design. d) Show awareness of customers' interests and needs. e) Formulate the organization's design strategy and policy. f) Establish and maintain the organization's design standards and guidelines. g) Provide organizational systems. h) Encourage an understanding of the environmental dimension of design. i) Ensure there is an understanding of the legal requirements of design. j) Establish the organization's design team. k) Provide for training in design management skills. l) Motivate staff involved. m) Harness appropriate technologies. n) Promote awareness of competitors and their external activities and innovations. o) Assess opportunities and risks attached to investments in design. p) Fund design activities. q) Provide adequate resources (personnel, equipment, information and facilities). r) Understand organizational capabilities and limitations. s) Ensure production capabilities and requirements and their consequent effects on design are understood. t) Demonstrate a commitment to quality and reliability. u) Audit the organization's design and design management practices. v) Understand the impact of design on corporate identity. w) Evaluate the contribution of design to corporate performance. x) Nurture an environment that encourages innovation and creativity. y) Address corporate social responsibility issues.	a) Agree priorities against other design projects in the organization. b) Ensure a document control system is in place. c) Ensure the overall design process/model is understood and in place. d) Record risks. e) Prepare a project plan for the design activities. f) Identify activities that could be undertaken concurrently. g) Establish the design team needed for the project. h) Ensure team responsibilities are clear. i) Identify and acquire resources for any training that may be necessary. j) Formulate work packages for the team consistent with the project plan. k) Report on progress to the authorizer of the project. l) Determine what work, if any, will be outsourced. m) Ensure effective communication and decision making. n) Control and monitor progress and costs. o) Collate cost and time data. p) Select or approve the use of specialists and subcontractors. q) Be the focal point for communication between the team and other parties. r) Ensure that the final design meets the design specification. s) Prepare a final report, evaluating the performance of the project, and incorporating lessons to be learned and opportunities for improvement.

Originating from the framework of operational, tactical and strategic levels in management control, Chung (1998) introduces an intermediary level and proposes 3 levels for design management as *design project management*, *design organization management* and *corporate design management* (Figure 4.1). Similar to 2 level

models, *design project management* constitutes the operational level that is concerned with day to day activities, and the direction of individual design projects on time and within an intended budget. Again, *corporate design management* comprises the strategic level, which is responsible for "the coordination of all organizational design activities with corporate objectives, overall management strategy and business content", and is usually carried out by a chief design officer (CDO) in design-conscious firms (Chung, 1998, p. 69). On the other hand, in Chung's (1998) model, the middle level of *design organization management* is aligned with the tactical level, and involves the management of a corporate design organization. The model of a corporate design organization or center is usually witnessed in large scale firms (Chung, 1998), such as Philips, Apple, and Herman Miller. This model can also entail smaller design centers that are geographically dispersed. The responsibilities in this level are carried out by a design director and involve: managing resources of the center; implementation of corporate design strategies; the coordination of different design disciplines such as industrial design, graphic design, packaging design, in order to provide an integrated and coherent approach; and mid-term design planning.

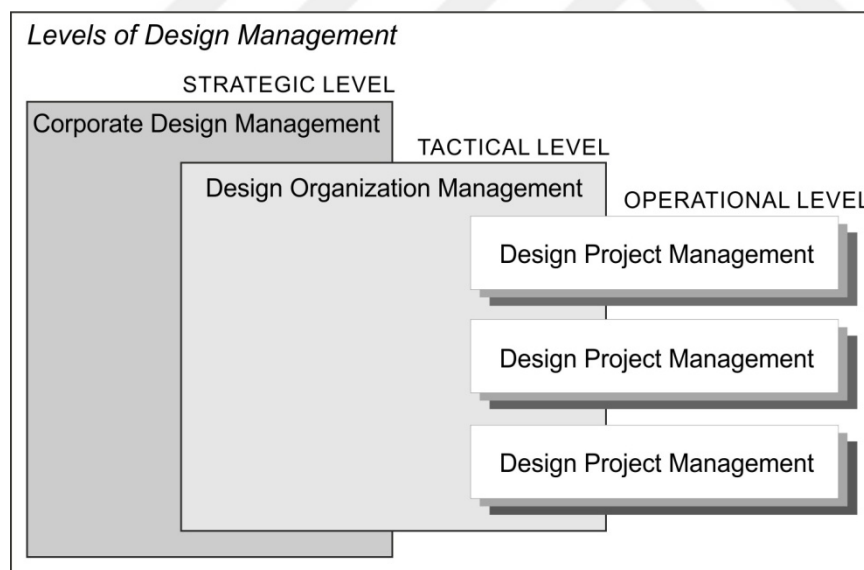


Figure 4.1 : Levels of design management (Chung, 1998).

Similar to Chung, Cooper and Press (1995), Borja de Mozota (1998, 2003b) and Best (2006) also suggest design management responsibilities based on a 3 level categorization - strategic, tactical and operational (Table 4.3). Likewise, in their depictions, the middle level is responsible for the functional management of the design department and teams; establishment of processes and systems for design's successful integration within the organization; and the implementation & monitoring of corporate design strategies. Also, design management at the operational level is

described as “managing design projects”, while design management at the strategic level is indicated as “managing the design vision” and “integrate[ing] and control[ing] the coherence of design methods and decisions with the company’s mission and strategy” (Borja de Mozota, 1998, pp. 244-245). The roles under strategic design management are further explained by Borja de Mozota (2003b), revealing the significance of design’s participation in strategy formulation processes:

At this level of design management, the manager must, ultimately, create a relationship between design, strategy, and the identity and culture of the company. The objective is to control the consistency of design work in the company and to instill design into strategic formulation process. [...] Design management must first participate in the strategy formulation and selection processes by making an effort to bring design knowledge into the transformative vision of the market, but also by supervising the penetration of the design spirit into business objectives. (p. 238)

Table 4.3 : Three levels of design management suggested by different authors.

	Chung (1998)	Cooper and Press (1995)	Borja de Mozota (1998, 2003b)	Best (2006)
Strategic Level	Corporate Design Management	Board, top (top management)	Strategic Design Management	Managing the Design Strategy (Strategy, policy, mission)
Tactical (Functional) Level	Design Organization Management	Middle/Business Function (functional management)	Functional Design Management	Managing the Design Process (Tactics, systems, processes)
Operational Level	Design Project Management	Design Activity/Function (design activity management)	Operational Design Management	Managing the Design Implementation (Operations, tangibles and touch)

While suggesting 2 levels for design management, at the strategic and operational levels, Blaich and Blaich (1993) classify the responsibilities of design management in 4 major spheres of activity as:

1. Contributing to corporate strategic goals
2. Managing design resources
3. Managing the design process
4. Cultivating an information and idea network

They explain that the responsibilities under *contributing to corporate strategic goals* refer to the development and auditing of a design policy, together with a committee of board and senior level managers. The design policy specifies the way the business applies design throughout all its corporate expressions, therefore this responsibility essentially entails the articulation of corporate identity (Blaich & Blaich,

1993). Additionally, the identification of needs and trends through design and marketing research programs and providing recommendations for company's response to these needs are among other major responsibilities in this group.

The responsibilities under *managing design resources* include the recruitment of internal and/or external designers; giving designers direction in the light of strategic goals; and in the case of a combination of an internal design team and outsourced design, establishing an effective integration between them. The nurturing and renewal of design skills through development programs; provision of new tools and techniques; enabling access to new and recent information regarding new materials, design principles, theories, etc. and the continuous evaluation of designers' performance and development are also among responsibilities in this sphere of activity.

The responsibilities for *managing the design process* involve integrating design into the product development process, by structuring the design process as well as the communication processes among functional departments and team members. They also entail ensuring the flexibility and reconfiguration of these processes based on the specific needs of each project.

Finally, the responsibilities for *cultivating an information and idea network* necessitate the development of an idea network by establishing links between the design team and other design practitioners, designers from other industries, design educators, and design critics. Ensuring the constant exposure of designers to interdisciplinary information and wider developments regarding economy, business, society, technology, trends, new business practices, social and ethical issues is another critical responsibility in this category.

In a similar manner Cooper and Press (1995) identify 4 major areas of management activity that is carried out in 3 levels. These are:

- Planning Design: This involves informing corporate strategy; the definition of design strategies and policies in the light of strategic objectives; their coordination with other business functions; and the definition of design programs, procedures and targets.
- Organizing Design: This involves the creation of a supportive organizational structure, culture and climate for design; provision of necessary human and financial resources; ensuring training and learning in order to develop design skills and capabilities.

- **Implementation and Monitoring:** This involves the communication of corporate objectives and strategies; planning design resources for their achievement; development of programs and design briefs; project implementation, documentation and control.
- **Evaluation:** This involves definition of evaluation criteria; comparing overall design performance against design strategy; evaluation of the design process, project outcomes and return on investment; and the evaluation of market results and effectiveness.

As shown in Figure 4.2, these 4 major areas of activity are further broken down into specific subjects, which are addressed in 3 different levels of the design management process.

	Planning design		Organizing design			Implementation and monitoring			Evaluation
	Strategy	Policy	Process planning	People and structures	Investment and finance	Training and learning	Documentation, communication	Projects	
Level 1 Board top	Design vision, strategic direction and approval, creating supportive environment								
Level 2 Middle / business function	Implementing and monitoring design strategy, creating management structures, developing projects, evaluating outcome								
Level 3 Design activity / function	Managing design, identifying skills, implementing, monitoring and evaluating design work								

Figure 4.2 : A design management matrix of issues to address (Cooper & Press, 1995).

The overviewed levels, responsibilities and activities indicate the wide-ranging nature of issues to address in managing the design strategy, resources and processes of the company. The following section will focus on clarifying the concept of design leadership, which has emerged as a complementary concept to design management, and which stresses the leadership skills, qualities and responsibilities necessary to supplement the more operational tasks under managing design.

4.4 Design Leadership

As have been examined in detail in the previous section, design management involves a wide spectrum of responsibilities which cover operational, functional and

strategic activities and concerns. In this context, Turner and Topalian (2002) differentiate between design management responsibilities at the strategic level and other more operational responsibilities, and introduce the notion of *design leadership*. According to Turner and Topalian (2002), just as there are fundamental differences between leadership and management, *design leadership* and *design management* are fundamentally different activities. However, they are strongly dependent on each other for their effectiveness because in order to maximize the value of design for the organization, design management has to be guided by design leadership.

Turner (2013) explains the difference by indicating that design leadership is proactive; it is concerned with helping companies envision the future, clarify the implications of future scenarios through design-related skills and make sure that the best design direction is chosen in alignment with the organization's strategic objectives. On the other hand, design management is mostly reactive; it focuses on following the direction set by design leadership and delivering effective and efficient design outcomes through the structuring and administration of design functions, processes and procedures (Turner, 2013). While Turner and Topalian (2002) restrict the responsibilities of design managers to managing people for design, design budgets, design timetables, design work and design infrastructure, the responsibilities of design leaders are:

- envisioning the future,
- manifesting strategic intent,
- directing design investment,
- managing corporate reputation,
- creating and nurturing an environment of innovation,
- and training for design leadership (Turner & Topalian, 2002).

However, they also mention that in practice, it is difficult to differentiate between the two, as the tasks of design leaders are sometimes performed by design managers and those of design managers by design leaders. Stressing that there are many different types of design leaders, McCullagh (2008) identify 3 common qualities they all share as: being good at envisioning the future, having strategic thinking skills to identify new opportunities, and leading others with their overall vision of how the future should be.

However, it can be observed that the concept has a great overlap with strategic level design management responsibilities (see section 4.3), which has already been identified by design management literature under the notions of: *corporate design management* (Chung, 1998; Topalian, 1980) or *strategic design management* (Borja de Mozota, 2003b). Nevertheless, Turner (2013) indicates that there are fundamental differences between the skills and approaches required to carry out the complementary sets of responsibilities at the strategic and operational levels. Following this argument, this may constitute a major reason why the term design leadership has been introduced, as it could be a better match to highlight the qualities and responsibilities that must be possessed by those individuals to successfully take on design management roles at the strategic level.

4.5 Organization of Design Activities Within the Firm

A main issue of interest in design management literature and practice is how to carry out the organization of design activities. Depending on the business context, needs and resources, there can be different approaches to this. Each present different implications, and have their own advantages and disadvantages. Scholars identify 3 major approaches to the organization of design activities (Bruce & Morris, 1994, 1998; von Stamm, 2008). These are:

- In-house design capability
- External (outsourced) design capability
- A mixture of in-house and external design capabilities

In case of an in-house design function, the firm chooses to keep design capabilities within the organization. There may be a separate design department or design skills can be dispersed among different departments such as R&D, production, or marketing (Bruce & Morris, 1998). In outsourced design, design capabilities reside outside the firm and whenever necessary, the organization chooses and commissions external design professionals or design agencies to perform the required design activities. On the other hand, some organizations prefer to utilize a combination of in-house and external design capabilities in varying degrees, based on the objectives of the individual design projects.

The major advantages of an in-house design function are mostly expressed as: the familiarity of designers with the company, its capabilities, practices, culture and processes; designers' instant availability to deal with problems occurring during the

product development process; and their higher integration throughout the organization, which leads to a better coordination with other departments, functional teams and processes (Bruce & Cooper, 1997; Bruce & Morris, 1994, 1998; von Stamm, 2008). Additionally, through the standardization of in-house design processes (Borja de Mozota, 2003b), efficiency can be increased and project times can be reduced. In-house design capabilities are also more advantageous in terms of guaranteeing the confidentiality of projects, providing a better protection of knowledge and innovations (Borja de Mozota, 2003b). However, it is also observed that in-house design practices have the risk of becoming more routine and stagnant, thus limiting creativity and the generation of innovative ideas and outcomes (Bruce & Cooper, 1997; Bruce & Morris, 1998). The costs of maintaining an in house design team can be another major setback, especially for SMEs, which usually have limited financial resources that can be allocated to design. However, through effective design management practices that place emphasis on supporting creativity, the continuous development of design skills and the integration of design with other business functions, in-house design capabilities can be developed into core competencies.

Another important issue concerning internal design capabilities is its place inside the organizational structure. In practice, in-house design teams can be found under marketing, research and development, or production departments or design can be situated as an independent department. This has important implications for design's contributions and effectiveness. Borja de Mozota (2003b) underlines that "the designer's place in the company hierarchy will affect how the designer works and how the company uses design capabilities" (p. 216). For example, design under production or R&D departments are frequent in firms with more dominant production and technology cultures, whereas design under marketing is mostly observed in businesses in highly competitive markets which are implementing brand and marketing based strategies (Borja de Mozota, 2003b). Placement of design under other business functions, such as marketing or production, can cause problems related to power and coordination. This arrangement makes the interference and even dominance of other specialists highly possible throughout the design process, which can take undesired and intolerable levels (Chung, 1998).

Borja de Mozota (2003b) expresses that the importance given to design is directly related to its level of independence in relation to other business functions. Integrating design as an independent department is mostly witnessed in businesses that view design as a strategic asset and a core competence, rather than a

supportive function for marketing or production. This situation is rare although it provides the most pertinent conditions for turning design into a strategic resource, by granting design the power and involvement at the same level with other departments (Borja de Mozota, 2003b, p. 220).

Then again, outsourcing of design capabilities can be preferred particularly for stimulating creativity, since external design professionals are more likely to provide fresh and innovative approaches, and are not "hampered by the politics and culture of the firm, or other rigidities of previous product development practices" (Bruce & Morris, 1998, p. 42). Hargadon and Sutton (1997) express that external designers' experience in different contexts, industries and organizations advances their creativity, as they can transfer ideas, solutions and technologies from one context into another and between industries. External design consultants can also be used as marketing agents, helping companies, especially those based in newly industrialized countries to receive critical information regarding their target markets (Er, 1997). Another advantage is that collaborating with reputed designers can ease the acceptance of brands and products from newly industrialized countries, in advanced and global markets (Er, 1997; Topaloglu & Er, 2010).

However, external designers' lack of familiarity with the firm and its practices may also lead to mistakes or undesired outcomes (Bruce & Morris, 1994). Thus, building familiarity through long term relationships, sharing of a common language, personal chemistry and trust are suggested as beneficial conditions, enabling external design professionals to develop an understanding about the company, its business context and capabilities, which can in turn facilitate the generation of effective outcomes (Bruce & Doherty, 1993). Coordination of external designers with in-house designers and/or other departments may be problematic, particularly when the innovative phases are carried out by external designers, whereas internal designers are responsible for the development phases and less creative design activities (Cooper & Press, 1995). Other possible problems are mentioned as the "not invented here" syndrome, and a credibility gap, which may occur if there is a considerable difference between a product and the company's established style (von Stamm, 1998). Another concern in the use of external design expertise is the existence of risks related to leakage of knowledge and undesired information spillovers (Bruce & Cooper, 1997; Czarnitzki & Thorwarth, 2012). Due to the possibility of having access to same external design professionals and the relative ease in the copying of design-based features of innovation by competitors, it is expressed that relying

mainly on external design capabilities may not lead to the generation of a competitive edge over rivals (Czarnitzki & Thorwarth, 2012).

In order to take advantage of the positive aspects of each, some organizations utilize a mixture of in-house and external design capabilities. While they build internal design capabilities, they also make use of external design professionals in order to keep a flow of fresh ideas; to ignite creativity and bring new knowledge and expertise inside the organization (Bertola & Teixeira, 2003). Nevertheless, the integration of in-house and external design professionals is crucial to ensure that they are working together towards common goals (Bruce & Morris, 1994, 1998).

Additionally, no matter the specific approach taken in the use of design capabilities, one of the most critical issues for design management is managing the interface between design capabilities and other business functions in order to ensure inter-functional communication and collaboration:

The interface between design capability and other functions has to be managed and the nature of this interface considered, planned and integrated within the firm. [...] A critical success factor for new product development is that of effective management of the different functions involved in this process. (Bruce & Morris, 1998, p. 43)

4.6 Design Integration

Research on design's integration within the organization, and with respect to other business functions and processes has demonstrated that this is one of the most critical but difficult issues in managing design. Design's integration inside the organization determines the level of inter-functional collaboration, communication and coordination, which are stressed as extremely significant conditions for the effectiveness and efficiency of design processes (Borja de Mozota, 2003b; Bruce and Bessant, 2002). Additionally, Topalian (1990) underlines an integrated use of design with respect to other business functions, as well as in all design categories as a prerequisite for managing design effectively. Similarly, Bruce and Bessant (2002) emphasize that "effective management of design needs an integrated approach, which links the specific contribution of design specialists with those of others throughout the organization" (p. 47). Consequently, organizations that can overcome the difficulties related to design integration can turn this into a significant competitive advantage, because the ability to integrate design throughout the organization can become a know how and a core competence that is difficult for competitors to imitate (Borja de Mozota, 2003b).

However the level of design's integration within the company depends on many factors such as the way design activities are organized, the place of design and design management inside the organizational structure, company size, the existence of management structures and processes to ensure coordination and collaboration between design and other business functions, the prevailing organizational culture, as well as the accumulated experience and know how in the use of design. A further complication is that in large scale organizations, the level of design integration can vary from one department to another. While one department may be utilizing design effectively, others may neglect its possible contributions (Turner, 2013).

Dumas and Mintzberg (1989) consider five approaches to the management and integration of the design process inside organizations: design being promoted by a *champion*, design being stated as a *policy*, design being initiated as a *program*, design being installed as a *function* and finally *design as infusion*. According to them, these approaches result in varying degrees of direction, control, and guidance and represent different stages in the development of design inside the organization. They also consider that the former 4 approaches serve as stepping stones to the latter approach, which they suggest as producing the most effective results. In the *design champion* approach, design is promoted by an individual called a champion, which may be the chief executive officer, a mid-level executive or an external design consultant. This approach can also take the form of a design advisory panel or steering committee that gives support, guidance and criticism regarding design initiatives inside the organization. However, when the champion leaves, design initiatives usually diminish. But in rare cases, his enthusiasm and belief in design can influence and pervade the organization. In the *design policy* approach, design moves from being promoted by a champion to being officially articulated by a policy document. The design policy statements are intended to empower design initiatives throughout the company and influence action at all levels. According to Dumas and Mintzberg (1989), they sometimes do have an impact, but usually they stay on paper as idealized aspirations. Alternatively, a company can also start design activities in a totally new area, or new design activities in an old one, through the initiation of a *design program*, such as a new product development program, a corporate identity program or a design audit. These programs usually do not have long-lasting effects when they are carried out as single projects; but they may have enduring results if they serve as models for other initiatives.

In the *design function* approach, design is integrated in a company through the establishment of a formal department. Dumas and Mintzberg (1989) point out that in spite of its formalization as an independent department, design may not generate the desired influence in daily operations, processes and culture of the organization, as it may “lag behind” other related functions, and result in “cosmetic design” (p. 40) – that is design occurring only after other functions have completed their tasks. They stress that the design function can only play an integrated role, if design is carried out with belief and commitment and is granted a *leading role* to drive related processes, as well as guide change inside the organization.

Therefore, the integration of design takes on an ideal dimension in the case of Dumas and Mintzberg's (1989) notion of *design as infusion*, which they define as “the permeation of design throughout the organization” (p. 41). According to them, “Infusion is informal; the ultimate intention is to have everyone concerned with design. [...] Managers whose responsibilities touch design do not merely accept it but become part of it. Design thus becomes a way of life in the organization.” (Dumas & Mintzberg, 1989, p. 41). This is the ideal case, where design infuses the culture of the organization, and everyone plays a part in supporting design, either by participating in daily operational activities, or by their prevailing attitude that encourages design.

In their research regarding design integration in industrial practice, Stevens et al. (2009) have identified 3 important themes to indicate the level of design integration (and mostly lack of it) as: *silent design*, *disparate design* and *partial design*. *Silent design* had already been articulated by Gorb and Dumas (1987) as the case when design activities are carried out by people who are not designers and who are not aware that they are participating in design activities and decisions. They had identified that this phenomenon can occur even inside organizations, where there are recognized design activities, formal design policies and designers among the staff (Gorb & Dumas, 1987). *Partial design* is the condition, where design is only used in some operational areas, such as packaging and product design, either effectively or in a limited way as superficial cosmetic styling; although it is neglected in other areas such as web design, service design or corporate communications. On the other hand, Stevens et al. (2009) indicate that in *disparate design*, design activities are widespread throughout all operations, but they are not applied holistically and in a coordinated manner; therefore inhibiting the synergies that can be created through an integrated use of design. Accordingly, Stevens et al. (2009) propose *integrated design* as the condition, in which design is considered as a

strategic resource and is integrated throughout the organization, in all operations, and in a coordinated manner. Silent design, partial design and disparate design can be observed in organizations in various degrees and may also indicate steps in the firm's increasing maturity towards an *integrated design*. However, Topalian (1990) highlights that an integrated approach to design evolves in small steps, as the organization builds experience and cultivates an enlightened design approach over many years. Turner (2013) similarly stresses that the path to the full integration of design within a business is usually long and arduous.

According to Bruce and Bessant (2002), organizations can fail to integrate and manage design expertise due to several factors such as short-termism, low risk management, design illiteracy, cost constraints, tradition-bound behavior, internal politics and lack of coordination and shared goals. They explain *design illiteracy* as managers' lack of knowledge and awareness regarding what is involved in design activities, as well as their lack of knowledge and experience to understand the contributions that design and designers' skills can offer to the organization. This results in important challenges for the integration of design, since it causes design to be associated with high risk or seen as an unnecessary cost, and the value of design to be underestimated. Additionally, lack of coordination and shared goals, company politics and divergence in the interests of different business functions emerge among other serious barriers to design integration, in addition to the effectiveness of design management processes (Bruce & Bessant, 2002; Siegel as cited in Jerrard & Hands, 2008). A highly hierarchical corporate culture also limits the creativity of designers, as well as other employees, by imposing standard formats of behavior, which are hard to change or wander away from.

Consequently, design's integration with other business functions and business processes is difficult to realize and requires more than investment in design, the promotion of design through key individuals or its foundation as a policy, a program or even as a separate department. Commitment to design; organization-wide attitudes to design; coordination with other business functions; design's utilization in different areas in a holistic and consistent manner; as well as the accumulation of experience through long time periods of design use emerge as vital requirements to ensure the successful integration and management of design throughout the organization.

4.7 Strategic Design

[...] design needs to be managed strategically at the top level and the design management process should start at the stage of defining the corporate strategies before the identification of a new product and/or service idea, going beyond being a function to be managed at organizational or project levels (Er, 2005, p.1-2).

As have been reviewed in sections 4.1 and 4.2, throughout the evolution of the design management field, there has been a growing focus on establishing the link between design, and an organization's business goals and strategies, in order to acquire the benefits that design can offer to businesses (Borja de Mozota, 2003b; Bruce & Bessant, 2002; Cooper & Press, 1995; Cooper et al., 2011). Consequently, design's role in leading or contributing to the formation of company strategy, and design management responsibilities pertaining to the strategic level became gradually more emphasized, under the terms of strategic design management (Borja de Mozota, 2003b) and management of design at the strategic level, in order to distinguish these tasks from the more prevalent understanding of design management as limited to the management and coordination of design projects or the design organization. Inside the developing discourse, another term that became increasingly adopted to underline the importance of establishing design's relation to strategy and strategic thinking is *strategic design*. However, a review of its various characterizations suggested by different scholars reveals that the term is employed in two slightly different ways.

In the first approach, the term strategic design is defined by Manzini and Verzoli (2003) as:

a design activity aiming at an integrated system of products, services and communication, based on new forms of organization, based on the roles reconfiguration of different companies, clients and other stakeholders; a design developing a strategy linking long term goals with existing trends and based on new systems of values and new market opportunities. (p. 856)

Manzini (1999) and Manzini and Verzoli (2003) mostly underline strategic design in the context of sustainability and the generation of product service systems (PSS). They propose "strategic design for sustainability" as the design of an innovation strategy, which changes the emphasis from the design of physical products, to the generation of extended systems of products and services that drive production and consumption routines towards more sustainable practices. In their view, strategic design is the capability to conceptualize and develop integrated systems of products, services and communications, which are aligned with medium to long term

strategic perspectives of sustainability, and informed by future trends, values and opportunities. Helsinki Design Lab (n.d.) provides a similar description for strategic design:

Traditional definitions of design often focus on creating discrete solutions—be it a product, a building, or a service. Strategic design applies some of the principles of traditional design to "big picture" systemic challenges like health care, education, and climate change. It redefines how problems are approached, identifies opportunities for action, and helps deliver more complete and resilient solutions. Strategic design is about crafting decision-making. (Helsinki Design Lab, n.d., para. 1)

In both of these definitions strategic design is depicted as taking a very holistic, broad and multidisciplinary approach towards wider and systemic problems, that extend much beyond the conventional boundaries of specific design domains, and that are directed towards designing the total architecture of the solution. The emphasis is more on tackling large scale challenges we are facing today, by taking a strategic perspective to the use of design.

Yet there is another and more prevalent use of the term, which portrays strategic design from an organizational perspective, and as largely parallel to what has previously been portrayed under the notion of strategic design management. In this sense, Lorenz (1994) explains strategic design as a stage in the evolution of design management capabilities inside businesses, where design is more deeply integrated into the company. Design becomes utilized inside a broad array of activities throughout the organization, such as lifestyle research to predict and shape innovative product concepts. According to Hertenstein and Platt (1997), a strategic design culture is one "in which the company strategy is clearly linked to design" (p. 10). They express that the connection between design and strategy is established in two ways. In the first way, design functions in the implementation of strategies by transforming these into products, services, communications and environments that are clear depictions of these strategies. In the second route, design drives the formulation of strategies, by providing important inputs to the strategy development process, and by creating awareness about opportunities and envisioning new directions.

Er et al. (2005) provide a similar portrayal: "the concept of strategic design foresees that design is not only concerned with the products, but also with how a company defines its goals" (Er et al., 2005, p. 42). Likewise, Holland and Lam (2014) consider strategic design as "using design management to drive and implement corporate strategic goals. It creates vision and integrates and orchestrates collaboration

across disciplines in order to deliver real value to all stakeholders through creative solutions to business, social and environmental problems" (p. 3).

As can be seen, where the first perspective points to the combination of a broad strategic thinking approach with design capabilities in order to solve problems in the context of wider systemic problems such as sustainability, education, etc., (Manzini, 1999; Manzini & Verzoli, 2003), the second perspective identifies the connection of strategic thinking and design capabilities inside an organizational context, and reveals an approach that is largely equivalent to strategic design management (or the management of design at the strategic level.) Holland and Lam (2014) integrate these two angles by expressing: "For design to be strategic, the process and outcomes must be purposeful and effective. Purposes could be business goals and objectives, governmental targets, or charitable and social causes" (p. 5).

Consequently, it can be observed that in the context of an organization, the concept of strategic design is used to denote a higher level of design integration within the organization, by means of utilizing design with a clear connection to corporate goals and strategy, enabling design to lead and shape company strategies, business processes as well as organizational change. In this respect, it is proposed that it can also be viewed as a certain level attained in the design management capability of an organization so as to utilize design as a strategic resource, through its effective coordination with business objectives and strategy.

4.8 Assessment of Design and Design Management Capabilities

Throughout chapter 2, the value of design and design management capabilities for businesses has been revealed. However it is also indicated that effective integration and management of design is a challenging route and develops in little steps, over long time periods (Topalian, 1990; Turner, 2013).

In this respect, the assessment of design and design management capabilities of businesses is a significant subject, valuable for both academic research and business practice. In the most basic sense, the assessment of design and design management capabilities enables businesses to review and discuss how the organization handles design activities and decisions, to evaluate design processes and outcomes as well as their effectiveness, and thus establishes awareness about existing routines and shortcomings, and opens up a path for improvement and change. Jerrard and Hands (2008) underline the importance of continuous

improvement in managing design and how this necessitates tools to facilitate the evaluation of existing systems and practices:

[...] design in its current conception incorporates a significant amount of complex information and knowledge that must be properly managed. Therefore, a mature, sophisticated and continuously improving series of processes is becoming increasingly important for organizations. This in turn requires a sound and robust management of the whole development process, integrating the appropriate tools and techniques, with the necessary supporting infrastructure. These problems highlight the need for a flexible set of tools which can help in assessing the whole process, and provide the opportunity to identify specific aspects in order to later focus on them during the improvement phase. (p. 15)

Similarly, Inns (2002) points to the value of using tools and guidelines in the development of design capabilities within a business, and indicate that “some form of assessment or audit is needed to ascertain current levels of capability before opportunities for further improvement can be identified” (p. 240). Several tools and frameworks have been developed for reviewing design and design management capabilities within a business. These are commonly mentioned under the term design audit (Cooper & Press, 1995). Some focus exclusively on the company's use of design, and the effectiveness of design processes and outcomes; while others concentrate on the larger picture and include the evaluation of managerial and organizational dimensions concerning design management processes and systems. The following section focuses on design audits and examines how they can be carried out.

4.8.1 Design audits

British Standards Institution (2008b) defines audit as a “systematic examination to measure conformity with predetermined requirements” (p. 3). Cooper and Press (1995) clarify that audits have two major roots: one evolving from standards and legislations that companies must meet in order to attain certifications such as those regarding quality or environment; and the other stemming from organizational management practices that aim to assess and improve different factors inside an organization. The latter, which they identify as management audits, have originated in finance and accounting, and have disseminated to other areas of management such as strategic, marketing, quality and innovation audits (Cooper & Press, 1995; Inns, 2002). In today's business world, audits have become prevalent tools “focused on identifying areas for change in a business” (Inns, 2002, p. 240).

In essence, audits are formed of a list of questions that provide the foundations for “an in-depth analysis of a particular area of importance to the corporation”; and

therefore can encompass every aspect of an organization (Cooper & Press, 1995, p.190). Inns (2002) explains that the audit process is similar regardless of the subject area; it begins with the identification of areas and activities to be examined; continues with the determination of relevant stakeholders; and using questioning, observation and research methods, assesses the quality and performance of the activity under focus. This is followed by analysis of the results in order to offer recommendations and directions for change (Inns, 2002).

Coming to design audits, Topalian elucidates that corporate design audits “denote the formal and comprehensive examination of what goes on design wise within industrial and commercial organizations” (as cited in Cooper & Press, 1995, p. 203). Design audits can cover a broad array of issues and activities related to design and its management. In this respect, the most critical questions emerge as how to define the boundaries of the design audit, and which specific issues to address, followed by the questions of which criteria to use in the assessment process, how to execute the audit and by whom (Cooper & Press, 1995). The answers will change according to the specific aims and objectives in carrying out the audit. Cooper and Press (1995) record some possible aims for conducting design audits as:

- Advising and directing strategic change by examining environment, market and competitors.
- Improving overall standard of product design by benchmarking against competitors.
- Developing a design policy manual.
- Monitoring the implementation of defined policies throughout the organization.
- Improving design standards based on their comparison with set standards.

Topalian (1984) portrays the extensive range of areas that can be covered in corporate design audits as: design policy audit, design activities audit, product design audit, design services audit, visual identification audit, audit of target audiences of design function, audit for personnel involved in design activities, design facilities audit, work environment audit, design management system audit, design discipline and procedures audit, corporate design standards audit, design funding audit and design department audit. Whereas, Cooper and Press (1995) provide a grouping for possible areas for design audits, under four major levels (Figure 4.3):

1. Environmental factors that have an impact on company and design strategies such as trends, competitors, legislation.
2. Corporate culture, which includes corporate values, vision, design strategies and the present levels of design awareness and understanding.
3. Design management, covering design processes, organization, resources, skills and the management of projects.
4. Physical manifestations of design; encompassing all products and services, as well as communications, environments and identity.

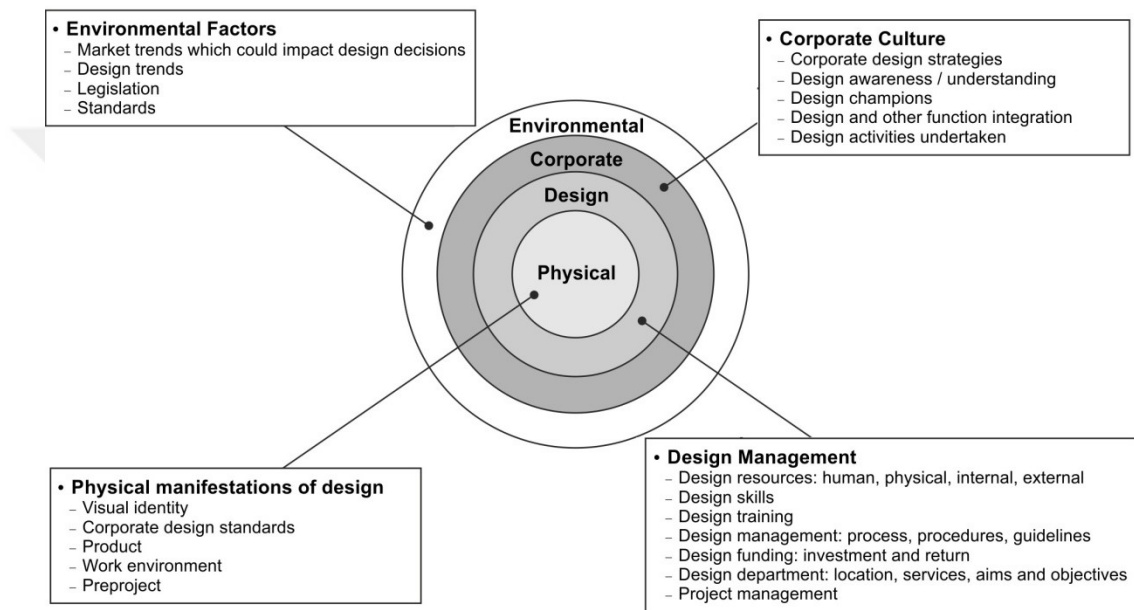


Figure 4.3 : The levels an organizational design audit might address (Cooper & Press, 1995).

Although design audits can be performed with specificity, by focusing on one particular area, for instance visual identity, corporate culture or design awareness; they can also be conducted in a broad manner by examining an array of desired areas over an extended period of time.

Cooper and Press (1995) express that guidelines, standards and checklists concerning issues to address in carrying out design activities and design management processes, present a sensible foundation for the development of audits. They illustrate that this is a common route that has been followed by several scholars and institutions. As there are no strict recipes concerning how to carry out design audits, researchers, consultancies or organizations suggest their own approaches, depending on factors, such as the subject of the audit, its goals and objectives. Additionally, again based on these factors, the audit process can be

carried out by an external auditor (or auditors), a team consisting of internal staff or a combination of both (Cooper & Press, 1995). However, in order to ensure objectivity, auditing by external parties or in the inclusion of an external member to lead an internal audit team is usually recommended.

While many scholars (Best, 2006; Cooper & Press, 1995; Topalian, 1984) use the term design audit as a broad heading to cover every possible area related to design and its management, British Standards Institution (2008b) provides a clear distinction between design audit and design management audit. Design audits are specific to design activity and projects; and defined as “systematic evaluation of the result of an activity to establish the extent to which the original objectives have been fulfilled” (British Standards Institution, 2008b, p. 11). On the other hand, a design management audit is much broader in scope and entails the “detailed examination of an organization’s design activities and design management practices at corporate and project levels”; they may include “all operations, facilities and outputs, as well as all principal categories of design” (p. 14).

To sum up, these tools and frameworks for auditing design are intended: to help organizations assess their current design and design management capabilities and evaluate them with respect to other organizations (Cooper & Press, 1995); to determine other possible avenues for design use; and to understand how organizational design and design management capabilities can be developed. Additionally, design audits are suggested as particularly useful tools for organizations to explore how coherently design is utilized throughout the organization, how design management can support the business strategy in a more effective way, and as the basis for change and renewal towards the updating of design and design management capabilities (Best, 2006).

Moreover, they are also used for research purposes, to explore existing capabilities in organizational, industrial and national contexts, and to understand problems, as well as conditions facilitating good practices in design and design management (See Dickson et al., 1995; Heskett & Liu, 2012; Moultrie et al., 2005; Koostra, 2009; Storvang et al., 2014). As Cooper and Press (1995) indicate: “An audit, like any other examination, is basically a research activity, involving asking questions, searching for answers and testing the reliability of those answers in order to gain new knowledge and move forward” (p. 212).

4.8.2 A review of design and design management assessment frameworks and audit tools

One of the first design audits suggested by the literature was developed by Kotler and Rath (1984) to assess *corporate design sensitivity* and *design management effectiveness* in the context of marketing (Table 4.4). The audit was developed with the objective to provide marketing specialists a tool for periodically reviewing the role design has inside their marketing strategy and decision making processes; in addition to evaluating how well design is managed by marketing. As indicated in Table 4.4, the audit consists of 5 questions covering each of these two areas, which are all scored from 0 to 2, in order to provide a combined score for the design sensitivity and design management effectiveness of the organization. Companies whose combined rating is between 14 to 20 are regarded as “in fairly good shape”, whereas those that score less than 8 are strongly suggested to “examine whether they are missing a major opportunity by not making more use of design thinking in their marketing strategy” (p. 20).

Another tool (Table 4.5), which was specifically developed to evaluate design management skills, was suggested by Dickson et al. (1995). Their research aimed to gain a better understanding about managing product design, particularly in the context of small, high-growth firms; and aspired to find out: which aspects of design management the CEOs of these firms believed they managed well, which gave them difficulty; how involved they were in design decisions; and how much importance was given to product design. Their self-assessment tool concerning design management skills was utilized in the context of a larger survey study and provides a more detailed assessment of these capabilities than that of Kotler and Rath (1984).

The tool is based on 5 main categories of design management skills as: basic skills, specialized skills, involving others, organizational change, and innovation skills. As indicated in Table 4.5, each of these categories further comprise several questions to provide a detailed evaluation of each skill category, and include a 5 point Likert scale for their assessment. Additionally, the tool was used by Chiva and Alegre (2007, 2009), in two different studies, one that examined the relationship between company’s design management skills and the organization of the design function; and the other, which explored the relationship between design management and firm performance.

Table 4.4 : Design sensitivity and design management effectiveness audit (Kotler & Rath, 1984).

Design Sensitivity Audit	Design Management Effectiveness Audit
1. What role does the company assign to design in the marketing decision process? (0) Design is almost completely neglected as a marketing tool. (1) Design is viewed and used as a minor tactical tool. (2) Design is used as a major strategic tool in the marketing mix. 2. To what extent is design thinking utilized in product development work? (0) Little or no design thinking goes into product development work. (1) Occasionally good design thinking goes into product development work. (2) Consistently good design thinking goes into product development work. 3. To what extent is design thinking utilized in environmental design work? (0) Little or no design thinking goes into environmental design work. (1) Occasionally good design thinking goes into environmental design work. (2) Consistently good design thinking goes into environmental design work. 4. To what extent is design thinking utilized in information design work? (0) Little or no design thinking goes into information design work. (1) Occasionally good design thinking goes into information design work. (2) Consistently good design thinking goes into information design work. 5. To what extent is design thinking utilized in corporate identity design work? (0) Little or no design thinking goes into corporate identity design work. (1) Occasionally good design thinking goes into corporate identity design work. (2) Consistently good design thinking goes into corporate design work.	1. What orientation does the design staff follow? (0) The design staff aims for high aesthetic ideals without surveying of the needs and wants of the marketplace. (1) The design staff designs what marketing or consumers ask for with little or no modification. (2) The design staff aims for design solutions that start with an awareness of consumer needs and preferences and adds a creative touch. 2. Does the design staff have adequate budget to carry out design analysis, planning and implementation? (0) The budget is insufficient even for production materials. (1) The budget is sufficient but typically cut back during hard times. (2) The design staff is well budgeted, especially on new product development projects. 3. Do managers encourage creative experimentation and design? (0) Creative experimentation and design are discouraged. (1) Designers are occasionally allowed creative freedom, but more typically they have to design within tight specifications. (2) Designers have creative freedom within the limits of project parameters. 4. Do designers have a close working relationship with people in marketing, sales, engineering and research? (0) No. (1) Somewhat. (2) Yes. 5. Are designers held accountable for their work through positive evaluation, measurement and feedback? (0) No. (1) Designers are accountable for cost overruns in the production process. (2) Design work is evaluated and full feedback is given to the designers.

A more structured and methodical approach for assessing design and design management capabilities has been developed by the Design Council in collaboration with the Design in Business Organization, called *Design Atlas: A Tool for auditing design capability* (Design Council, 1999). Design Atlas is developed as a generic audit tool to help organizations review design capability and identify opportunities for improvement. Although it is specified as a tool for auditing design capability within organizations, the framework also covers significant activities and skills that are integral to design management, such as design planning, design organization or

resources and culture for design. The audit framework (Table 4.6) assesses design capability based on 5 major dimensions: *planning for design*, *processes for design*, *resources for design*, *people for design* and *culture for design*. Each dimension further consists of 2 to 5 items, with a total of 15 items, and detailed questions provided to appraise the issues under each. The audit framework and summary questions for each item are indicated in Table 4.6. Additionally, the framework provides assistance regarding how to evaluate the findings by presenting a 4 level maturity grid. The maturity grid includes short descriptions for the 4 assessment levels under each item, as well as short descriptions regarding evidence that could be gathered to help determine the level of capability revealed by the organization. In this respect, it is significantly more detailed in comparison to the previously reviewed tools and frameworks, in addition to providing considerable guidance regarding how to carry out the audit and how to evaluate the results.

Table 4.5 : Self-assessment of design management skills (Dickson et al., 1995).

Basic Skills	
Designing quality into products.	1-2-3-4-5
Designing manufacturability into products.	1-2-3-4-5
Designing low cost into products.	1-2-3-4-5
Designing and launching new products faster.	1-2-3-4-5
Specialized Skills	
Using the latest computer aided design tools effectively	1-2-3-4-5
Estimating the true cost of new products during the design process.	1-2-3-4-5
Finding people with excellent design skills.	1-2-3-4-5
Testing manufacturability of new products during the design process.	1-2-3-4-5
Involving Others	
Involving customers in the design process.	1-2-3-4-5
Involving suppliers in the design process.	1-2-3-4-5
Getting new product ideas from customers.	1-2-3-4-5
Organizational Change	
Changing traditional ways of doing things.	1-2-3-4-5
Getting different functions in the firm to work together.	1-2-3-4-5
Replacing sequential with concurrent design.	1-2-3-4-5
Innovation Skills	
Finding new design ideas - not just me-too imitations.	1-2-3-4-5
Quickly becoming aware of competitors' innovations and imitations.	1-2-3-4-5

On the other hand, Moultrie et al. (2005) have developed a comprehensive design audit tool for evaluating design performance in SMEs. Yet instead of taking a more managerial or strategic perspective like the aforementioned tools, their design audit particularly focuses on assessing design performance in the context of individual design projects. Their major aim was to generate “a useful and usable tool to support managers in improving both products and the design process that delivers them” (p. 204). The audit is designed as two components. The first part consists of a *process audit tool*, which comprises of 24 different activities that are related to the execution of a design project in the context of NPD. The activities, which are grouped under 5 major dimensions of requirements capture, concept design,

implementation, project generation, and project management, are assessed based on a process maturity scale with 4 levels.

Table 4.6 : The Design Atlas audit framework (Design Council, 1999).

	Level 1	Level 2	Level 3	Level 4
Planning for design				
<i>General planning awareness</i> How effective is the business at planning across all its activities?				
<i>General planning communication</i> Are plans and objectives communicated clearly to all relevant company staff?				
<i>Design planning awareness</i> Does the business understand where design fits within its overall corporate plans?				
<i>Design planning thinking</i> What use is made of structured thinking in developing design plans?				
<i>Design planning horizons</i> How focused and forward thinking are design plans?				
Processes for design				
<i>General process awareness</i> Is their understanding of how activities can be identified as processes?				
<i>Design process awareness</i> Does the business understand where design fits within its processes?				
<i>Design process management</i> Does the business understand how design activity can be managed?				
<i>Design process tools</i> What use is made of structured thinking in design activity?				
Resources for design				
<i>General resource allocation</i> Does the business understand the general principles of budget allocation				
<i>Design resource allocation</i> Is the business able to assign resources to design activity?				
People for design				
<i>Design skills</i> Does the business have the skills to handle design activity?				
<i>Design organisation</i> Does the business accommodate the multi-disciplinary nature of design activity?				
Culture for design				
<i>Design commitment</i> How committed are senior management to design activity?				
<i>Design attitudes</i> How positive are attitudes to design?				

The second part of their audit is developed as a *product audit tool* that denotes the “elements of “good design” from a product perspective” (Moultrie et al. 2005, p. 194). It consists of 7 components, core benefits, engineering quality, product usability, product desirability, product producibility, product profitability, and product novelty and differentiation, which are further broken down into detailed criteria. The assessment is made based on a semantic difference scale that aims to capture subjective perceptions concerning products. The tool is highly structured and useful to enable evaluation of the effectiveness of design projects and their outcomes, but as indicated, it is not intended for the assessment of design management capabilities.

A different tool is provided by the Danish Design Centre (DDC) named *The Design Ladder* (DDC, 2001). It is suggested “as a tool for rating a company's use of design” (DDC, 2001, p. 1) and illustrates the increasing degree of design integration or design maturity inside businesses, again in four steps (Figure 4.4).

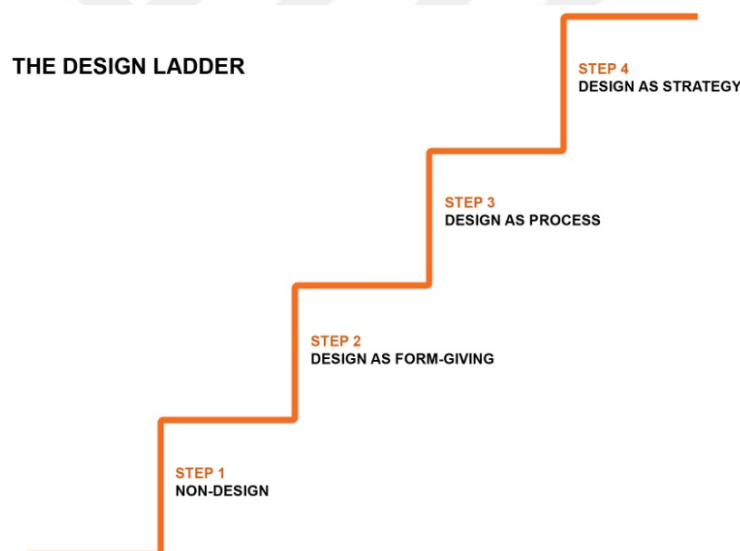


Figure 4.4 : The design ladder (DDC, 2001).

In The Design Ladder, Step 1 is indicated as *Non-Design*, and similar to the silent design notion introduced by Gorb and Dumas (1987), this step describes design as being invisible and being performed by non-designers. Step 2 refers to *Design as Form-giving* or styling, where design is applied only as a final touch and is not included from the start of product development or other design projects. Step 3, referred to as *Design as Process*, indicates that design is an approach that is integrated to the development process at an early stage and points to a higher level of collaboration and integration with other business functions and processes. Finally, Step 4 denotes Design as Strategy, implying that the design process is linked to

company's strategic goals and future visions, contributing to the rethinking of its business concept and future business areas.

Although The Design Ladder provides a descriptive tool for characterizing a company's use of design, its use is fairly limited because it does not provide any indication regarding the activities, skills and capabilities that form the basis for an increasing design integration inside the company. Neither does it offer any criteria for determining which step a company is on the ladder. In this sense, it is functional more as "a communicative model for illustrating the variation in companies' use of design" (DDC, 2001, p. 2) rather than a tool that businesses can use to assess their design capabilities.

A similar tool called *Design Management Staircase* (Figure 4.5) has been developed by Kootstra (2009) based on the Design Ladder. Whereas the Design Ladder focuses on illustrating a firm's capability with respect to design use, the Design Management Staircase centers on assessing a company's design management capability. Another difference is that while using a four tier model similar to the Design Ladder, the Design Management Staircase further characterizes each tier based on five factors, in order to provide more detail and specificity. As Figure 4.5 indicates, awareness, planning, resources, expertise and process constitute the five factors that were identified based on literature as indicators of good design management. Additionally, these factors are observed to be very similar to the five dimensions used by the Design Atlas (See Table 4.6). Again in a similar manner to the Design Atlas, each factor comprises three or four questions, with a total of 18 questions devised for the tool. Altogether these factors are used to define a company's design management capability. Awareness refers to a company's awareness about the benefits and potential value of design and design management; planning denotes the existence of a design strategy and planning for design; resources imply all human, physical and capital resources allocated to design; process indicates the extent of design management processes; and expertise points to the quality and proficiency of the staff, as well as the nature of tools and methods used. The model is supplemented with a design management maturity grid that briefly describes the four levels of capability with respect to each of the five capability factors.

Similar to the Design Ladder, Design Management Staircase takes on a maturity based approach, but applies it to the management of design, with each step indicating a higher level of design management maturity. As companies advance in the stairs, from no design management to design management as project; then to

design management as function; and finally to design management as culture, the strategic importance of design in the organization increases (Kootstra, 2009). In this respect, Design Management Staircase provides a combination of the Design Ladder model, with the detailed assessment methodology offered by the Design Atlas.

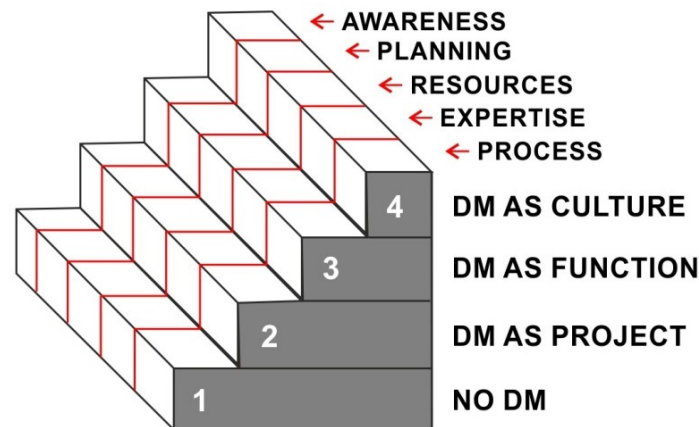


Figure 4.5 : Design Management Staircase (Kootstra, 2009).

In addition to the reviewed tools and frameworks that are largely generic, there are also some tools and frameworks, which are developed taking into consideration the characteristics of particular national contexts, such as those of Heskett and Liu (2012) (Figure 4.6) and Storvang et al. (2014) (Figure 4.7).

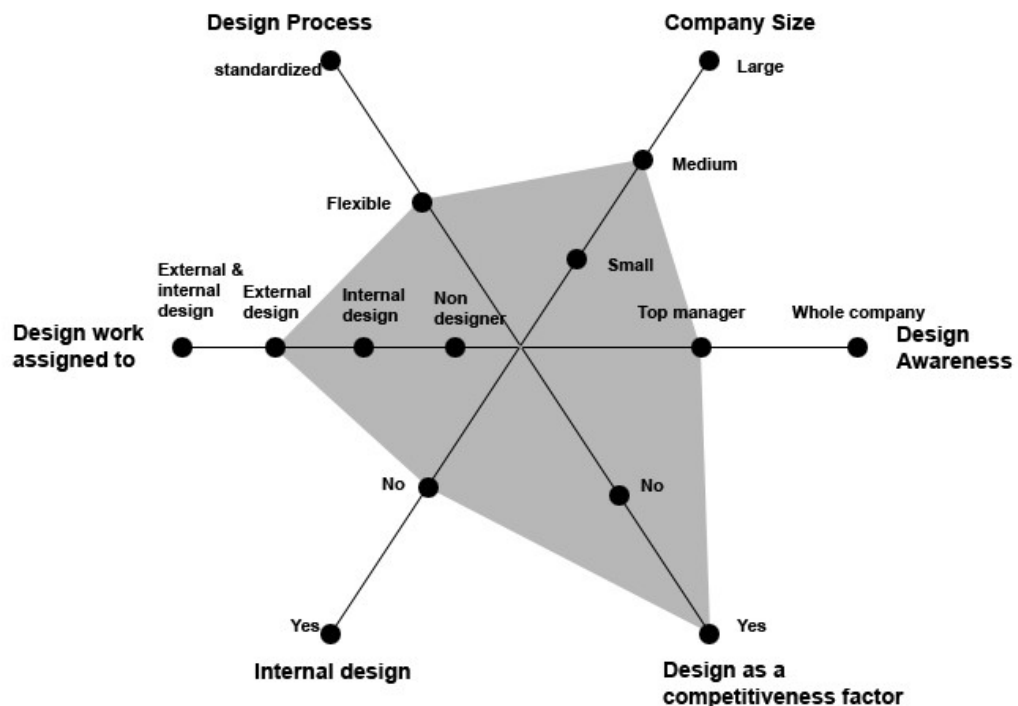


Figure 4.6 : Representation of a company's design capacity (Heskett & Liu, 2012).

Heskett and Liu (2012) suggest a model for *design capacity* in the Chinese context, based on an explorative study, which aimed to “describe the situation of design management in Chinese companies” (p. 226). Making use of a large scale questionnaire conducted in the context of Chinese manufacturing industry, they have identified six criteria for evaluating performance on design management practices. The six criteria are: design awareness, internal design, external design, company size, design process and design as competitiveness. A company’s design capacity is then represented based on these dimensions using a spider web diagram as presented in Figure 4.6.

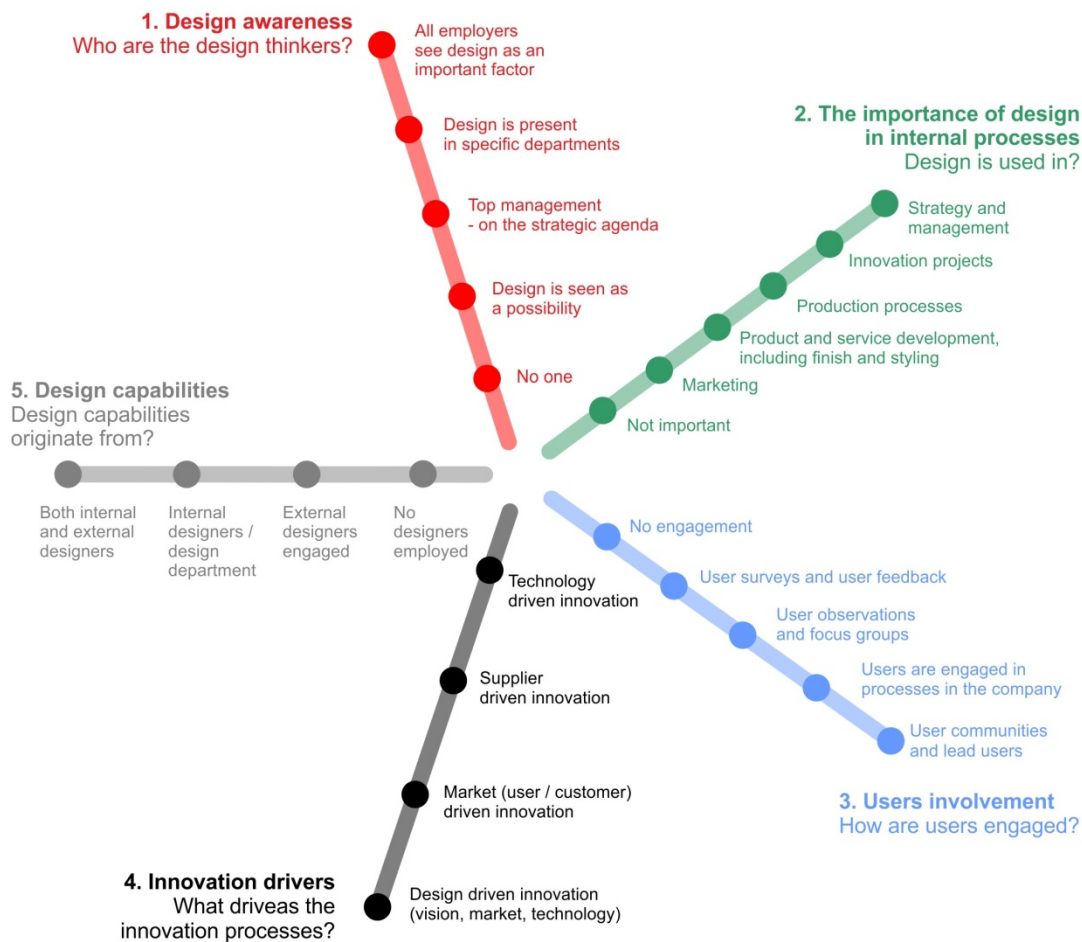


Figure 4.7 : Design Capacity Model (Storvang et al., 2014).

Storvang et al. (2014) have built on Heskett and Liu’s (2012) model to match it to the Danish context. *The Design Capacity Model* (Figure 4.7) is suggested by Storvang et al. (2014) as “a framework for company’s design management capacity” (p. 9), in other words, “a framework for analyzing and describing the way companies organize and manage design” (p. 20). Their framework is based on 5 dimensions to “measure how well equipped the company is to bring design into play to support its innovation efforts” (p. 12). These are defined as: design awareness, design’s importance in

internal processes, user engagement, innovation drivers and design capabilities. Similar to Heskett and Liu (2012), these dimensions are used to represent “design practice and capacity currently embedded in the companies” (p. 17), also in the form of spider web diagrams. The model is proposed as a tool for identifying company’s design management practice and to compare it with other companies, as well as a tool to form the basis for design capacity improvement (Design to Innovate, 2014). However, in addition to being less generic compared to Design Atlas and Design Management Staircase frameworks, the design capacity models are also more basic and provide an instant and more superficial snapshot about a company’s design management capacity.

Having reviewed a wide range of tools and frameworks for assessing design and its management inside organizations, the following section presents the Design Management Audit Framework that was developed in the theoretical part of this thesis, in order to constitute the basis for the research carried out in the empirical phase of the study.

4.9 Synthesis: Development of a New Design Management Audit Framework

As have been reviewed in the preceding section, several tools and frameworks have been developed, in order to outline and assess design and design management capabilities of organizations.

Among these, except for the design audit of Moultrie et al. (2005) and the Design Ladder by the Danish Design Center (2001), which specifically focus on company’s design use, all the other tools either completely target design management capabilities, as in the case of Design Management Effectiveness Audit by Kotler and Rath (1984), Design Management Staircase by Kootstra (2009) and Design Capacity models by Heskett and Liu (2012) and Storvang et al. (2014); or encompass important dimensions regarding design management, as in the case of Design Atlas (Design Council, 1999). Some are in the form of short self-assessment questionnaires such as Design Management Effectiveness Audit (Kotler & Rath, 1984), and design skills assessment tool (Dickson et al., 1995), some are more visual and aim to provide an instant characterization of design management without much concern for a detailed evaluation, such as Design Capacity models by Heskett and Liu (2012) and Storvang et al. (2014). Yet others are more structured and comprehensive, such as the Design Atlas and Design Management Staircase, allowing for an extensive and systematic review of design and design management

capabilities. However, a closer look reveals that they are found missing in several respects:

First and foremost of all, as reviewed throughout this chapter, the design management field has evolved from being concerned solely with the organization and management of design projects and corporate wide design activities, to include more upstream activities, skills and responsibilities that emphasize the integration of design strategies and processes with organizational goals and business strategy (Best, 2006; Blaich & Blaich, 1993; Chung & Kim, 2011; Cooper & Junginger, 2011; Er, 2005; Turner, 2013). Recent literature highlights the role of design in leading and shaping company strategy, conceiving new or improved business models and visions, and eventually in driving organizational change and renewal (Buchanan, 2008; Borja de Mozota, 2003b; Deserti & Rizzo, 2013; Junginger, 2008; Lee & Evans, 2012; Lockwood, 2011; Ravasi & Lojacono, 2005; Smith, 2008). Strategic level tasks under design management are increasingly coming to the fore as necessary steps that must be effectively carried out, before the identification and administration of design resources, projects or processes. Although this is the current picture, existing tools and frameworks are somewhat lacking to provide a satisfactory approach to frame and evaluate design management capabilities that specifically focus on establishing the link between the business context, organizational goals, and company strategies, and the way design is organized, managed and utilized inside organizations. Therefore, the briefly reviewed outlook in design, strategy and design management literature provide the grounds to suggest that tools and frameworks regarding the assessment of design management capabilities need to be updated in the light of new perspectives and research that have emerged over the last decade, in order to better evaluate the integration of design with organizational objectives and strategy, as well as to accommodate the increasing role of design in the strategy formation processes.

Secondly, although the literature highlights attaining a higher level of design integration inside the organization among the most critical conditions for effective design management (Borja de Mozota, 2003b; Bruce & Bessant, 2001; Dumas & Mintzberg, 1989; Stevens et al., 2009; Topalian, 1990; Turner, 2013), existing tools and frameworks do not provide a way to evaluate design integration inside organizations, such as design's level of coordination and communication with other business functions and processes; the extent of design activities carried out in different fields, or the level of coordination and coherence between design activities in different domains.

Thirdly, in the current business context the significance of creativity and knowledge creation has long been established. This in turn underlines knowledge creation, integration of outside knowledge and organizational learning as extremely critical capabilities for businesses in the generation of competitive advantages. In chapter 3, a detailed review had already been provided concerning strategy literature, together with a discussion on how design and design management capabilities are connected to integral streams of literature inside the RBV, such as the knowledge based perspective and the literature on organizational learning. It was underlined that from the perspective of these approaches, design management emerges as the administration of design as a learning process; a fundamental capability for organizational knowledge creation (Nonaka and Takeuchi, 1995); and a dynamic capability (Teece et al., 1997) that renews and reconfigures design capabilities, "regenerating both the products and the company" (Borja de Mozota, 2003, p.160). Yet existing tools and frameworks do not provide any dimension concerning how outside knowledge is acquired and integrated in the context of design, for example through processes such as design research, or the establishment of idea and information networks. Neither do they provide a way to review how design and design management capabilities are advanced and renewed inside the organizations, which are highly significant capabilities in connection to organizational learning.

These constitute the major gaps identified, together with other more minor, but nonetheless significant skills and activities that must be included to undertake a comprehensive evaluation of design management capabilities inside a business. Below is a summary listing of the identified gaps in existing tools for auditing design management capabilities:

- Whether/how organizations integrate design with the wider business context, organizational goals and strategies.
- Whether/how designers, design managers or design consultancies provide input to strategy making processes taking place within the organization.
- Whether/how organizations integrate design with other processes, business functions and their strategies, and ensure their effective coordination and communication.
- Whether/how organizations ensure the coordination of design activities undertaken in different areas.

- Whether/how organizations provide training and learning mediums for design employees.
- Whether/how organizations integrate outside knowledge through activities such as design research, and the establishment and sustenance of information and idea networks.
- Whether/how organizations evaluate design projects as well as the contribution of design to the overall organization.
- Whether/how organizations protect their design based intellectual rights.

Therefore, as an answer to the 3rd major research question of the theoretical part of this research, which was stated as: *How can design management capabilities be assessed with an up to date consideration of design management, and particularly incorporating design management capabilities at the strategic level?*, a comprehensive *Design Management Audit Framework* is developed, based on the analysis of existing tools and frameworks, as well as an extensive review and integration of the literature in design, design management and strategic management.

The review of audit tools revealed that they followed largely similar principles, structures and dimensions, with the assessment process mostly following a 4 level maturity model. However, Design Atlas (Design Council, 1999) audit tool is observed to provide the most systematic, clear and established methodology in terms of both the audit and the assessment process. So it was decided to be taken as a guiding framework in the development of the *Design Management Audit Framework*.

Table 4.7 summarizes the major dimensions and skills included inside the reviewed audit tools, as well as inside frameworks from design management literature that provide a categorization for responsibilities, capabilities and issues that are central to managing design. In the table, the cells in yellow indicate significant design management dimensions and capabilities that either are not included or that do not have a correspondence inside the Design Atlas.

These dimensions and skills are integrated to the new dimensions proposed by the developed *Design Management Audit Framework*, which is presented in Table 4.8 in its brief version. The extended version of the framework is provided in Appendix A.

Table 4.7 : A Comparative analysis of major dimensions in existing design management audit tools and frameworks.

Design Atlas		Design Management Staircase (Kootstra, 2009)		Cooper and Press, 1995 (A Design Management Matrix of Issues to Address) p.226	
Planning for Design	General Planning Awareness	Planning	Design Plans and Objectives	Planning Design	Strategy
	General Planning Communication		Using Consumer Information (Investigating Consumer Needs)		Policy
	Design Planning Awareness		Using Competitor Information (Investigating Competition)	Organizing Design	Process Planning (Programmes and Procedures)
	Design Planning Thinking		Level of Coordination		People and Structures, Culture and Climate
Processes for Design	Design Planning Horizons	Process	Place and Role of design		Investment and Finance
	General Process Awareness		Design Evaluation	Implementation and Monitoring	Training and Learning
	Design Process Awareness		Design Process Steps		Documentation and Communication
	Design Process Management			Evaluation	Programmes and Projects
Resources for Design	Design Process Tools	Resources	Areas of Design		Evaluating design
	General Resource Allocation		Design Resources Allocation, Management Responsibility for Design, Fostering a Design Culture		
People for Design	Design Resource Allocation	Expertise	Design Capability		
	Design Skills		Design Selection, Methods and Tools		
Culture for Design	Design Organization	Awareness	Benefits of Design		
	Design Commitment		Benefits of Design Management		
Design Attitudes					

Borja de Mozota, 2003 (Design Management Checklist)	Jevnaker, 1998 (Building up Organizational Capabilities in Design)	Dickson et al. (1995) in Chiva and Alegre (2007,2009)	Blaich and Blaich, 1993 (The Tasks of Design Management)
Strategy	Design Strategic Capability 5	Basic Skills	Contributing to Corporate Strategic Goals
Planning	Combinative Capability 2		
Structure, Human Resources, Project Management	Resourcing Capability 1		
Finances		Specialized Skills	
Information, Communication	Organizational Learning Capability 3		Managing the Design Process
	Innovation Capability 4		
Evaluation		Involving Others	
R&D	Protection Capability of Design Based Advantages 6		Managing Design Resources
Branding		Organizational Change	
		Innovation Skills	
			Cultivating an Information and Idea Network

Table 4.8 : Design Management Audit Framework.

Key Capability Categories	Major Questions
Design in Strategy	
Strategy Formulation Process	How effective is the business in strategy formulation? How are strategies formulated in the organization?
Strategic (Business) Planning Process	How effective is the business in planning its activities? Are strategies turned into business plans? How is the planning process carried out?
Strategy and Planning Communication	Are business strategies, goals and plans communicated effectively within the organization?
Design in Strategy	Is design included in strategy formulation? How is design positioned inside business strategy and objectives? Is there a defined design strategy?
Design's Input to Strategy Formulation	Is there any form of design/designer/design thinking input in the strategy formulation process? Do design managers or designers contribute to the shaping of business strategy and design objectives?
Planning for Design	
Design Planning	Does the business carry out design planning? If yes, how is this done; what types of evaluation and objectives guide the design planning process?
Design Planning Horizons	How far into the future does the organization think when planning for design?
Design Policy and Principles	Is there a formal/established corporate design policy or major notions that guide design? Are there defined design principles?
Investments for Design	
General Budget Allocation	Does the business carry out its budget allocation in a structured manner?
Design Budget Allocation	Does the business allocate budgets to design activity? If yes how are decisions regarding design budgets made? Does the business utilize any methods to guide design budget allocation decisions?
Design Processes	
General Process Awareness	Does the business identify its activities as processes?
Design Process Awareness	Are design processes recognized and defined inside the organization and in connection with other processes? (ex: design in NPD, marketing, corporate communications)
Design Process Management	Does the business have structured processes for design project management and monitoring? (Time plans, review meetings, documentation, brief formats, cost monitoring)
Design Process Thinking, Methods & Tools	How do design projects/activities proceed? Are structured methods, techniques and tools utilized during design processes? (Research, Concept generation, Design development, decision making tools, evaluation of concepts)
Legal Processes for Design	Does the business ensure the legal protection of design based intellectual rights? How is this process managed?
Design Evaluation Processes	Are there structured procedures for evaluating design? (both pre-launch and post-launch, the success of design projects, the contribution of design to profitability, ROI, effectiveness in market)
Design Organization	
Design Management Responsibility	Does the business have an assigned management responsibility for design?
Design Skills	Does the business have the necessary skills to carry out design activities? Does the business have a design function? Does it utilize outsourced design capabilities?
Organizing for Design	Does the business effectively organize its (in house and/or outsourced) design activities?
Research for Design	
Design Research Programs and Resources	Does the organization carry out design research activities or utilize resources to inform design? (user needs and requirements, market research, user research, demographic and social trends, future trends, lifestyle research, technology, competitors)
Information and Idea Networks	Are there established information and idea networks for design?
Training and Development for Design	
General Training and Development	Does the organization carry out training and development programs for its employees?
Nurturing Skills and Creativity of Design Related Personnel	How does the organization nurture the skills, knowledge and creativity of design related personnel/in-house design staff?

Table 4.8 (continued) : Design Management Audit Framework.

Key Capability Categories	Major Questions
Design Integration	
Coordination and Communication with Other Business Functions, Strategies and Processes	Are there effective structures and processes for communication and coordination between design and other business functions?
Role and Place of Design	Which processes does design contribute throughout the organization? When does design get involved in these processes? When do design processes start?
Breadth of Design (Design Activities Undertaken in Different Areas)	What are different design activities undertaken throughout the organization?
Coherence and Coordination Between Different Areas of Design	If design is undertaken in different design fields, is there coordination and coherence between design activities undertaken in different areas?
Culture and Climate for Design	
Design Awareness & Understanding of Senior Management	Do senior managers have a broad understanding and awareness about how design contributes to the organization?
Design Commitment of Senior Management	How committed are senior managers to design?
Design Attitudes of Employees	How positive are the attitudes to design among the employees?
Environment for Creativity	Is there an environment supporting creativity? Do managers encourage creative experimentation and design?

Design Management Audit Framework consists of 9 major dimensions, in other words capability categories (see Table 4.8), which altogether define a company's design management capability. These are: Design in Strategy, Planning for Design, Investments for Design, Design Processes, Design Organization, Research for Design, Training and Development for Design, Design Integration, and Culture for Design. Each capability category further comprises of 2 to 6 items that represent the most significant activities or skills under each category, generating a total of 31 items for reviewing design and design management capabilities inside an organization. The 5 categories of Planning for Design, Investments for Design, Design Processes, Design Organization, and Culture for Design, largely overlap with the dimensions included in the Design Atlas (Design Council, 1999) and Design Management Staircase (Kootstra, 2009) frameworks and constitute the more typical and acknowledged dimensions under design management. Yet the other 4 categories and the respective items under each are devised to address the aforementioned gaps and are proposed as significant skills and activities that must be included inside an up to date and comprehensive design management system. What follows is a detailed explanation for the 9 dimensions included in the *Design Management Audit Framework*.

Design in Strategy: This capability category addresses the extent to which there is an alignment between organizational goals, business strategies and the way an organization organizes, manages and utilizes design. It is a novel dimension which

aims to understand the interaction between strategy and design as a two way process, and aspires to review if and how a company's strategy influences design management processes and design activities, whether the business includes design as part of its strategy formulation process, as well as how design, designers and design managers contribute to the shaping of business strategies and decisions. It is composed of 5 items, which are: Strategy Formulation Process, Strategic Planning Process, Strategy and Planning Communication, Design in Strategy, and Design's Input to Strategy Formulation.

Planning for Design: This category focuses on reviewing the level and effectiveness of design planning activities that take place inside an organization. It is a major category that is part of both the Design Atlas and the Design Management Staircase frameworks. It is composed of 3 items: *Design Planning*, *Design Planning Horizons* and *Design Policy and Principles*. *Design Planning* examines if and how the business carries out any planning, specifically regarding its design activities; and the types of information and techniques that guide the design planning process. *Design Planning Horizons* question how long term into the future the business considers and plans for design. *Design Policy and Principles* appraise the existence of a formal design policy or any other established notions and design principles that guide design activities inside the business.

Investments for Design: This category concentrates on the overall budget allocation processes that are carried out inside the business and appraises whether and how budgets are allocated to design activities. It is based on the Resources for Design category of the Design Atlas audit tool (Design Council, 1999) and similarly, it consists of 2 items: *General Budget Allocation* and *Design Budget Allocation*. While *General Budget Allocation* examines the procedures the organization utilizes in assigning budgets to different business functions and activities, *Design Budget Allocation* focuses on understanding how the business assigns budgets to design projects and resources; and whether it uses any structured tools to allocate budgets and track their paybacks and risks.

Design Processes: This category appraises the effectiveness of design and design management processes that are carried inside the organization. It is a common dimension that is included both inside the Design Atlas (Design Council, 1999) and the Design Management Staircase (Kootstra, 2009). However, here it has been extended to include other important activities and skills such as the evaluation processes concerning design and the protection of design based intellectual property. It comprises 6 items: *General Process Awareness*, *Design Process*

Awareness, Design Process Thinking, Methods & Tools, Legal Processes for Design, and Design Evaluation Processes. *General Process Awareness* considers the level of recognition and establishment of business activities as processes. *Design Process Awareness* examines whether design activities are established as a recognized business process inside the business that is integrated with other major business processes like production or marketing. *Design Process Thinking, Methods & Tools* focuses on the level of structured thinking, and design methods and techniques utilized during design activities. *Legal Processes for Design* appraises the existence of any legal protection regarding design based intellectual property rights and how this process is managed. Finally, *Design Evaluation Processes* examine the way the outcome of design activities are evaluated inside the organization and how design decisions are given, both prior to launch during design and development, and after launch an overall evaluation of the success of design projects.

Design Organization: This category focuses on how design activities are organized inside the business and the people and structures that are available. It has similar items to that of the People for Design dimension of the Design Atlas (Design Council, 1999) and the Expertise dimension of the Design Management Staircase (Kootstra, 2009). Yet, here it has been extended to include the assignment of a management responsibility for design. It covers 3 items: *Design Management Responsibility*, *Design Skills* and *Organizing for Design*. *Design Management Responsibility* questions the degree of formalization of management responsibility for design; if and how design management responsibility is assigned and carried out inside the business. *Design Skills* examines if the business has necessary skills to undertake design activities and the extent of in-house or external design skills it has access to. *Organizing for Design* appraises the effectiveness of the organizational activities directed at design such as the selection of designers and teams, or the organization of necessary meetings to bring together the contributions of different parties at appropriate points during design activities.

Research for Design: This category concentrates on the extent of research and analysis activities undertaken to be fed into the design process. It is a novel category that aims to underline and evaluate how outside knowledge is acquired and integrated into design activities and thinking inside the organization. It consists of 2 items: *Design Research Programs and Resources*, and *Information and Idea Networks*. *Design Research Programs and Resources* examines if and how the organization carries out research activities and utilizes different resources to inform

design; it considers activities such as user research, research into needs and requirements, market trends and competitors and the wider demographic, social and technological developments. *Information and Idea Networks* assesses if the organization focuses on establishing networks with institutions, designers, educators or other sources in order to acquire new information and ideas.

Training and Development for Design: This category addresses the extent of training and development activities carried out by the business to ensure the continual development of its design and design management capabilities. It is a novel category that aspires to evaluate the extent of continual learning and development dimension in the management of design. It includes 2 items: *General Training and Development* and *Nurturing Skills and Creativity of Design Related Personnel*. While *General Training and Development* questions the existence of any training and learning programs for general skill development throughout the organization, *Nurturing Skills and Creativity of Design Related Personnel* focuses on evaluating whether and how the business nurtures the skills, knowledge and creativity of designers and design managers.

Design Integration: This category appraises the level of design integration achieved inside the business. It is a novel category that aims to address the degree of design integration in two main ways as: the integration of design within the organization with respect to other business functions and processes; and the integration of design with respect to design activities undertaken in different design disciplines. It is composed of 4 items which are: *Coordination and Communication with Other Business Functions, Strategies and Processes*; *Role and Place of Design*; *Breadth of Design*; and *Coherence and Coordination between Different Areas of Design*. *Coordination and Communication with Other Business Functions, Strategies and Processes* examines the existence of effective structures to ensure design's coordination with the various business functions and processes throughout the organization. *Role and Place of Design* appraises the contribution and role of design in different processes inside the business and when design gets involved inside these processes, such as from the initial phases of planning and idea generation or in the later phases as a finishing touch. *Breadth of Design* addresses the breadth of design activities undertaken in different disciplines and *Coherence and Coordination between Different Areas of Design* explores the level of focus in establishing a coherent strategy, approach and language between activities in different design disciplines.

Culture and Climate for Design: This is the final category, which focuses on understanding whether the organization has managed to create a supportive organizational culture and climate for design. It is similar to the Culture for Design dimension of the Design Atlas (Design Council, 1999) and the Awareness dimension of the Design Management Staircase (Kootstra, 2009). However, here the category is extended to include the organization's more general focus on the generation of an environment for creativity. The category includes 4 items: *Design Awareness & Understanding*, *Design Commitment*, *Design Attitudes* and *Environment for Creativity*. *Design Awareness & Understanding* explores senior manager's awareness and understanding regarding how design can contribute to the organization. *Design Commitment* examines the commitment senior managers demonstrate concerning design activities and decisions. *Design Attitudes* addresses the existence of positive and supportive attitudes to design among the company staff. *Environment for Creativity* appraises the organization's focus on the formation of a supportive medium and structures for creativity, novelty and experimentation.

Assessment Scale

Additionally, as part of the *Design Management Audit Framework*, an assessment scale is developed based on the process maturity principle, in the form of a 4 level maturity grid, similar to the approach utilized by the Design Atlas (Design Council, 1999), Design Management Staircase (Kootstra, 2009) and the design audit developed by Moultrie et al. (2006). Maturity grids are widely utilized assessment tools inside management audits (Crosby, 1980; Moultrie et al., 2006).

In order to evaluate the level of maturity attained in a certain activity or skill, maturity grids describe the typical behaviors demonstrated by an organization at each level of development, progressing from the lowest level of maturity to the highest. This way, they provide an effective way to summarize the progression of behaviors towards successful practices, as well as indicating an outline for how to improve performance (Moultrie et al., 2006).

Table 4.9 presents the assessment scale developed for the capability category *Design in Strategy*, in the form of a maturity grid, whereas the maturity grid for the overall audit framework is provided in Appendix A, Table A.2.

The resulting *Design Management Audit Framework* contributed to the overall thesis study in 2 main spheres, firstly by providing an answer to the third major research question of the theoretical phase, and secondly, by establishing the research

framework, interview questions as well as the assessment scale that is utilized in the empirical phase of the research.

Table 4.9 : Assessment scale of the *Design Management Audit Framework* for the capability category *Design in Strategy*.

	Level 1	Level 2	Level 3	Level 4
Strategy Formulation Process	There is no strategy formulation process.	Strategy understood as setting a few conventional performance targets without the formulation and evaluation of strategic options, no clear, guiding strategic visions.	Business strategies are developed, however with a limited analysis of internal & external factors and strategic options, and the process is not regular and structured.	Business strategies are developed through a structured process, and a detailed analysis of internal and external factors (trends, technology) and promising strategic options.
Strategic (Business) Planning Process	There is no business planning process.	Planning is carried out in a limited and unstructured way in a few business areas/functional departments.	Business strategies are turned into detailed business plans in several business areas/functional departments.	Business strategies are turned into business plans through a detailed and structured planning process in all business areas/functional departments, planning is an organization-wide approach that drives the business.
Strategy and Planning Communication	Strategy and business goals and plans are known only by few key individuals.	Business strategies, goals and plans are communicated in an unstructured way to senior management.	Business strategies, goals and plans are communicated in a structured way to senior management but there are problems in their communication to lower levels.	Business strategies, goals and plans are communicated in a structured way, with all company staff receiving relevant information and being updated.
Design in Strategy	Design is not part of strategy formulation or business plans.	Design is sometimes articulated as part of strategies and business plans of other areas like marketing and new product development but as individual projects.	Design is integrated into company strategy and business plans, but under marketing or new product development strategy.	Design is part of company strategy and business plans with a clear design vision, objectives and planning for design, design strategy is linked to other business processes and corporate objectives in various areas.
Design's Input to Strategy Formulation	There is no input from design to strategy formulation or business planning.	Designers and design managers indirectly contribute to strategy and plans through their interaction with key individuals and senior managers.	Designers and/or design managers contribute to strategy and plans however in the lower levels of marketing strategy or design strategy formulation.	Design managers and/or design staff contribute to strategy formulation by taking part in the company's strategy formulation process through structured meetings and processes.

5. CERAMIC SANITARY WARE INDUSTRY

Ceramic sanitary ware sector is one of the oldest and most powerful industrial sectors of the Turkish economy, generating nearly 10% of the total world production of ceramic sanitary ware (Saatçioğlu, 2010). Together with the ceramic wall & floor tiles sector, it is one of the major sectors in Turkey, in terms of value added and in terms of its contribution to the national economy. Also, it is one of the least dependent sectors on imported goods, where the deployment of natural resources is the most. With exports amounting to 44% of total production, and Turkey being among top five global exporters of ceramic sanitary ware (T.C. Bilim Sanayi ve Teknoloji Bakanlığı, 2013), the sector has a significant place in national industrial development strategies.

Although ceramic sanitary ware industry is a relatively mature industry, the global market for sanitary ware is continuously growing due factors such as the growth of the real estate market, increasing population (especially in developing economies), increasing life standards, increasing spending on hygiene, and changing lifestyle and consumer preferences. These conditions are not only increasing demand, but also necessitating a growing focus on design and innovation, for the creation of products that keep up with emerging lifestyles and trends in commercial, social and environmental contexts. Additionally, competition in the industry is intensifying as more and more manufacturers from emerging economies are establishing their presence in world markets and causing rapid changes in the competitive landscape. Consequently, in order to maintain and improve the global market share of the Turkish ceramic sanitary ware industry, sustaining and enhancing the competitiveness of this industry is extremely significant².

As in the case of many mature industries, design and innovation are extremely critical factors that play a paramount role in increasing the value added to ceramic

² According to the Turkish Ceramic Sector Strategy and Action Plan (2012-2016) prepared by the Turkish Ministry of Science Technology and Industry, the vision for this sector is "to enhance the image of the sector and to increase its global market share". In the report, two main strategies to reach this vision are established as: "increasing quality and efficiency" and "sustaining and enhancing commercial and competitive conditions both in the domestic and international markets". T.C. Bilim Teknoloji ve Sanayi Bakanlığı, Türkiye Seramik Sektörü Strateji Belgesi ve Eylem Planı (2012-2016).

sanitary ware products, and hence in the competitiveness of the sector as a whole. Therefore effective design and design management are highly significant capabilities for ceramic sanitary ware companies in the creation of sustainable competitive advantages.

This chapter starts with a short overview of ceramic sanitary ware, products classified under this term and their production processes. It continues with an evaluation of the world ceramic sanitary ware sector with its key characteristics and strategic outlook. Then, it focuses on the Turkish ceramic sanitary ware industry and its importance for the Turkish economy; examining its history, current state, and position in world markets. The chapter ends with a review of the significance of design and design management capabilities for the sector and our current knowledge regarding their existing state.

5.1 Ceramic Sanitary Ware

Ceramic sanitary ware sector is classified under the larger ceramics sector, which is composed of the sub-sectors: wall and floor tiles, sanitary ware, bricks and roof tiles, tableware and ornamental ware, refractory products, vitrified clay pipes, and technical ceramics.

Ceramic sanitary ware is the generic name for ceramic sanitary products used in baths, toilets and kitchens, such as ceramic washbasins, sinks, toilets, bidets, washbasin pedestals, water closet pans, shower trays, bathtubs, flushing cisterns, urinals and other similar ceramic sanitary fixtures.

Ceramics are generally characterized by their high strength, chemical inertness and durability. Additionally, characteristics, such as corrosion resistance, abrasion resistance, ease of cleaning and glossy surfaces, render ceramic the most preferred solution - almost irreplaceable - among other alternatives, such as those made of steel or fiber, for the sanitary ware requirements in residential, commercial, and public areas.

The production of ceramic sanitary ware is mainly dependent on natural minerals, such as kaolin, feldspar, ball clay, and quartz. These minerals are mixed with other nonmetallic materials and water, to form a fluid mixture, which is then shaped by being poured into molds made of plaster or synthetic resin. The molds are then dried in large kilns. After the molds are cooled and the products are removed from the molds, they undergo a surface treatment process called glazing. Through the glazing process, the products are given the desired surface finish and rendered

impermeable to water. Subsequent to glazing, the products are subjected to a second heating process at temperatures that range between 1200-1250 °C, which finalizes the production of vitrified ceramic sanitary ware.

Two major characteristics of ceramic sanitary ware production is that it is both labor and energy intensive; the drying and firing processes at high temperatures require considerable energy inputs. Additionally, in order to increase efficiency, firms have to invest heavily in automation technologies to perform tasks that would otherwise be performed in much longer times by labor.

5.2 World Ceramic Sanitary Ware Sector

The ceramic sanitary market is driven majorly by the growth in the construction and renovation sectors. Together with increasing population - specifically in developing countries of the world -, increasing standards of living, and growth of the real estate industry, the world production of ceramic sanitary ware has shown a continuous increase since the 1990s. Although 2000s have witnessed a slowdown, the increasing trend is observed to continue, and the world ceramic sanitary ware market is estimated to show a compound annual growth rate³ (CAGR) of 10.1% between 2014 and 2019 (MarketsandMarkets, 2015).

In 2005, the world production of ceramic sanitary ware had been reported as approximately 200 million pieces/year and was projected to reach 229 million pieces/year in 2008 (Kafalı, 2005). However, due to problems regarding the availability of data, existence of different coding systems for manufactured goods and difficulties regarding identifying ceramic sanitary ware products and accessories, there are inconsistencies between data provided by different sources.

Currently, the total ceramic sanitary ware sales are estimated to have reached 400 million pieces/year (BSRIA, 2015). In its *Global Overview Analysis Report* of May 2015, the UK-based market intelligence firm BSRIA indicates the estimated ceramic sanitary ware sales between years 2011-2019 as shown in Figure 5.1. As can be observed from the figure, the market is expected to show a steady growth of nearly 10% a year.

The sector is dominated by global manufacturers, where the top 10 performers altogether supply nearly 3/4ths of the total production (T.C. Bilim Sanayi ve

³ The Compound Annual Growth Rate (CAGR) is the average annual growth rate of an investment over a specified period longer than one year.

Teknoloji Bakanlığı, 2015). Today, China has become the largest producer of ceramic sanitary ware, with a share of 47% in world exports; and followed by Brazil, Mexico and Turkey (International Trade Centre [ITC], 2015; T.C. Bilim Sanayi ve Teknoloji Bakanlığı, 2013). In addition to China, the steady growth in the production capacities of India and Thailand has rendered Asia-Pacific, the largest region in world ceramic sanitary ware production. Due to its high growth rates, Asia-Pacific is expected to sustain its dominance in world markets (MarketsandMarkets, 2015). After Asia-Pacific, Europe is the second largest region in the production of ceramic sanitary ware, with an output of 50 million pieces/year and the major producers being Italy, Spain, Turkey, France, Germany and United Kingdom. China leads the Asian market in terms of production of sanitary ware, whereas Turkey is the largest sanitary ware producer in Europe in terms of volume (ECORYS, 2008).

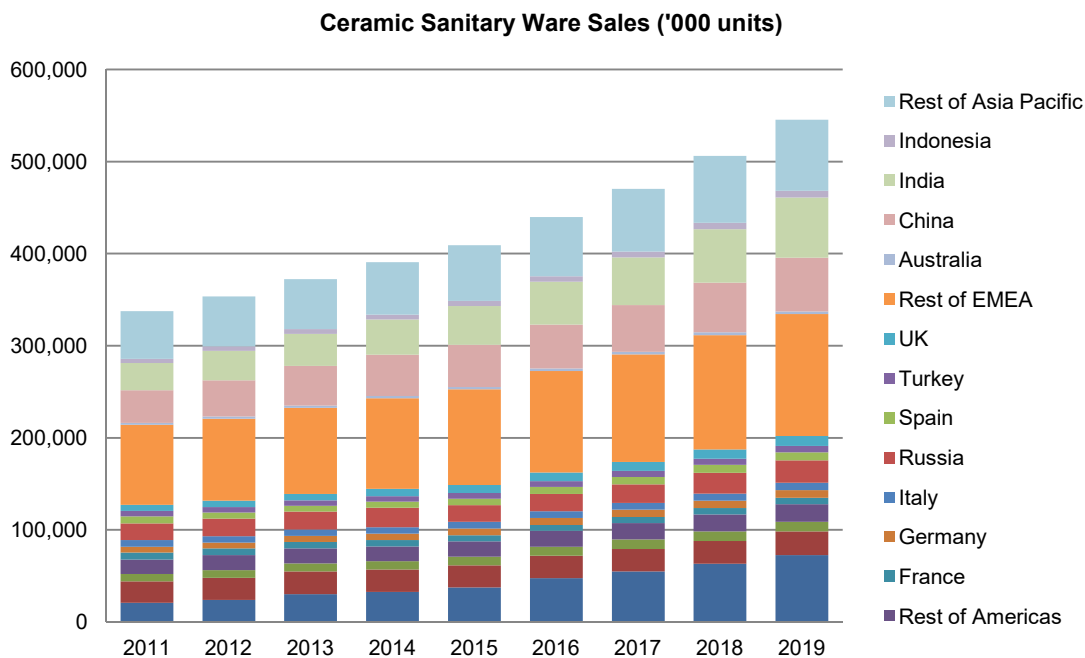


Figure 5.1 : World Ceramic Sanitary Ware Sales (BSRIA, 2015).

A key characteristic of the sector is the apparent difference in the competitive strategies of firms from developed economies, especially the European Union, and those based in emerging markets. While Asian producers like China, Thailand and India are observed to compete mostly on price, European manufacturers compete on added value and focus on high quality, design, differentiation and branding.

Italy and Spain are the leading countries with respect to the creation of products with high quality, uniqueness, innovation and design, where Spain concentrates more specifically on technology (ECORYS, 2008; Kafalı, 2005; T.C. Bilim Sanayi ve Teknoloji Bakanlığı, 2015). Again, Spain and Italy lead the way with regards to the

supply of technology and machinery used in the production of ceramic sanitary ware, such as glazing and molding technologies (ECORYS, 2008).

Throughout the world, large manufacturers specifically focus on increasing their competitive advantage, both through branding and attaining higher levels of production efficiency. This in turn increases the barriers to entry for newcomers, especially for those that wish to concentrate on higher segment products. On the other hand, many local SMEs are gradually forced to function as sub-contractors, except for the SMEs in Italy, where the ceramic sanitary ware industry is dominated by highly innovative SMEs that have formed a large cluster in Civita Castellana district in the province of Viterbo, near Rome. These SMEs pursue differentiated production and marketing strategies and focus on providing high quality, high value added products to niche markets (ECORYS, 2008).

The leading players of the world ceramic sanitary ware industry are indicated as: Ideal Standard (USA); Roca Group (Spain); Toto (Japan); Sanitec (Finland); Kohler Group (USA); Villeroy & Boch (Germany); Cisa (Chili); Duratex (Brazil); Eczacıbaşı Vitra (Turkey); Duravit (Germany). Multinational producers, such as Ideal Standard, Kohler, Roca, Sanitec and Toto, have rapidly moved into developing markets, with the objective of answering the needs of their fast growing domestic markets, as well as taking advantage of low production costs to make their production facilities in these countries hubs for international trade (T.C. Bilim Sanayi ve Teknoloji Bakanlığı, 2013).

Despite the dominance of the global market by these strong multinational producers, large manufacturers from countries such as Mexico, Portugal and Turkey, have managed to become significant export centers in their own region, owing to factors such as geographical advantages, low production costs due to low labor and energy prices, easy access to raw materials, and the development of skilled labor.

The world exports of ceramic sanitary ware has shown a 14% annual growth in value between 2010 and 2014, which is reported as 23% between 2013 and 2014 (ITC, 2015). Table 5.1 shows top 10 exporters of ceramic sanitary ware, with regards to the value of goods (in thousand USD), as well as their respective shares in world exports. On the other hand, Table 5.2 indicates world's top 10 exporters with regards to quantity (in tons). As can be observed from these tables, rankings can change significantly when analyzed in terms of value and quantity. For instance, although Italy is not among the top 10 performers in terms of export quantity (see Table 5.2), it ranks as the 4th in terms of the value of exports (see Table 5.1).

Similarly, while Germany ranks as the 9th in world exports with respect to quantity (see Table 5.2), it is the 3rd with respect to the value of exported goods (see Table 5.1). In 2014, the unit value of exports for Italy and Germany has been 6,528 USD/tons and 6,331 USD/tons, whereas it was only 2,503 USD/tons and 1,713 USD/tons for China and Mexico (ITC, 2015). This is due to the value based competitive strategies followed by the European manufacturers, in contrast to the price and quantity based strategies of manufacturers from emerging economies. As indicated by The European Ceramic Industry Association, Cerame-Unie, contrary to emerging economies, "The European ceramic sanitaryware industry is focused on high quality products which are tailored to the specific requirements of end consumers and are accompanied by excellent pre- and post-sales services" (Cerame-Unie, 2010).

Coming to the imports of ceramic sanitary ware, USA, Germany, United Kingdom, Iran and France constitute the first five largest import markets, with respectively 15.8%, 5.7%, 5.5%, 5.4% and 4.8% of share in world imports, followed by United Arab Emirates, Canada, Saudi Arabia, Spain and Australia (Table 5.3). The key characteristics of the world ceramic sanitary ware sector can be summarized as:

- High energy and labor intensiveness.
- Reliance of demand on construction and renovation sectors.
- Dominance of the market by large global manufacturers.
- Increasing competition (mostly price based) coming from emerging economies.
- Transportation problems due to the high weight of products.

According to ECORYS (2008), the major conditions that have a significant potential impact on the competitiveness of the ceramic sectors are indicated as:

- Environmental regulations regarding energy use (CO₂ emissions), pollution prevention and waste;
- Energy cost and availability;
- Intellectual property right issues;
- Knowledge and innovation;
- Globalization (low-priced imports) and trade barriers (EU access to third countries).

Table 5.1 : First 10 countries with respect to exports of ceramic sanitary ware in value, Unit: USD Thousand (ITC, 2015).

Exporters	Exported value in 2010	% in value in world's exports, 2010	Exported value in 2011	% in value in world's exports, 2011	Exported value in 2012	% in value in world's exports, 2012	Exported value in 2013	% in value in world's exports, 2013	Exported value in 2014	% in value in world's exports, 2014
China	778974	19.3	845721	19.4	933769	21.3	1986486	35.6	3205025	47.2
Mexico	399219	9.9	374662	8.6	419231	9.6	467748	8.4	474497	7
Germany	366183	9.1	409383	9.4	373604	8.5	366352	6.6	365470	5.4
Italy	277985	6.9	308776	7.1	277647	6.3	303521	5.4	270665	4
Turkey	156909	3.9	178537	4.1	186893	4.3	203237	3.6	221995	3.3
Thailand	117176	2.9	134242	3.1	139560	3.2	174954	3.1	176160	2.6
Portugal	141275	3.5	130209	3	136442	3.1	144989	2.6	162429	2.4
Poland	125738	3.1	137507	3.2	123408	2.8	146107	2.6	142211	2.1
USA	119099	2.9	127588	2.9	119074	2.7	116991	2.1	118590	1.7
Spain	126537	3.1	145051	3.3	127140	2.9	130862	2.3	117019	1.7

Table 5.2 : First 10 countries with respect to exports of ceramic sanitary ware in quantity, Unit: Tons (ITC, 2015).

Exporters	Exported quantity in 2010 (Tons)	Exported quantity in 2011 (Tons)	Exported quantity in 2012 (Tons)	Exported quantity in 2013 (Tons)	Exported quantity in 2014 (Tons)
Malaysia	8028	11487	11044	11577	1431317
China	901966	958540	918746	1015420	1280271
Mexico	226569	245964	237957	268503	276985
Turkey	94494	101643	113559	119792	125440
India	15080	90615	118224	134261	119524
Portugal	75069	65833	72102	69517	78360
Thailand	57189	58714	56977	68106	75793
Poland	67580	70344	66730	71176	69384
Germany	63571	68340	66850	56585	58149
Bulgaria	40564	47966	51920	53096	55721

Table 5.3 : First 10 countries with respect to imports of ceramic sanitary ware in value, Unit: USD Thousand (ITC, 2015).

Importers	Imported value in 2010	% in value in world's imports, 2010	Imported value in 2011	% in value in world's imports, 2011	Imported value in 2012	% in value in world's imports, 2012	Imported value in 2013	% in value in world's imports, 2013	Imported value in 2014	% in value in world's imports, 2014
USA	843637	16.9	812584	15.4	897461	16.9	5310391	17.6	6059968	15.8
Germany	271175	5.9	314722	6.6	288517	5.9	1014712	6	1036808	5.7
United Kingdom	264721	5.9	299696	6.3	274818	5.7	315570	5.3	330768	5.5
Iran	14757	0.3	12638	0.3	5171	0.1	278736	1.9	328259	5.4
France	264814	5.9	311938	6.6	286447	6	98601	5.5	322956	4.8
United Arab Emirates	44716	1	50086	1.1	43640	0.9	288714	1.8	285482	3.8
Canada	218427	4.9	190564	4	221936	4.6	93520	4.1	225776	3.6
Saudi Arabia	48950	1.1	59755	1.3	78144	1.6	214622	1.6	217785	2.5
Spain	222113	5	158832	3.3	125084	2.6	84757	2.5	150977	2.5
Australia	80760	1.8	92089	1.9	94383	2	128598	1.9	149717	2.2

5.3 Turkish Ceramic Sanitary Ware Sector

5.3.1 A Short History

Ceramic production has a special place for the Anatolian culture, since in this region, the history of ceramics dates back thousands of years, up to 6000s B.C. (Kafalı, 2005). Having been shaped by many different civilizations that have habited the Anatolian region, Turkey has a rich history and far reaching traditions regarding the production of ceramics. Since the prehistoric Anatolian sculptures, many cultures such as Hitites, Seljuks and Ottomans have contributed to the evolution of ceramic arts and crafts.

Although it has a very rich culture in craft based ceramic pottery and tile production, in Turkey, industrial production of ceramics began only in 1942, with the establishment of a small workshop in İstanbul. The workshop initially focused on the production of ceramic tableware and ornaments. Yet it expanded rapidly due to high levels of domestic demand and in 1958, noticing the increasing demand for modern ceramic sanitary ware, the company decided to establish a new production facility in order to begin the production of ceramic sanitary ware.

As a result, in Turkey, industrialized production of ceramic sanitary ware started in 1958, with the establishment of the first ceramic sanitary ware plant through private investment, and a know-how agreement that was made with a major German ceramic sanitary manufacturer, Keramag (Er & Akay, 2001). This was a common pattern for many Turkish enterprises in their route towards industrialization. Being a late-industrialized country, from the late 1950s on, technology transfer from industrialized nations of the world, in the form of license and know-how agreements as well as joint venture investments, constituted the main source of industrial development in Turkey (Kepenek, 1990). Government led industrialization attempts had already begun during the 1930s, with the aim of instituting a self-reliant, national industrial capacity. In the course of planned industrialization, production plants were established initially through government led initiatives, and later through private investment, in order to manufacture products that otherwise had to be imported from industrialized nations. Similarly, this first manufacturing plant for ceramic sanitary ware was founded with the objective of substituting imported products through local industrial capacity.

At the time, the traditional Turkish market for sanitary ware was based on products made of marble and stone, and was dominated by squatting type toilets. Consequently ceramic sanitary ware was a complete novelty to the market, as well

as ceramic sanitary ware toilets to the Turkish culture. However due to its novelty and affordability, ceramic sanitary ware became increasingly popular. In this period, another important factor that played a significant role in the acceptance and mounting popularity of ceramic sanitary ware products, was Turkey's experience of modernization. The process of modernization, which had begun in the 19th century under the Ottoman Empire, had taken speed and a totally new approach, after the foundation of the Turkish Republic, in 1923. Together with a series of major reforms regarding political, legal, economic, cultural and social scenes, the country was also modernizing and Westernizing in terms of its visual scene (Er, 2009). In this sense, many novel, industrially manufactured goods, coming from Western markets, were eagerly accepted as expressions of modernity and constituted visual manifestations of a Westernizing society. Er (2009) indicates that "By the late 1950s, consumer products such as washing machines, refrigerators and cars were the symbols of modern life, and were in great demand by the upper middle classes in the growing cities" (p. 75). Similar to many other industrial products, "the bathroom suite with all its units was the imported product idea reflecting a Western/modern lifestyle scenario" (Er & Akay, 2001, p.6). Consequently, in addition to its apparent advantages in terms of hygiene, adaptability and affordability, ceramic sanitary ware was also effortlessly accepted by the Turkish society, as part of its encounter with the process of modernization.

As a result, the domestic demand for ceramic sanitary ware continuously increased. However, from 1960s up to 1980s, Turkish industrial development took place behind protective trade barriers, based on state's import substitution centered industrialization policies. And from its establishment, until the 1980s, there was a single manufacturer of ceramic sanitary ware (owned by the Eczacıbaşı Group), functioning inside a protected domestic market.

Yet, in the 1980s, major changes took place in the Turkish trade and investment policy regimes. Abandoning its domestic market oriented industrialization strategy, Turkey began to direct its focus towards export oriented industrial development. The new strategy was complemented with significant developments such as the liberalization of trade, removal of foreign exchange controls, government initiatives to support private investment and incentives to support foreign trade. As a result, Turkish industrial and market structure started to go through major transformations. New enterprises began to be established, creating and increasing competition in many sectors, including ceramic sanitary ware. In addition to supportive government strategies for private investment and foreign trade, the richness of Turkey in terms of

raw materials used in ceramics manufacturing, advantages of a qualified workforce, and geographical proximity to major markets facilitated a rapid development of the ceramic sanitary ware sector. So beginning with the 1980s, many other ceramic sanitary ware manufacturers began to be established in the industry.

In the 1990s, the sector went through important technology and capacity improvements that involved significant investments in latest production technologies and the establishment of new production lines (T.C. Bilim Sanayi ve Teknoloji Bakanlığı, 2015). As a result, between 1990 and 2009, the production capacity of the sector increased 5.3 times, raising from 59,400 tons to 305,000 tons (Saatçioğlu, 2010). In the same period, exports multiplied 5.9 times in quantity, boosting from 14,600 tons to 86,367 tons; and 7 times in value, increasing from 20,200,000 USD to 142,551,000 USD (Saatçioğlu, 2010). Currently there are around 40 manufacturers in the sector, out of which 9 are large scale enterprises, and Turkey is one of the prominent producers of ceramic sanitary ware in the world, with exports constituting nearly 44% of its total production (T.C. Bilim Sanayi ve Teknoloji Bakanlığı, 2013).

5.3.2 Characteristics of the Turkish ceramic sanitary ware sector

Ceramic sanitary ware sector is one of the biggest and most powerful sectors in Turkey both in terms of production capabilities and export amounts. Again, it is one of the oldest and fastest growing sectors of the Turkish industry (T.C. Bilim Sanayi ve Teknoloji Bakanlığı, 2015). Factors such as, high rates of utilization of local raw materials in ceramic sanitary ware production, low dependency on imported goods and high export amounts, make this sector a significant contributor to the Turkish economy, in terms of wealth creation, employment and economic growth. Consequently, the sector holds a noteworthy position inside national strategies concerning industrial development.

Turkey ranks as the 4th in world exports of ceramic sanitary ware in terms of quantity (See Table 5.2), and as the 5th in terms of value (See Table 5.1) (ITC, 2015; T.C. Bilim Sanayi ve Teknoloji Bakanlığı, 2015). In Europe, it ranks the 1st in terms of the quantity of exports; whereas in terms of the value of exported goods, it ranks as the 3rd, coming right after Italy and Germany (T.C. Bilim Sanayi ve Teknoloji Bakanlığı, 2015). In 2014, the value of Turkish ceramic sanitary ware exports amounted 221,995,000 USD and 125,440 tons, with a 9% annual growth in the value of exports recorded between 2010 and 2014 (ITC, 2015). Consequently,

international markets have a major place inside the business strategies of many Turkish ceramic sanitary ware manufacturers.

Germany, United Kingdom, Italy, France and United States of America constitute Turkey's major export markets for ceramic sanitary ware. In 2014, their respective shares in the value of Turkey's exports were recorded as 14.2%, 11.2%, 9.8%, 7.6% and 4.6% (See Table 5.4). Although Middle Eastern countries and Russia are also among the first 10 export markets, the European Union countries comprise the largest market for Turkish ceramic sanitary ware, mostly owing to their proximity. In 2014, 56.4 % of total exports were made to countries within the European Union, with similar export percentages (ranging between 54.9% to 63.2%) observed between the years 2010 and 2014 (ITC, 2015). In 2014, the average price of exports has been 1,770 USD/ton (ITC, 2015).

Table 5.4 : Turkey's major ceramic sanitary ware export markets and their share in the value of exports (ITC, 2015).

Importers	Share in value in Turkey's Exported, % in 2010	Share in value in Turkey's Exported, % in 2011	Share in value in Turkey's Exported, % in 2012	Share in value in Turkey's Exported, % in 2013	Share in value in Turkey's Exported, % in 2014
Germany	14	13.8	13.6	13.9	14.2
United Kingdom	10.9	9.9	9.4	8.8	11.2
Italy	11	11	8.9	9.9	9.8
France	10.8	10.8	10.2	8.7	7.6
United States of America	4.5	3.8	4.4	4.8	4.6
Iraq	4.2	5.7	6.8	5.4	4.1
Russian Federation	1.2	1.9	3.5	4.4	3.4
Israel	3.4	3.2	3.2	3.8	3.4
Azerbaijan	2.2	3.1	3	3.1	2.7
Libya	3.5	0.5	3.1	3.8	2

Besides having a considerable share in the global market, Turkey also has a large domestic market for ceramic sanitary ware, which has shown a rapid growth, especially since the 2000s. The growth is mostly due to factors such as increasing urbanization, increasing population, and the high ratio of young individuals with respect to the total population. Moreover, because of the high growth rates observed in the construction industry and increasing personal spending, domestic demand for sanitary ware is also expected to continue its growth in the coming years (T.C. Bilim Sanayi ve Teknoloji Bakanlığı, 2015).

A very large proportion of the domestic demand is satisfied by local products, with imports constituting only 1 % of total production (Saatçioğlu, 2010). Figure 5.2

indicates production, export, domestic consumption and import rates between years 2002 and 2010. As can be observed from the figure, compared to production and export quantities, ceramic sanitary ware imports constitute a negligible amount. The majority of imports come from Germany, China and Italy, followed by the Free Zones and the Russian Federation (ITC, 2015). Imports coming from Germany are mostly from Turkish companies, which have production facilities in Germany, whereas the majority of imports from the Free Zones come from a Turkish company located in the Kayseri Free Zone (Saatçioğlu, 2010). While imports from EU countries, as well as USA, have high unit values and are directed at high end and luxury markets, imports coming particularly from China are observed to compete on price and constitute a potential threat for the sector.

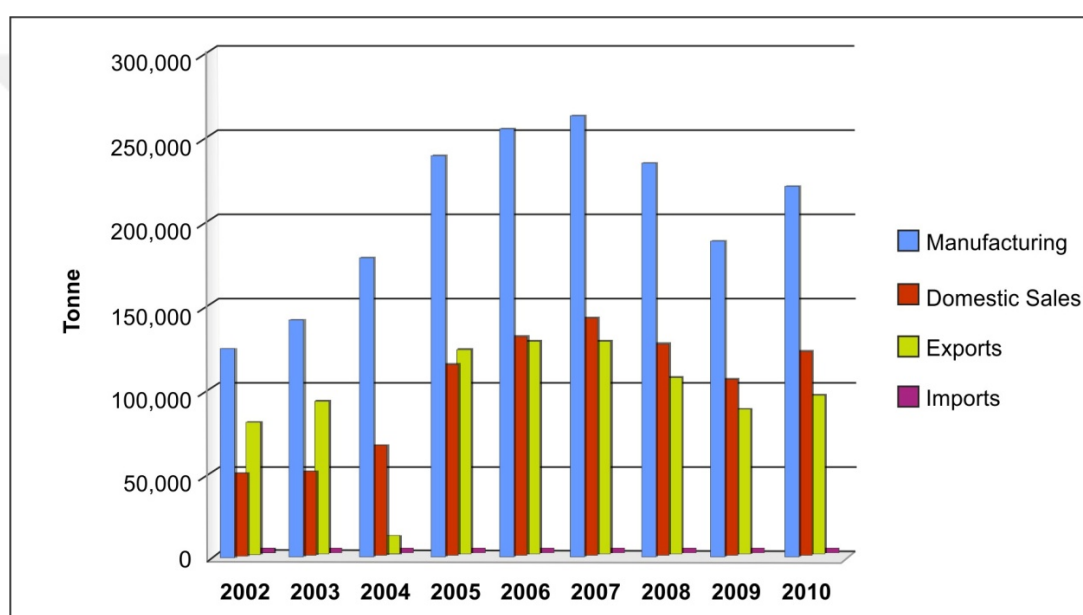


Figure 5.2 : Comparison of production, domestic consumption, export and import rates for the Turkish ceramic sanitary ware industry (Saatçioğlu, 2010).

In 2010, the production capacity of the sector was recorded by Turkish Ceramic Federation (TSF) as 310.000 tons, and total production as 220.000 tons. Currently, the sector consists of 9 large scale and 30 small and medium sized enterprises (SMEs) (T.C. Bilim Sanayi ve Teknoloji Bakanlığı, 2015). Manufacturers of ceramic sanitary ware are dispersed in different parts of Turkey, and are located in the cities of Çanakkale, Tekirdağ, İstanbul, Kocaeli, Sakarya, Bilecik, Eskişehir, Kütahya, Manisa, İzmir, Çorum, Zonguldak, Ordu, Kayseri and Diyarbakır. Figure 5.3 indicates the percentage of existing production capacities in different regions of Turkey. The major cluster is situated around Bozuyük-Eskişehir-Kütahya region, constituting 34.3 % of the national production capacity. Other manufacturers are located in the Middle Black Sea Region (Çorum, Ordu, Zonguldak) with 15.3 %

share, Aegean Region (İzmir, Manisa) with 14.1 % share, Central Anatolia Region (Kayseri) with 13 % share, Marmara Region (İstanbul, İzmit, Sakarya) with 12 % share, and Çanakkale Region (Çanakkale) with 11.2 % share (T.C. BİLİM SANAYİ VE TEKNOLOJİ BAKANLIĞI, 2015).

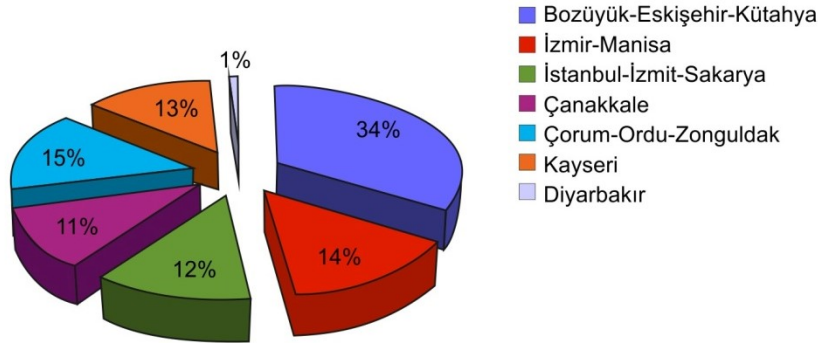


Figure 5.3 : Ceramic sanitary ware production capacities according to region (TSF as cited in T.C. Bilim Sanayi ve Teknoloji Bakanlığı, 2015).

The major players in the Turkish ceramic sanitary ware sector, with capacities of more than 1,000,000 pieces/year are:

- Eczacıbaşı Yapı Gereçleri, with its brand Vitra;
- Matel Serel Seramik, with its brand Serel;
- Kaleseramik, with its brand Kale Banyo;
- Ege Vitrifiye Sağlık Gereçleri, with its brand Ege Vitrifiye;
- Ece Banyo Gereçleri, with its brand Ece Banyo;
- Çanakçılar, with its brand Creavit;
- and Turkuaz Seramik, with the same brand name.

In 2011, a ceramic tile manufacturer named Bien Yapı Ürünleri entered the ceramic sanitary ware sector, and started operating under the brand name Bien. The company is observed to make continual investments in design, branding and marketing, in order to take its place among the major players. In addition to these large scale manufacturers, there are nearly 30 SMEs, which all together provide a wide range of products targeting both the domestic and global markets.

Based on several reports produced by the *Turkish State Planning Agency*, *Turkish Ministry of Science, Industry and Technology* and *Turkish Ceramic Federation* (Devlet Planlama Teşkilatı Müsteşarlığı, 2006; Saatçioğlu, 2010; T.C. Bilim Sanayi Ve Teknoloji Bakanlığı, 2013, 2015) the major advantages of the Turkish ceramic sanitary ware industry can be summarized as:

- a large domestic market,
- a large construction sector,
- a highly active residential sector stimulating continuous renovation activities,
- richness in raw materials used in ceramic sanitary ware production,
- production facilities with high production capacities which are very close to raw material reserves,
- up to date technologies,
- proximity to major export markets, such as the EU countries, as well as the Middle East,
- an educated and experienced workforce,
- much lower labor prices compared to European countries and other major export markets,
- having international standards and conformance to EU regulations,
- an increasing industry-university collaboration,
- increasing attention to design and branding activities,
- a strong NGO for ceramic manufacturers named TSF (Turkish Ceramic Federation) supporting the development of the sector,
- and a joint funding initiative to increase the image of Turkish ceramics in the world markets.

Again, some of the major problems of the Turkish ceramic sanitary ware sector are indicated as:

- high dependency on energy prices as a result of being an energy intensive industry, where energy expenses constitute nearly 30% of total costs,
- energy prices being more expensive than major competitors such as China, India, Mexico and Brazil,
- problems regarding the transportation of ceramic sanitary ware products, such as lack of transportation infrastructures, specifically railroad infrastructures, railroad to harbor transportation networks, and harbor service infrastructures,
- high costs of transportation due to the weight of products,

- underdevelopment of subsidiary industries, such as industries for ceramic sanitary molds, packaging and production machines,
- dependency on foreign countries for the technology,
- lack of adequate R&D activities,
- problems during on-site application of products due to a lack of certified training for the application of ceramic sanitary ware,
- instabilities regarding the value of Turkish Lira with respect to foreign currencies,
- difficulties in the establishment of distribution networks in target markets,
- image problems in global markets,
- low unit prices compared to important competitors in export markets despite the quality of products,
- inadequacies with respect to unique product designs and products following lifestyle trends in major global markets.

5.4 The Importance of Design Management Capabilities for the Ceramic Sanitary Ware Sector

Being a mature sector, new product development is central to the competitiveness of the ceramic sanitary ware industry. Consequently, innovation in design and innovation in product technology, are the two major paths followed by companies for the creation of novel, high value added products, where the most successful players of the industry have long been focusing on providing a combination of both design and technological innovation.

When we observe the prevailing trends in the industry, several factors can be detected that have gradually increased the importance of design capabilities for the sector. One of these developments is the growing consideration of ceramic sanitary ware products as lifestyle products (Transparency Market Research, n.d.). The bathroom concept is moving beyond just functionality and becoming an integral part of lifestyle choices and values, being associated with concepts such as wellbeing, comfort, health and fitness. These developments, as well as changes in consumer preferences, are directing the industry towards the creation of novel bathroom concepts and new luxury sanitary wares such as private spas, shower systems, and saunas, to name a few (Transparency Market Research, n.d.). Consequently,

innovative product designs that are shaped by lifestyle trends and emerging socio-cultural values are employed by the companies in a strategic manner in order to increase demand, improve customer preference and enhance brand image especially, in upper high end, high end and upper middle segments. In this context, design not only supports the growth of demand, and the creation and development of brand image, but also creates new markets and new application areas for ceramic sanitary ware products, as in the case of luxury sanitary wares and private spas.

Another important development is the movement of the industry towards a "total bathroom concept" (Laufen, 2010, p.2; VitroA, n.d., Corporate Profile), where sanitary ware, accessories and bathroom furniture are all considered in an integrated approach. This trend has expanded the more traditional product range to include a wide range of accessories and furniture that are combined with ceramic sanitary ware products. Inside the total bathroom approach, besides the generation of new concepts, and the creation of new product ideas, design plays a key role in establishing consistency between the family of products, offering a wide range of choices configurable according to the specific requirements of each bathroom space.

In addition to these more commercial trends and needs, many macro trends such as an aging population, the growing significance of sustainability concerns, issues of accessibility and disability are other key issues that are tackled by major players of the industry through the use of design and innovation capabilities (Roca, n.d., Innovation Lab, para. 4).

Besides its role in new product development and driving innovation, other major roles for design can be observed in the context of developing brand identity enhancing brand image, and corporate communications.

Furthermore, as have been pointed out in section 5.2, while manufacturers from emerging economies largely base their strategies on price competition, European manufacturers compete on added value. Consequently, design, product differentiation and branding are observed to play a paramount role in the value based strategies of these manufacturers from best performing nations, such as Italy and Germany. Design is integral to their NPD processes, as well as to their processes of branding, communication and customer experience management. ECORYS (2008) underlines that through the importance given to design capabilities, these companies specialize in creating high quality products that are differentiated from low-cost alternatives on the basis of uniqueness, creativity and innovation.

Owing to their value based competitive strategies supported by design and branding, European manufacturers, especially those from Italy and Germany, are observed to keep their unit prices much higher than manufacturers in other parts of the world. To indicate the difference that can be attained through effective design, innovation and branding, in 2014, the unit value of exports for Italy and Germany has been recorded as 6,528 USD/tons and 6,331 USD/tons, whereas it was only 2,503 USD/tons and 1,713 USD/tons for China and Mexico (ITC, 2015).

Similar to many other emerging economies, although Turkey ranks as the 4th in world exports of ceramic sanitary ware in terms of quantity, and as the 5th in terms of the value of exports, it competes on the global market with very low unit prices. Among the top 20 exporters in value, in 2014, Turkey ranked as the 18th in unit prices (See Figure 5.4), with the average price of exports being 1,770 USD/tons (ITC, 2015).

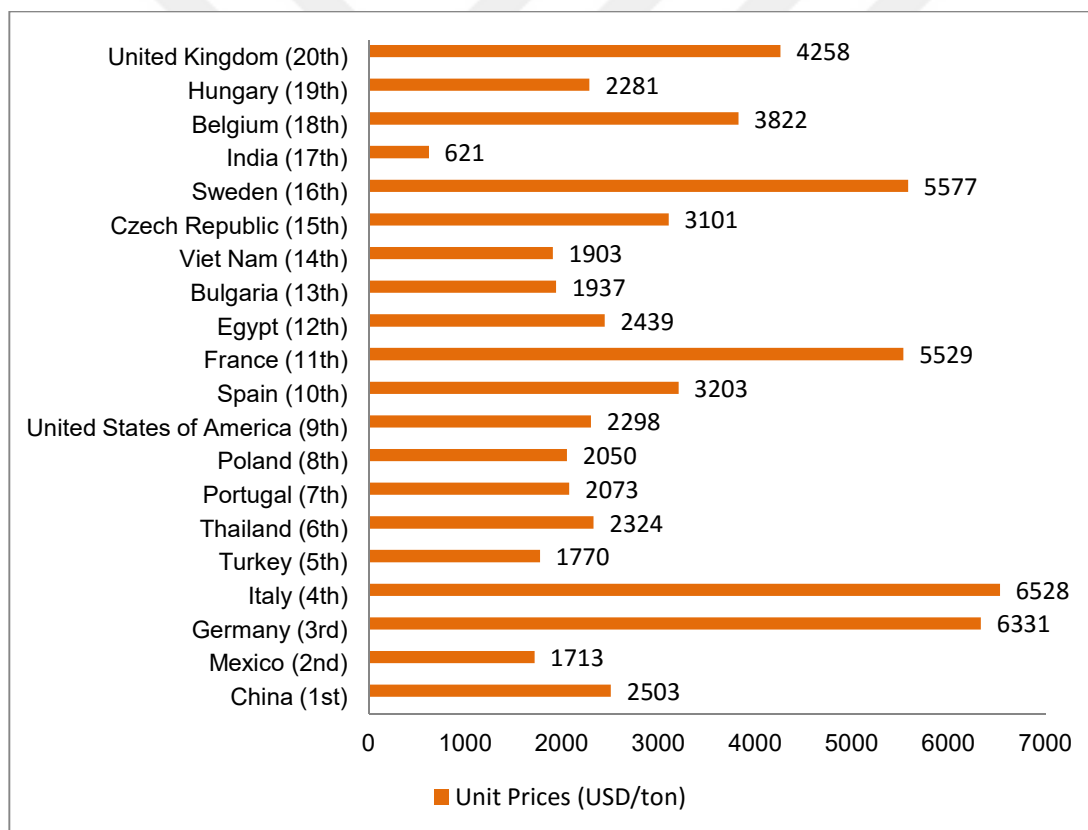


Figure 5.4 : Unit prices of first 20 exporters in terms of the value of exports of ceramic sanitary ware in 2014 (ITC, 2015).

Despite the quality of its products, having low unit prices in comparison to major competitors in the global market is one of the major weaknesses of the Turkish ceramic sanitary ware industry (Devlet Planlama Teşkilatı Müsteşarlığı, n.d.). Other weaknesses are indicated as being inadequate in the generation of unique

product designs and incompetency in the creation of products that follow emerging trends (Devlet Planlama Teşkilatı Müsteşarlığı, n.d.). Indeed these two issues are closely related, as can be observed from the design and branding based competitive strategies of European manufacturers and the resulting high unit prices they can set in global markets. These facts clearly reveal the significance of improving design and design management capabilities inside the Turkish ceramic sanitary ware industry, in order to overcome the aforementioned weaknesses and to increase the industry's competitiveness.

Similarly, *9th Development Plan for the Ceramic Sanitary Ware Industry* prepared by the State Planning Agency, points out the importance of design capabilities for the Turkish ceramic sanitary ware sector (Devlet Planlama Teşkilatı Müsteşarlığı, n.d.). Intensification of design activities that focus on new use areas and applications; concentrating on unique product designs that are tailored for high end markets; and the generation of high value added products that are shaped by emerging trends are among the major strategies identified by the report. All these strategies necessitate effective design and design management capabilities, once again underlining their crucial value for the sector.

5.5 Design and Design Management in the Turkish Ceramic Sanitary Ware Industry

With mounting evidence on the positive relationship between effective design and business performance, we see that all over the world, an increasing number of firms are beginning to concentrate on design, either acquiring design capabilities or focusing on the development of their existing design skills (Brown, 2009; Martin, 2009; Luchs & Swan, 2011.) With a slight delay, the increase in the utilization of design by firms from major developed nations of the world can also be observed in firms from developing economies. This is also evident in the Turkish industry, where we witness an increase in the design consciousness and design utilization in Turkish firms from various scales and industries, especially since the beginning of 2000s.

Design had already entered the agenda of the Turkish industry somewhat intensely in the mid 90s, together with increased liberalization of the domestic market, government strategies focusing on export led industrial growth, and customs union agreement established with the European Union. Following these major developments, design began to be vital for Turkish companies, primarily to be able to survive in the domestic market against increasing foreign competition, and

moreover to be able to compete successfully in export markets (Er, 2009). These factors initiated the acquisition and development of design and design management capabilities initially inside the major large scale firms of the industry. As a result, throughout the years many large scale companies improved their design and design management capabilities in an evolutionary manner, and lately some of them began to integrate design into their corporate strategies, making a transfer from the operational use of design to its strategic use. Er (2009) indicates that important large scale Turkish firms such as Arçelik, Beko, Vestel, and Eczacıbaşı Vitra were the first to transfer from OEM (Original Equipment Manufacturing) to ODM (Original Design Manufacturing) based export in the 1990s, and presently, they have included design as part of their differentiation strategies moving from ODM to OBM (Original Brand Manufacturing). This path has also been followed by other large scale companies and some medium sized companies in the Turkish industry.

Especially after the 2001 Crisis, more and more Turkish firms began to utilize design as a major strategic tool in their brand and market development efforts, as they increasingly moved to OBM based exports. Boztepe (2008) draws on case studies of Turkish companies from different industries such as automotive, electronics, glassware, textiles and ceramics, to analyze and discuss the role of design is in their competitive advantage. She concludes that design has been instrumental for Turkish companies to successfully compete against global players in their home market, in addition to penetrate successfully into world markets.

Analyzing the development of industrial design in Turkey, Er (2009) identifies the period after the 2001 Crisis as the *Take-off Phase* for industrial design. In this phase, in addition to major large scale companies, we also observe an increase in the design consciousness and the utilization of design inside many Turkish SMEs (Er, 2009). Therefore, especially in the second half of 2000s, Turkish companies are noticed to concentrate on improving their design and design management capabilities, making substantial efforts to align their design activities with corporate strategies. Er et al. (2010) point out that in an increasingly globalizing market and inside the context of international competition, design is currently a fundamental competitive factor for the Turkish industry and will continue to be so in the future. As outlined in the previous section, this point is even more critical for companies inside the Turkish ceramic sanitary ware industry.

Ceramic sanitary ware industry, is a mature industry, which is design oriented in nature. However until the 1980s, inside a protected domestic market and with a single producer of ceramic sanitary ware, design capabilities were almost

nonexistent in this industry. For a long time, the only manufacturer of the industry, Eczacıbaşı Group with its Vitra brand, continued the production of ceramic sanitary ware based on product designs provided by foreign manufacturers, by purchasing of their production rights through license agreements (Er & Akay, 2001; Topaloglu & Er, 2010; 2011). Yet, as mentioned in section 5.3.1, in the 1980's, major changes took place in the Turkish economy; the market was opened to foreign competition and domestic market oriented industrialization strategy was replaced with export based industrial growth. Additionally, together with government initiatives targeted at supporting private investment, new ceramic sanitary ware manufacturers began to be established in the sector. These changes also initiated significant developments towards the acquisition of design and design management capabilities throughout the industry, since more and more companies realized that designing new product ranges tailored to market needs was a necessary means both to compete in this new market environment and to be able to enter into new export markets.

Especially in mid 1990's, further developments like Customs Union Agreement with the European Union and the amendment of Intellectual Property Rights Law in 1995, are observed to be influential in the development of design capabilities. In this period, the sector is also seen to realize a fast paced growth in terms of capacity, production and export amounts (Kafalı, 2005).

Yet together with 2000s, design and design management capabilities started receiving a heightened attention inside the sector. This trend was initiated by the major player of the industry, Eczacıbaşı Vitra. After the mid 2000s, the company set off a major strategic renewal process that was strongly integrated with its increasing branding efforts. The company utilized design as a major driving tool inside this strategic renewal process, beginning with the integration of design into its corporate strategy and engaging in subsequent processes such as the use of design to renew its brand identity and image; re-organization of the design function; restructuring of design management responsibilities; intensification of design activities carried out in different areas; and the planning of design projects in the light of long term organizational goals (Topaloglu & Er, 2010; 2011). This trend towards the development of strategic capabilities in the management of design as well as an intensified design use targeted at brand development is seen to be followed by other companies in the industry in varying degrees.

Today, especially the major players of the industry like Eczacıbaşı Vitra, Kale Banyo, Serel Seramik, as well as followers such as Creavit and Bien Seramik are noticed to have enhanced their design and design management capabilities, taking

major steps for the integration of design with their corporate strategies in various areas such as marketing, corporate communications and sustainability. In addition to these large scale players, SMEs of the sector are also seen to be improving their design and design management processes, making a long overdue transfer from the replication of foreign products to the development of their own product designs, through the use of both in-house or outsourced design capabilities (Devlet Planlama Teşkilatı Müsteşarlığı, n.d.).

5.6 Summary

World ceramic sanitary ware market is constantly growing owing to factors such as increasing global population, increasing urbanization - especially in developing economies of the world -, increasing life standards, increasing spending on hygiene, and changing lifestyles and consumer preferences. Moreover, together with the rising number of ceramic sanitary ware manufacturers being established in emerging markets, the competitive landscape is rapidly shifting and the industry is facing increasing competition coming from price based strategies of emerging economies.

Ceramic sector is one of the strongest industrial sectors in Turkey, with significant contributions to the national economy. In addition to the existence of a large and growing domestic market for ceramic sanitary ware, Turkey has an important place in the global market, ranking as the 4th in the quantity of world ceramic sanitary ware exports and the 5th in the value of exported goods. However, when evaluated with respect to the unit prices of exported ceramic sanitary ware, Turkey is among the countries with lowest unit prices. This is one of the major weaknesses of the Turkish ceramic sanitary ware industry (Devlet Planlama Teşkilatı Müsteşarlığı, n.d.). Consequently, despite the use of latest technologies, advantages with regards to raw materials and the high quality of products, Turkey has long been competing in the global market with price based strategies. Inadequacies with respect to design capabilities, incompetence in generating unique product designs, lack of innovations, ineptitude in the creation of products following lifestyle trends in major global markets, as well as the low image of Turkish products in foreign markets are among significant weaknesses of the sector, identified in several reports prepared by both sectoral and governmental institutions.

On the other hand, in contrast to Turkey and many other emerging economies, European sanitary ware industry is keeping up with the price focused competition coming from emerging economies based on the factors of quality, design,

innovation, and branding. Whereas quality is increasingly becoming standardized in the industry due to the accessibility of up to date production technologies, design and innovation capabilities are neither easily accessible nor imitable, as they are highly tacit, based on knowledge as well as organizational culture, and require long periods of development to reach maturity. These characteristics render design and design management capabilities critical strategic resources for ceramic sanitary ware manufacturers all throughout the world. However, based on the above mentioned weaknesses of the Turkish ceramic sanitary ware industry, it is argued that the development of design and design management capabilities are especially crucial for Turkish manufacturers, in order to establish a competitive advantage over emerging economies by being major capabilities that can enable them to compete through added value and branding.





6. RESEARCH METHODOLOGY

This chapter outlines the research approach and strategy used in this study, the motivations behind choosing the research approach, as well as details regarding the research design. The case study approach was chosen as a particularly fitting research strategy in order to examine design management capabilities in the context of the Turkish ceramic sanitary ware industry and to explore how organizations link their design activities with business strategy and organizational goals, through their existing design management skills.

As the design management field is part of the social sciences and is specifically concerned with studying human behavior relating to design inside organizational contexts, this chapter initially introduces and discusses fundamental considerations regarding social research. It then continues with the the rationale for the choice of case study as the research strategy. Next, the chapter reviews the use of case study strategy as a research tool, factors to be taken into account in case study designs and discusses both practical and theoretical challenges related to case study research. Finally, the chapter explains how the research was undertaken, detailing the research design, the selection of cases, techniques utilized in data collection, as well as techniques utilized throughout the data analysis stage.

6.1 Major Considerations Regarding the Research Approach

Design management covers business processes, decisions and strategies that facilitate the generation of effective design outcomes, which aim to improve the quality of life, as well as to enhance business performance (Design Management Institute, n.d.). As a result, design management field is at the intersection of design and business studies inclining more towards the “business side of design” (Design Management Institute, n.d.). This situates it inside the larger field of social sciences.

Social science is “the science of people or collections of people, such as groups, firms, societies, or economies, and their individual or collective behaviors” (Bhattacharjee, 2012 p. 1-2). It studies human behavior and includes disciplines such as sociology, psychology, economics, political sciences, management and organizational studies, to name a few. In contrast to natural sciences, which are much more “precise accurate, deterministic, and independent of the person making

the scientific observations”, social sciences “tend to be less accurate, deterministic, or unambiguous” (Bhattacharjee, 2012, p. 1-2). This fundamental difference between natural and social sciences concerning the nature of the investigated subjects, brings out significant considerations that must be taken into account with respect to how to carry out research and how to interpret and draw inferences from the research findings. These are concerns that must be handled when defining a study’s research approach.

Overall, research approaches can be defined as plans and procedures for undertaking research; they cover the steps that start with making philosophical assumptions, that continue with deciding on the procedures of inquiry and finally moving on to determining the detailed methods of data collection, analysis and interpretation that will be utilized throughout the research (Creswell, 2014).

Research approaches in social sciences vary according to: (a) their ontological base, which is related to the position taken regarding the existence of a real and objective world; (b) their epistemological base, which is related to the stance taken about the possibility of knowing this world and the forms this knowledge can take; and (c) their methodological base, which refers to the technical instruments that are used in order to acquire knowledge (Corbetta, 2003, pp. 12–13; Guba & Lincoln, 1994, p. 108).

These will be briefly reviewed to clarify the research approach taken in this thesis and the rationale behind the epistemological, ontological and methodological choices.

6.1.1 Epistemological and ontological considerations

There are two major epistemological paradigms in social science research, which involve opposing views regarding how to study social phenomena and how acceptable knowledge can be acquired; these are positivism and interpretivism.

Positivism is an epistemological position that follows from the tradition of natural sciences and was the prevailing paradigm until the 1960s in social research. Positivism holds that scientific knowledge can only be acquired from observable and measurable data and thus “theoretical terms that are not directly amenable to observation are not considered genuinely scientific” (Bryman & Bell, 2015, p. 28). It tends to see the world as objective reality, operating through general laws and is likely to utilize research as a way to “test theories and to provide material for the development of laws” (Bryman & Bell, 2015, p. 27).

Therefore when following the positivist paradigm, researchers hold that social science is in many respects similar to the natural sciences. As a result, the quantitative and experimental methods of research that are utilized in natural sciences are imitated to the study of the social world (Bryman, 2008; Bryman & Bell, 2015). The positivist tradition in social science suggests that social phenomena are also objective, and knowable in a way that is independent of the observer:

The world exists as an objective entity, outside of the mind of the observer, and in principle it is knowable in its entirety. The task of the researcher is to describe and analyse this reality. Positivist approaches share the assumption that, in natural as in social sciences, the researcher can be separated from the object of his/her research and therefore observe it in a neutral way and without affecting the observed object. (Della Porta & Keating, 2008, p. 23)

Beginning with the 1960s, criticisms and rejections regarding the appropriateness of applying the same principles of the natural sciences to the investigation of social phenomena lead to the development of other paradigms that deviate greatly from the positivist approach.

In this respect, interpretivism is a major contrasting epistemological position to positivism. It argues that because the subjects of social sciences essentially differ from those of the natural sciences, they should be studied inside a research approach “that reflects the distinctiveness of humans as against the natural order” (Bryman and Bell, 2015, p28). As a result, interpretivism emphasizes the empathic understanding and interpretation of human behavior and social action rather than the objective explanation of forces operating on it, by striving to analyze “social action from the actors’ standpoint” (Tracy, 2013, p.41). Its intellectual grounding is based on the hermeneutic and phenomenological traditions of philosophy, which underline the subjectivity of meaning in the social world, and the importance of understanding and interpreting human action from the subject’s point of view (Bryman and Bell, 2015).

As opposed to the ontological position of objectivism, which is most commonly associated with positivism, interpretivism is connected to a constructionist ontology, which asserts that reality is not out there to be found out, but both reality and knowledge are socially constructed and continually reproduced through communication, language, interaction, and practice. According to constructionism, “The world is not just there to be discovered by empirical research; rather, knowledge is filtered through the theory the researcher adopts” (Della Porta & Keating, 2008, p. 24). “Knowledge about reality is therefore always mediated through the researcher” (Tracy, 2013, p. 40).

Thus, although interpretivism, similar to the positivist approach, seeks to understand and provide explanations for social phenomena, it does not try to derive these from external observations and the testing of theories; but from researching and interpreting the meaning of actions, motives and concepts from the point of view of those involved in it, “attempting to see the world from participants’ eyes” (Tracy, 2013, p. 40).

6.1.2 Methodological considerations

Methodological considerations relate to the techniques and instruments used in acquiring knowledge. In this context, quantitative and qualitative approaches can be recognized as two major “clusters of research strategy” (Bryman & Bell, 2015) that differ from each other in many aspects.

In the most basic sense, while quantitative methods utilize quantification in collecting and analyzing data and deductive reasoning to explain the relationship between theory and research, qualitative research largely utilizes words in data collection and analysis, and takes an inductive approach to the relationship between theory and research (Bryman & Bell, 2015). The deductive approach starts the research process with a theory; develops a hypothesis from this theory; tests this hypothesis by collecting data; and analyzes the results based on whether they support or reject the theory. On the other hand, in the inductive approach, data collection precedes theory; theories and hypothesis are generated through the regularities and patterns suggested by the results of the study. In Table 6.1, Bryman and Bell (2015) reveal the major features of qualitative and quantitative research strategies in terms of their common orientations concerning the role of theory, and their epistemological and ontological standpoints.

Table 6.1 : Fundamental differences between qualitative and quantitative research strategies (Bryman & Bell, 2015)

	Quantitative	Qualitative
Principal orientation to the role of theory in relation to research	Deductive; testing of theory	Inductive; generation of theory
Epistemological orientation	Natural science model, in particular positivism	Interpretivism
Ontological orientation	Objectivism	Constructionism

In quantitative research, the focus is on measuring common, but few features of many units. Methods include experiments, surveys, structured interviews, and reviews of documents or archival records to generate quantitative information. Whereas, in qualitative research, the researcher studies a large number of features

of a few units of analysis in depth; resulting in detailed, varied and broad data. Their methods consist of in-depth interviews, focus groups, observations, and document reviews that generate qualitative data from which to identify common patterns and themes. According to Denzin and Lincoln (2000), the word qualitative signifies an emphasis on qualities, processes and meanings, which are not examined or measured experimentally in terms of quantity, amount, intensity, and frequency.

Accordingly, together with the emergence of interpretivist and phenomenological stances, the prominence of using quantitative research methods to carry out empirical research in social science began to be challenged. Quantitative research was criticized by interpretivists on the grounds that “Human activity is not regarded as a tangible material reality to be discovered and measured; rather it is considered to be a “text” that can be read, interpreted, deconstructed, and analyzed” (Tracy, 2013, p. 40). With their emphasis on understanding what is taking place and why, qualitative research strategies have gained increasing popularity among social scientists that view reality as socially constructed through the words, symbols, and the behaviors of its members, and who are less concerned with generalizability and more with enhancing understanding about the complexities of social events. In this sense, Denzin and Lincoln (2000) provide a detailed definition for qualitative research from an interpretivist stance:

Qualitative research is a situated activity that locates the observer in the world. It consists of a set of interpretive practices that make the world visible. These practices transform the world. They turn the world into a series of representations, including field notes, interviews, conversations, photographs, recordings and memos to the self. At this level, qualitative research involves an interpretive, naturalistic approach to the world. This means that qualitative researchers study things in their natural settings, attempting to make sense of, or to interpret, phenomena in terms of the meanings people bring to them. (p. 3)

As a result, it is commonly accepted that the epistemological and ontological paradigms have their methodological implications. As Della Porta and Keating (2008) indicate, although at one level, methodological questions are independent from the epistemological and ontological approaches, “in practice, they tend to be linked, since positivistic social science lends itself naturally to ‘hard’ methods, seeking unambiguous data, concrete evidence and rules and regularities, while more interpretive approaches require ‘softer’ methods”, in order to allow for contingency and the interaction between the researcher and the subject (Della Porta & Keating, 2008, p. 26).

Yet, it must be mentioned that even though a strong tendency for favoring qualitative or quantitative methods is apparent based on researcher’s epistemological and

ontological stances, both quantitative and qualitative research methods can be used legitimately with any research paradigm, depending on the research objectives (Guba & Lincoln, 1994). As Bryman and Bell (2015) point out, the distinction between these two research strategies “is not a hard-and-fast one: studies that have the broad characteristic of one research strategy may have a characteristic of the other” (p. 38). Additionally, many researchers effectively combine quantitative and qualitative strategies inside a single research, resulting in mixed methods strategies. But if the research seeks to understand social phenomena and an in-depth interpretation is essential, the study primarily calls for qualitative research approaches.

6.2 Rationale for the Selection of the Research Strategy

As outlined in the previous section, the selection of a research approach is based on several important considerations that follow from the nature of the research problem and issues being addressed, together with the epistemological and ontological orientation of the researcher (Bryman & Bell, 2015; Creswell, 2014).

To begin with the research problem, this study explores design management capabilities inside business environments. Similar to many empirical studies regarding businesses, it is about a complex process that engages several human actors, and that requires a combination of knowledge, skills and routines, all of which are strongly influenced by the organizational context, as well as the business environment. Additionally, the goal of the study is not to test any specific theory or law but to understand and offer a rich and descriptive account of existing design management capabilities in organizational contexts, and more specifically about how design and strategy are linked inside these businesses through design management practices and routines.

As its main objective is to increase understanding about a complex process, where the real-life context is critical to enable this understanding, the study is connected to the interpretivist stance: it endeavors to gather information mostly through the explanations and opinions of participants, who are involved in activities and decisions concerning design and design management inside these organizations.

Based on these motives, among the various research strategies that are available for social research, case study research provides particular advantages that are in line with the interpretivist and constructivist approach that is adopted in this study,

by-allowing for “an in-depth analysis of phenomena, their constitutive processes and the actors involved” (Gagnon, 2010, p. 2), inside their contextual environments.

Yin (2009, p. 8) provides a detailed comparison of common research strategies utilized by social scientists, such as surveys, experiments, archival analysis, case studies and histories. Underlining that each strategy has its advantages and disadvantages, he proposes that one should consider 3 conditions, when choosing one over another:

- The type of research question posed.
- The extent of control an investigator has over actual behavioral events.
- The degree of focus on contemporary as opposed to historical events.

As presented in Table 6.2, he reveals how different research strategies can be selected based on characterizations regarding these 3 conditions. Connected with these three criteria, Yin (2009, p. 2) indicates that case study research is the favored research strategy when the following conditions are present:

- The questions are being posed as “how” or “why” questions.
- The investigator has little or no control over events.
- The focus of the research is on a contemporary phenomenon inside a real-life context.

In the context of this research study, all these conditions are present: the research questions are in the form of “how” (as well as what questions of exploratory nature), the researcher has no control over actual behavioral events, and the research concentrates on studying a contemporary phenomena in a real-life context, that is: existing design management capabilities inside actual organizations; how design activities are connected with business strategies through these capabilities; and if present, the enablers and barriers influencing this process.

Moreover, Gagnon (2010) adds that case study strategy is best fitting for “practical issues in which the experience of the subjects is central and the context of the experience is decisive” (pp. 14-15). Similarly, the experiences of subjects that are involved in design management activities and decisions are central to understanding design management capabilities of these businesses, where their organizational environment and business context are also vital to this understanding. These features of the research problem give additional motives to incline towards a case study strategy.

As a result, among different research strategies that were considered, case study was chosen as the research strategy that is best aligned with the objectives of this research. The following section provides a more detailed account of the case study approach, as well as research methods that can be used by case studies in order to acquire, analyze and interpret data.

Table 6.2 : Relevant situations for different research strategies (Yin, 2009).

Strategy	Form of research question	Requires control over behavioral events?	Focuses on contemporary events?
Experiment	how, why	yes	yes
Survey	who, what, where, how many, how much	no	yes
Archival analysis	who, what, where, how many, how much	no	yes/no
History	how, why	no	no
Case study	how, why	no	yes

6.3 Case Study Research

Case study research is a widely utilized research strategy in a broad range of disciplines, such as the social sciences, management sciences, education and communication studies, in order to contribute to our knowledge about individual, group, organizational, social, political and related phenomena (Breslin & Buchanan, 2008; Yin, 2009).

Yin (2009) defines case study as “an empirical inquiry that investigates a contemporary phenomenon in depth and within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident” (p.18). The latter part of this definition highlights the fact that in case study research, the contextual characteristics are highly significant in understanding the subject at hand. Similarly, according to Hartley (2004), case study research "consists of a detailed investigation, often with data collected over a period of time, of phenomena, within their context," and with the aim of providing "an analysis of the context and processes which illuminate the theoretical issues being studied" (p. 323). Researchers identify that it is specifically these characteristics that present case studies a significant role in the generation of hypothesis and in building theories (Eisenhardt, 1989; Hartley, 2004). Additionally, these characteristics provide important implications for the logic of research design, techniques utilized in data collection and approaches regarding data analysis. In this respect, Yin (2009) lists that “the case study inquiry:

- copes with the technically distinctive situation in which there will be many more variables of interest than data points, and as one result
- relies on multiple sources of evidence, with data needing to converge in a triangulating fashion, and as another result
- benefits from the prior development of theoretical propositions to guide data collection and analysis" (p. 18).

According to Yin (2009) "the distinctive need for case studies arises out of the desire to understand complex social phenomena" because "the case study method allows investigators to retain the holistic and meaningful characteristics of real-life events – such as individual life cycles, small group behavior, organizational and managerial processes, neighborhood change, school performance, international relations, and the maturation of industries" (p. 4). Therefore gaining a deep understanding of the subject at hand and taking a holistic perspective in doing this are two most distinguishing features of this research strategy.

Additionally, case study research is found specifically well-suited for investigating complex organizational processes that engage various participants and that involve sequences of interacting events (Bhattacharjee, 2012 p. 94), which explains its popularity among business and management researchers (Eisenhardt & Graebner, 2007). Additionally, case study stresses a rigorous examination of the setting because it is concerned with the complexity and the particular nature of the case in question (Stake, 1995). According to Bryman and Bell (2015), the distinctive characteristic of case study in comparison to other research designs is "the focus on a bounded situation or system, an entity with a purpose and functioning parts" (p. 68). Referencing Gomm et al. (2000) and Yin (2009), Rose et al. (2015, p. 1) list other common characteristics of case study as:

- In-depth study of a small number of cases, often longitudinally (which can either be prospectively or retrospectively).
- Collection and analysis of data regarding a large number of features of each case.
- Study of cases in their real-life context as understanding how the case influences and is influenced by its context is often of central interest to case researchers.
- Cases are naturally occurring, meaning that they are not controlled or manipulated as in an experiment.

- The use of multiple sources of data including interviews, observation, archival documents and even physical artifacts to allow triangulation of findings.

Case studies are common frameworks utilized for carrying out qualitative research (Stake, 2000). However, it must be underlined that although they are commonly recognized among the array of qualitative research strategies, case studies are not exclusive to qualitative research; they can also involve quantitative methods or mixed method approaches entailing both quantitative and qualitative evidence (Bryman & Bell, 2015; Yin, 2009). Stake (2000) further clarifies that case study is not a method but a research strategy that can be conducted with a vast array of methods that are found appropriate for the study objectives: "Case study is not a methodological choice but a choice of what is to be studied. By whatever methods, we choose to study the case" (Stake, 2000, p. 435). As a result, case studies can also be used by researchers following the positivist research tradition and employing quantitative or mixed method approaches. Still, an orientation towards the interpretivist stance and the utilization of qualitative research methods, such as participant observation and unstructured interviews, are more widespread among case study researchers, as these methods more easily lend themselves to intensive and in-depth examinations that characterize the major strengths of the case study approach.

Another key strength of the case study strategy is its adaptability to different types of research questions and to different research settings (Rose et al., 2015). Additionally, Yin (2009) upholds that "the case study's unique strength is its ability to deal with a full variety of evidence - documents, artifacts, interviews and observations" (p. 11). The breadth in the sources of evidence offers the researcher the advantage to study the subject in great detail and in a holistic manner inside its individual context. According to Lee et al. (2007) it is the particularization not the generalization that create the main strength of case studies. Therefore the analysis in case study approach should focus on the uniqueness of the case in order to reflect a deep understanding of its complexity (Bryman & Bell, 2015). In terms of the research results, Langrish (1993) suggests three strengths of case studies as: "add[ing] detail to previously known phenomena", "discovering new phenomena" and being able to "refute existing notions" (p. 364).

However, case studies also involve several limitations. One of their most commonly recognized limitations is related to the issue of generalizability. Because case studies require in-depth investigations, they are either limited to a single case or a

few cases. This attribute results in concerns about providing a poor basis for scientific generalization (Yin, 2009), especially in the context of single cases. Yin (2009) responds to this concern by indicating that “case studies, like experiments, are generalizable to theoretical propositions and not to populations or universes” (p. 15). Therefore, if statistical generalizability to a population is a major objective, then case study is not a suitable research strategy (Rose et al., 2015).

Another significant limitation is related to practical considerations. Due to the highly labor intensive nature of this research strategy, more energy and resources are required in every stage of the research process, from data collection and analysis to reporting (Schell, 1992). Additionally, compared to quantitative research strategies, the specific procedures to be followed are not as formulated and clear, making this strategy more prone to lack of rigor, as well as to “equivocal evidence or biased views to influence the directions of the findings and conclusions” (Yin, 2009, p. 14). Consequently, the conduction of case study research necessitates more skill and attention to systematization on the part of the researcher, in order to increase research quality and the credibility of the results.

This also necessitates that the research design, which is a plan that “guides the investigator in the process of collecting, analyzing and interpreting observations” (Nachmias & Nachmias, 1992, p. 77), must be devised with great care, in order to follow systematic procedures that enable the researcher to draw inferences from the collected data.

According to Yin (2009), there are 4 critical conditions for design quality common to empirical research in social science, which the case study research design should aim to maximize. Yin (2009, p. 40) summarizes these as:

- Construct validity (also referred to as measurement validity): entails identifying correct operational measures for the concepts being studied.
- Internal validity: relates to the issue of causality; questioning whether there really is a causal relationship between the variables as suggested by the findings of the research.
- External validity: is related to the issue of generalizability and defining the context to which the findings can be generalized.
- Reliability: is concerned with demonstrating that the research process can be repeated with the generation of the same results.

According to others, these concepts are “inapplicable to or inappropriate for qualitative research” because they are founded in quantitative research traditions (Bryman & Bell, 2015, p. 51). In their place they suggest trustworthiness as the main criterion for the quality of qualitative research, with 4 aspects that parallel the above mentioned criteria (Lincoln & Guba, 1985 as cited in Bryman & Bell, 2015):

- Credibility: This is similar to internal validity and refers to how believable the findings are.
- Transferability: This is similar to external validity and refers to the applicability of the findings to other contexts.
- Dependability: This is similar to reliability and refers to the likeliness of the findings to apply at other times.
- Confirmability: This is similar to objectivity and refers to the degree to which the researcher has allowed his/her biases and individual points of view to interfere with the results.

6.4 Details of Case Study Research

6.4.1 Selection of cases

The empirical context for the research had already been specified at the beginning of the study as the Turkish ceramic sanitary ware industry. This decision was based on two major factors. The first is that as indicated previously, this industry is one of the first industries in Turkey to begin the acquisition of design and design management capabilities. Secondly, starting after the mid 2000s, several firms from this industry initiated major strategic renewal processes, which involved the integration of design into their corporate strategies, a strong focus on the development of design management skills and a noticeable increase in the utilization of design in different spheres ranging from product development to corporate communications. This trend towards beginning to use design in a more strategic manner was noticed to be followed in differing degrees by other players in the industry. As a result, it was discerned that ceramic sanitary ware sector provides a unique and significant ground to explore design management capabilities, and specifically design management capabilities at the strategic level.

In order to select the cases to be studied, a purposive sampling strategy was used. Purposive sampling is a commonly used technique in qualitative studies, which endeavors to identify representative units based on the specific purposes related to

answering the research questions (Teddle & Yu, 2007). It tries to select samples by distinguishing information-rich cases related to the phenomenon of interest. In other words, “particular settings, persons, or events are deliberately selected for the important information they can provide that cannot be gotten as well from other choices” (Maxwell, 1997, p. 87). Criterion sampling is a widely used purposive sampling method and selects cases that meet certain criteria, which are defined based on the research objectives.

As have been indicated before, the thesis endeavors to understand how companies manage design, and how business strategy and design are linked by means of design management capabilities, in the context of the Turkish ceramic sanitary ware industry. Thus, as the primary criterion, this necessitated that the companies were known to use design, either through the possession of in-house design skills and/or through the services obtained from external design professionals.

Additionally, the research aims to understand design management skills not only in the context of project level and organization level skills but also in terms of strategic level skills, which focus on establishing an effective connection between design activities and business strategies. Previous research indicates that the significance of design increases together with the size of the enterprise, due to increased resources and business requirements afforded to large scale companies (Danish Design Council, 2003). The results of a survey conducted by the Danish Design Council (2003) reveals that “large companies have a greater capacity to engage in design compared to small companies” (p. 29), and that company's focus on design in relation to company strategy, business visions and future role in the value chain increases together with the company size. This indicates that large scale companies are more likely to possess design management capabilities pertaining to the strategic level. Thus as a second condition, the companies were required to be large scale businesses.

Moreover, Stake (1995) suggests that case studies should be selected primarily based on the expectation of the opportunity to learn. Therefore when selecting the cases, the fundamental concern was to choose cases that offered the greatest possibility for learning. For the purposes of this research, this condition meant that the companies did not simply use design, but that they showed a discernible and consistent emphasis on design use in connection to their business strategies, which led to the third criterion. This was decided to be determined based on two major indicators: company's website specifying a focus on design and/or communication of design emphasis through other corporate communication mediums; and consistency

of design use demonstrated by regular participation and recognitions earned in design competitions.

Consequently, the criteria for the selection of companies followed from the research objectives and were identified as:

- Utilizing in-house designers and/or working with external designers,
- Being a large scale company,
- Giving a clear focus on design as part of business strategy (as demonstrated by their web sites, corporate communications, and participation & awards earned in design competitions).

In order to provide a solid grounding for the empirical part of the study and to gather more information that will guide the selection of case studies, Turkish ceramic sanitary ware sector was analyzed with a focus on understanding its major characteristics, main players and the significance of design and design management capabilities for the sector. This analysis contributed to an increased understanding of the sector and facilitated an informed selection regarding case studies. Information on companies operating in the Turkish ceramic sanitary sector was acquired from Turkish Ceramic Federation (Türkiye Seramik Federasyonu) and numerous reports published by the Turkish Ministry of Science, Industry and Technology, as well as the Development Bank of Turkey (Türkiye Kalkınma Bankası AŞ).

It was observed that the sector consists of 9 large scale enterprises and 30 SMEs (T.C. BİLİM SANAYİ VE TEKNOLOJİ BAKANLIĞI, 2015). Among the 9 large scale manufacturers, only 3 of them revealed a discernible and consistent emphasis on design use, as indicated by their websites, corporate communication materials, as well as their regular participation in design competitions such as Red Dot, IF and Design Turkey. It was seen that these have also resulted in numerous design awards earned throughout the years. As a result, 3 ceramic sanitary ware manufacturers were identified as the cases to be studied, which were in the later stages of the study, found out to be the top 3 players in the industry in terms of market share.

6.4.2 Case study design

Research design is a framework that guides the researcher in the collection and analysis of data (Bryman & Bell, 2015). It is a logical sequence that starts with the research questions; connects them to the empirical data to be collected; and finally

to the way the data are analyzed and interpreted in order to reach the study's conclusions. In this manner, research design provides the researcher "a logical plan for getting from here to there" (Yin, 2009, p. 26). Philliber et al. suggest that another way to think about research design is to consider it as a blueprint for the study that deals with at least 4 problems: "what questions to study, what data are relevant, what data to collect and how to analyze the results" (as cited in Yin, 2009, p. 26).

The unit of analysis is one of the major components of a research design. It denotes the person, object or group which constitutes the target of the study. In the context of case studies, deciding on the unit of analysis indicates defining what the case is. A case can be an individual, a group, an organization, or it can be an event, such as a management decision, an organizational program or an implementation process (Yin, 2009). As the major goal of this study is to understand design management capabilities in organizational contexts and how design and business strategy are linked in these organizations through existing design management practices and routines, the unit of analysis is defined as the organization.

In the context of case study strategy, Yin (2009) suggests 4 alternatives to research design, resulting from 2 options regarding the number of cases to be studied, and 2 other options regarding the levels of analysis included inside the cases. These are: single case holistic designs, single case embedded designs, multiple case holistic designs and multiple case embedded designs. He indicates that single case studies are suitable designs under several conditions such as: when the case represents the *critical case* for testing a theory; when the case is an *extreme* or a *unique case*; when the case is a *typical* or *representative case* for a commonplace situation; when the case is a *revelatory case* presenting the opportunity to analyze a phenomenon for the first time; and finally when the case is a *longitudinal case*, which is studied at two or more different points in time. On the other hand, multiple case study design involves several cases and allows for comparisons to be made between the findings. It enables the researcher "to consider what is unique and what is common across cases, and frequently promotes theoretical reflection on the findings" (Bryman & Bell, 2015, p.71). For this reason, the evidence generated as a result of multiple case study designs is generally considered more compelling and robust compared to single cases (Herriott & Firestone as cited in Yin, 2009).

For the purposes of this study, a multiple case study design was selected, as the formerly appraised rationales for choosing single case study design did not apply to the organizations operating in the Turkish ceramic sanitary ware sector in the context of the study's research objectives. As explained in the previous section,

based on a review of businesses operating in the Turkish ceramic sanitary ware sector, 3 organizations were identified as offering information rich cases for studying organizational design management capabilities and the way design and strategy are connected through these capabilities inside these businesses.

In order to attain a deep and rich understanding about design management capabilities and to cover both the phenomenon of interest and its context, data was collected at 3 major levels of analysis: the business organization, the development of design and design management capabilities throughout the years, and present design management capabilities possessed by the organizations.

Yin (2009) highlights that when undertaking multiple case studies the researcher should follow a replication logic similar to the logic used in multiple experiments (p. 54); that is case studies must be carried out either as literal replications that predict similar results or as theoretical replications that presume contrasting results for expected reasons. In this study, the case study design pursued a literal replication approach.

Additionally, in multiple case study designs, comparison of cases becomes essential, in order to find out similarities and differences between the cases; to search for explanations regarding these; and to enrich understanding of social phenomena in different contexts (Bryman & Bell, 2015). Therefore it is important to follow identical approaches and methods in the collection and analysis of data. Likewise, in order to carry out systematic comparisons and adhere to a replication approach, it is necessary to define clearly the specific measures to be used in the data collection process. These will be detailed in sections 6.5 and 6.6, which will specifically focus on data collection and analysis techniques utilized throughout the study.

6.4.3 Gaining access to case study sites

Having determined 3 business organizations as the cases to be examined, the next step was to gain access to these organizations. Through the researcher's network, internet sources and business-oriented social networking service LinkedIn, primary contacts were identified for each company. For 2 cases, the primary contacts were general managers and for 1 case, it was the design manager. These contacts were sent emails that explained the purpose of the research, gave information about the researcher and about how the study is planned to be carried out. Extended information about the thesis study and prior research by the author of the thesis were also attached to the emails as further references, and their collaboration was

requested. For one case an additional measure was taken and the general manager's collaboration was requested also through the reference of a mutual contact.

2 of these requests were accepted personally by the primary contacts, whereas in case study 1, the general manager accepted collaboration but passed on the interview request to company's design director, which therefore became the primary interviewee for this case study. Other interviewees were identified together with the primary interviewees, based on the criteria that they have job titles similar to the following: general manager, design director/manager, marketing director/manager, innovation director/manager, and designer. After this step, interviews were arranged with the identified informants through the assistance of the primary interviewee. After the conduction of interviews, follow up emails were sent to most of the informants in order to request additional data, to clarify information provided during the interview or to identify additional interviewees.

In one particular case, although the primary interviewee agreed to help establish contact with other informants that were identified together at the end of the interview, he was reluctant to help when follow up emails were sent to him that particularly asked for his assistance. The emailing was continued and 2 follow-up phone calls were made to ask for his help in arranging the meetings. As a result, only one additional interview was able to be arranged. The unwillingness to commit other employees to the case study is thought to be related to his concerns regarding confidentiality, as at the beginning of his interview, he had specifically expressed this issue as a major concern. This problem limited the amount of data collected using the interview method for this specific case. However, this was balanced by collecting information through secondary information sources and particularly by the previous research that had been conducted by the author of this thesis regarding the company's design management capabilities (See Topaloglu & Er, 2010, 2011).

6.5 Data Collection Techniques

One of the main strengths of case study strategy is the opportunity to use multiple sources of data, which provides important advantages, both in reaching a more holistic understanding of the phenomenon of interest and in enhancing the reliability of the research results. The most common data sources in case study research include documents, archival records, interviews, direct observations, participant-observations and physical artifacts (Yin, 2009). These can be extended to include many other sources such as films, photographs, ethnography and life histories. The

critical point is that data obtained from these multiple sources are treated as complementary and integrated throughout the analysis process, each contributing to form one part of the researcher's understanding about the subject under study.

The most important rationale for using multiple sources of evidence is the development of "converging lines of inquiry" through a process of *triangulation* (Yin, 2009, p. 115). *Triangulation* of the data refers to collecting information that addresses the same phenomenon or research question from multiple sources, with the objective of corroborating the findings and providing more accurate and convincing results. Therefore by triangulating the data, the researcher increases the construct validity of the research, "because the multiple sources of evidence essentially provide multiple measures of the same phenomenon" (Yin, 2009, pp. 116-117).

Accordingly, with the objective of triangulating the evidence and increasing research quality, data was collected through 4 major sources:

- interviews with key informants;
- documents, including company documents as well as books, reports and articles covering the cases under study;
- direct observations regarding work environments;
- and physical artifacts, which included the outputs of different design activities carried out by these organizations, such as product designs, retail environments, websites, product catalogues and other marketing and communication materials.

Interviews are one of the most important sources of case study data, especially when the cases are aimed at understanding human affairs or behavioral events: "well-informed interviewees can provide important insights into such affairs or events" in addition to "shortcuts to the prior history of such situations, helping you to identify other relevant sources of evidence" (Yin, 2009, p. 108). Consequently, interviews constituted a principal method of data collection, which were carried out with key informants such as design managers/directors, marketing managers/directors, designers, and general managers.

Additionally, a major research framework was employed in order to systematize the data collection process, as well as analysis. As have been previously presented in section 4.9, an updated *Design Management Audit Framework* (Appendix A) had been developed in the theoretical part of the study, on account of an extensive

review and synthesis regarding design and design management literature, as well as exiting design management frameworks and audit tools. The audit tool developed in the theoretical phase was used as the main framework in the collection of empirical data regarding present design management capabilities possessed by the studied organizations. The tool provided the structure for data collection, the interview questions, as well as the assessment scale that was utilized to evaluate the findings, which are all presented in Appendix A. Therefore, *Design Management Audit Framework* enabled data collection to be carried out based on a conceptual model that systematized the research. Moreover, it allowed for methodical comparisons to be made between the cases, both through the structure and categorization it provided as well as the assessment scale it presented in the form of a maturity grid.

On the other hand, in order to collect data regarding the development of design and design management capabilities throughout the years, company documents and prior research were complemented by additional interview questions. Some example questions are presented in Table 6.3 and the full list is included in Appendix B. In addition to these standard questions, further queries were tailored according to the company being studied and depending on the respondent's position and expected knowledge.

Table 6.3 : Example interview questions regarding the development of design and design management capabilities.

Could you briefly summarize the company profile and business strategy in the founding years?
How did [company name] acquire its technology and how were production skills and know-how developed?
How were the first products designed? (Licensing? Working with external designers? In-house design and development?)
How did product design and development activities continue in the following years?

Most of the interviews regarding case studies were conducted in a sequential approach, beginning with the first case, in October, 2015, and ending with the third case in December 2015. 2 additional interviews were conducted in February and March 2016.

Before the company visits, a detailed background research and review was carried out using company reports, brochures, corporate websites, press releases and mass media articles concerning the companies under investigation. This step increased knowledge about the organization and provided a necessary foundation for understanding and discussing design management capabilities with the interviewees, in relation to the wider industry context and in connection to specific

business objectives. Besides, the information obtained from these documents was corroborated with the respondents and was used to inquire further into certain topics in more detail. Additional documentation was also requested from the interviewees during the conduction of the interviews.

With only one exception, the meetings with the interviewees were held at the participant's workplace during working hours. As the interviews took place in the natural setting of the organizations, direct observations were also made regarding work environments, employee behavior and organizational climate, as well as significant physical artifacts related to design processes – such as product designs, prototypes, hardware or the availability of information sources for design (e.g. design and industry journals, books, manuals).

All interviews were face to face interviews. A total of 13 interviews were carried out with details presented in Table 6.4. The interviews mostly took the form of long interviews. 9 out of 13 interviews lasted longer than 1 hour, with the shortest interview lasting 45 minutes, and the longest ones lasting nearly 3 hours, which were carried out in 2 parts, with a break in between the interview sessions.

Table 6.4 : Interview details.

Case	Interview Code	Job Title	Interview Duration
Case Study 1	CS1-1	Design Director	2 hours 48 minutes
	CS1-2	Marketing Services Manager	55 minutes
Case Study 2	CS2-1	Design Management Office Supervisor for Bathroom	Part 1: 1 hour 18 minutes Part 2: 1 hour 17 minutes
	CS2-2	Vice President of Marketing	45 minutes
	CS2-3	Marketing Manager	1 hour 56 minutes
	CS2-4	Design Management Office Supervisor for Tiles	1 hour 24 minutes
	CS2-5	Designer	1 hour 11 minutes
	CS2-6	Business Group Vice President of Organizational Development	1 hour 4 minutes
	CS2-7	Business Group Vice President	60 minutes
Case Study 3	CS3-1	Design and Application Manager	2 hours 59 minutes
	CS3-2	Design Chief	2 hours 59 minutes
	CS3-3	General Manager	52 minutes
	CS3-4	Sales and Marketing Manager	1 hour 23 minutes

As have been indicated previously, the interviews were carried out based on the *Design Management Audit Framework* developed in the theoretical part of the thesis study (See Chapter 4.9 and Appendix A). The framework established the interview guide, where the list of topics and questions structured under this framework were utilized as the basis of semi-structured interviews, comprising questions of an open-ended nature. Yet, whenever found necessary, additional questions were also posed to the interviewees to better understand the specific issues under study or to

acquire their opinions about events, processes or attitudes. Particular attention was given to conduct the interviews as “guided conversations” (Yin, 2009). The interview protocol is also presented in Appendix C.

Moreover, for certain issues tackled inside the design management audit framework (such as attitudes towards design, or the communication of strategies and business plans throughout the organization), a structured questionnaire was designed and help was requested to carry out the questionnaire inside the organization. However except for one case, the companies refused to collaborate. As a result, questionnaire method could not be included as part of data collection.

Interview notes were utilized in order to log responses, other details noticed during the interview and any personal cues to be considered during analysis. Additionally, all interviews were recorded as audio files and were fully transcribed. Audio records are stored in electronic format inside the case database, while the transcriptions are maintained both in hard copy and electronic format. As a result, a total of 21 hours and 51 minutes of interview data were collected.

Therefore, a rich database was developed for each case, comprising of interview notes, interview transcripts, direct observations, documents obtained from primary and secondary sources and pictures of physical artifacts representing the outputs of companies' design activities.

No matter what sources of data are utilized, Yin (2009) suggests 3 essential principles that must be followed during data collection in order to increase the construct validity and reliability of case study evidence. These are:

- Using multiple sources of evidence.
- Creating a case study data base.
- Maintaining a chain of evidence.

Besides having utilized multiple data sources to triangulate the evidence and having generated individual case study databases for each case, the third principle of “maintaining a chain of evidence” was also followed by “mov[ing] from one part of the case study process to another with clear cross-referencing to methodological procedures and to the resulting evidence” (Yin, 2009, pp. 123-124). This allows an external reader to trace the path that connects the initial study questions, first to the specific evidence that was collected, and then to the final case study conclusions. In this sense, the utilization of the *Design Management Audit Framework*, in order to

guide data collection, data analysis as well as case study reporting, further contributed to the process of maintaining a chain of evidence.

6.6 Data Analysis Techniques

Qualitative data analysis entails the review, synthesis and interpretation of data with the aim of describing and explaining the phenomenon under investigation (Fossey et al., 2002). This process necessitates “examining, categorizing, tabulating, testing, or otherwise recombining evidence, to draw empirically based conclusions” (Yin, 2009, p.126).

Analyzing case study data is regarded as one of the most difficult phases in case study research due to underdeveloped techniques (Yin, 2009) and the generation of a huge database, mostly in the form of large amounts of textual data or “a large corpus of unstructured material”, which is not as straightforward to analyze as quantitative data (Bryman & Bell, 2015, p. 579). Another important characteristic of qualitative analysis is that it is an iterative and reflexive process, where data analysis begins together with data collection (Hartley, 2004) and continues in tandem, with “repetitive interplays between the collection and analysis of data” (Bryman & Bell, 2015, p. 579). Tracy (2013) explains that iteration is itself “a reflexive process in which the researcher visits and revisits the data, connects them to emerging insights, and progressively refines his/her focus and understandings” (p. 184). She also points to another important dimension of this iterative process:

An iterative analysis alternates between emic, or emergent readings of the data and an etic use of existing models, explanations, and theories. Rather than grounding the meaning solely in the emergent data, an iterative approach also encourages reflection upon the active interests, current literature, granted priorities, and various theories the researcher brings to the data. (Tracy, 2013, p. 184)

Unlike quantitative data analysis, there are no clear-cut rules in qualitative data analysis and there can only be “broad guidelines” to direct how the analysis should be carried out (Oakley, 1994 as cited in Bryman & Bell, 2015). Similarly, Patton (2015) explains: “Qualitative analysis transforms data into findings. No formula exists for that transformation. Guidance yes, but no recipe. Direction can and will be offered, but the final destination remains unique for each inquirer, known only when - and if - arrived at” (p. 531).

These are the major reasons why Yin (2009) highlights that in case study research, the analysis depends to a great extent on the investigator’s style of rigorous thinking, together with the portrayal of sufficient evidence and the consideration of

alternative interpretations. Additionally, thorough descriptions regarding the data and the generation of categories to group processes, observations and behaviors are significant steps in the analysis process.

Besides, in order to overcome the main difficulties associated with qualitative data analysis, it is imperative that case study analysis follows “a general analytic strategy, defining priorities for what to analyze and why” (Yin, 2009, p. 126).

For the purposes of this research, the case studies were carried out after the development of an analytical framework that was designed in the form of a design management audit tool (*Design Management Audit Framework* as detailed in Chapter 4.9 and provided in Appendix A); in order to guide the investigation of design management capabilities and how design activities are linked to business strategies inside the organizations. As detailed before, the framework was developed based on an extensive literature review and appraisal of existing design and design management frameworks and audit tools. The audit framework not only gave direction to the data collection process, but it also provided the analytical framework – that is the categories and evaluation indicators to be used in the first stage of data analysis. In this manner, it facilitated the coding, categorization and interpretation of large amounts of narrative text, by forming “pre-analytical categories” (Bryman & Bell, 2015, p. 596)

Additionally, data analysis began with the document reviews that started prior to the conduction of case study interviews and continued all throughout case study report writing in an integrative approach, combining transcribed data with interview notes, data obtained from documents and observations. Along these lines, data analysis was carried out in two phases:

Level 1 Analysis

This phase focused on analyzing case study data by describing and evaluating how the studied organizations managed design, based on the *Design Management Audit Framework*. Interview transcripts as well as other data were categorized and analyzed following the capability categories and themes provided by the audit framework, which are indicated in Table 6.5.

The framework also provided the structure in which the analysis is presented and design management capabilities are evaluated for each case inside the individual case study reports. In this way, it provided the “descriptive framework for organizing the case study”, the development of which is suggested by Yin (2009) as a general analytic strategy for case studies.

Table 6.5 : Categories of the *Design Management Audit Framework*.

1. Design in Strategy
Strategy Formulation Process Strategic (Business) Planning Process Strategy and Planning Communication Design in Strategy Design's Input to Strategy Formulation
2. Planning for Design
Design Planning Design Planning Horizons Design Policy and Principles
3. Investments for Design
General Budget Allocation Design Budget Allocation
4. Design Processes
General Process Awareness Design Process Awareness Design Process Management Design Process Thinking, Methods & Tools Legal Processes for Design Design Evaluation Processes
5. Design Organization
Design Management Responsibility Design Skills Organizing for Design
6. Research for Design
Design Research Programs and Resources Information and Idea Networks
7. Training and Development for Design
General Training and Development Nurturing Skills and Creativity of Design Related Personnel
8. Design Integration
Coordination and Communication with Other Business Functions, Strategies and Processes Role and Place of Design Breadth of Design (Design Activities Undertaken in Different Areas) Coherence and Coordination Between Different Areas of Design
9. Culture and Climate for Design
Design Awareness & Understanding of Senior Management Design Commitment of Senior Management Design Attitudes of Employees Environment for Creativity

Additionally, as part of the audit tool, an assessment scale was developed based on a process maturity principle (See Chapter 4.9). The scale presents the maturity of capabilities along 4 levels, with detailed descriptions provided for each level. Descriptions are intended to provide guidance with respect to what each level corresponds to in terms of the maturity of organizational skills or processes under investigation, thus helping to improve objectivity and reduce bias. The scale was used to assess design management capabilities possessed by each company along 9 major capability categories as indicated in Table 6.5. The assessment scale for the first capability category, *Design in Strategy*, is presented in Table 6.6, whereas the assessment scale for the overall audit framework is provided in Appendix A. Moreover, the assessment scale also facilitated the cross-case analysis by providing

the opportunity to carry out a methodical comparison between design management capabilities of the studied organizations.

Table 6.6 : Assessment scale for the *Design Management Audit Framework* for the capability category *Design in Strategy*.

	Level 1	Level 2	Level 3	Level 4
Strategy Formulation Process	There is no strategy formulation process.	Strategy understood as setting a few conventional performance targets without the formulation and evaluation of strategic options, no clear, guiding strategic visions.	Business strategies are developed, however with a limited analysis of internal & external factors and strategic options, and the process is not regular and structured.	Business strategies are developed through a structured process, and a detailed analysis of internal and external factors (trends, technology) and promising strategic options.
Strategic (Business) Planning Process	There is no business planning process.	Planning is carried out in a limited and unstructured way in a few business areas/functional departments.	Business strategies are turned into detailed business plans in several business areas/functional departments.	Business strategies are turned into business plans through a detailed and structured planning process in all business areas/functional departments, planning is an organization-wide approach that drives the business.
Strategy and Planning Communication	Strategy and business goals and plans are known only by few key individuals.	Business strategies, goals and plans are communicated in an unstructured way to senior management.	Business strategies, goals and plans are communicated in a structured way to senior management but there are problems in their communication to lower levels.	Business strategies, goals and plans are communicated in a structured way, with all company staff receiving relevant information and being updated.
Design in Strategy	Design is not part of strategy formulation or business plans.	Design is sometimes articulated as part of strategies and business plans of other areas like marketing and new product development but as individual projects.	Design is integrated into company strategy and business plans, but under marketing or new product development strategy.	Design is part of company strategy and business plans with a clear design vision, objectives and planning for design, design strategy is linked to other business processes and corporate objectives in various areas.
Design's Input to Strategy Formulation	There is no input from design to strategy formulation or business planning.	Designers and design managers indirectly contribute to strategy and plans through their interaction with key individuals and senior managers.	Designers and/or design managers contribute to strategy and plans however in the lower levels of marketing strategy or design strategy formulation.	Design managers and/or design staff contribute to strategy formulation by taking part in the company's strategy formulation process through structured meetings and processes.

As a result, level 1 analysis particularly concentrated on answering the 1st research question of the empirical phase of the thesis, which was stated as:

What is the scope and nature of design management capabilities in firms from the Turkish ceramic sanitary ware industry, specifically including design management capabilities at the strategic level?

This analysis is presented for each case, in the form of case study reports, in Chapters 7, 8 and 9. Besides evaluating design management capabilities at every level, case studies also placed a significant focus on understanding and assessing strategic design management capabilities, trying to figure out conditions, enablers and barriers in terms of effective performance. For this purpose a secondary level of analysis was carried out.

Level 2 Analysis

While level 1 analysis provided a comprehensive picture about how design is managed by these businesses, this phase focused on analyzing design management capabilities with particular emphasis on capabilities at the strategic level. It aimed to understand how design and strategy are linked through design management practices and routines in the current situation; and key enablers and barriers that influence this process.

Bryman and Bell (2015) state that one of the most common ways of approaching qualitative data is to conduct a thematic analysis, trying to identify themes from the data. Additionally, Neuman (1997) underlines that data analysis is essentially “a search for patterns in data” (p. 426). Along these lines, this secondary level of analysis was carried out, initially in the context of individual cases, by identifying emergent themes and recurring patterns; and later, by exploring them by means of a cross-case analysis. The themes were then integrated through their comparison across the cases, eventually to come up with the study's final conclusions. This analysis is presented inside Chapter 10, together with the overall discussion of the study results.

As a result, level 2 analysis specifically focused on answering the 2nd, 3rd and 4th research questions of the empirical phase, which were stated as:

How are design and strategy linked through design management capabilities in firms from the Turkish ceramic sanitary ware industry?

Are there specific enablers for the development of strategic design management capabilities ?

Are there specific barriers for the development of strategic design management capabilities?

7. CASE STUDY 1: ECZACIBAŞI BUILDING PRODUCTS

This chapter focuses on the analysis of design management capabilities residing inside a large scale ceramic sanitary ware manufacturer, which is also the leading player of the Turkish ceramic sanitary ware market. Additionally, the company is Turkey's first manufacturer of ceramic sanitary ware, having started its operations in 1958, and having enjoyed being the single manufacturer in this product category until the early 1980s.

After introductory information about the company profile and history, the case study will first concentrate on the acquisition and development of design and design management capabilities throughout the company's history. Then, the case study will analyze present design management capabilities possessed by the organization following the structure provided by the Design Management Audit Framework, which constituted the central research framework throughout the collection and analysis of the data. Finally, the chapter will present the assessment results for design management capabilities in accordance with the assessment scale provided by the audit framework and will close with a summary.

7.1 Company Profile and History

7.1.1 Profile

Eczacıbaşı Building Products (Eczacıbaşı Yapı Gereçleri A.Ş.) belongs to the Eczacıbaşı Group, which comprises of 41 companies, and which is among Turkey's leading industrial groups involved in the core sectors of building products, healthcare, and consumer products. Besides these primary sectors, the group also has operations in finance, information technology, welding technology, mining, and property development.

Eczacıbaşı Building Products, is Eczacıbaşı Group's global producer of ceramic sanitary ware, complementary products and ceramic wall and floor tiles, with around 6500 employees. The company has a total of 16 manufacturing facilities, out of which, 6 are located in Turkey, and 10 are distributed over Germany, France and Russia. Yet, all ceramic sanitary ware production is performed in Turkey, in the company's Bozüyük plant. The total production of these facilities amount to around 5

million pieces of ceramic sanitary ware, 36 million square meters of ceramic and wall tiles, 370 thousand modules of bathroom furniture, 3 million pieces of faucets, 350 thousand pieces of bathtubs, 2.5 million pieces of bathroom accessories, 150 thousand pieces of concealed cisterns and 550 thousand pieces of WC pan seats and covers a year. In terms of ceramic sanitary ware, the company declares that it is the 6th largest manufacturer worldwide (VitrA, n.d, Corporate Profile, p. 12). In different sources, the company is consistently mentioned among the world's top 10 producers of ceramic sanitary ware (Baraldi, 2015). Also, inside the Turkish ceramic sanitary ware industry, it is the largest manufacturer, well ahead of other producers. In January 2010, the company has also taken over the production of Eczacıbaşı Group's *Intema Mutfak* branded kitchen furniture. Table 7.1 presents a brief overview of the company profile.

Table 7.1 : Overview of company profile.

Name of Company	Eczacıbaşı Yapı Gereçleri San. ve Tic. A.Ş.
Number of Employees	6500
Turnover (in Turkish Liras - TL)	928.336.501 TL (for year 2014)
Export Amount (percentage of turnover)	65%
Management System Certifications	• ISO 9001 Quality Management System Certificate • ISO 14001 Environmental Management System Certificate • ISO 50001 Energy Management System Certificate • OHSAS 18001 Occupational Health and Safety Management System Certificate
Product Range and Brands	• Ceramic sanitary ware (Brand Name: VitrA) • Complementary products (Brand Name: VitrA) • Bathroom furniture (Brand Names: VitrA, Burgbad) • Ceramic tiles (Brand Names: VitrA, Engers, Villeroy & Boch) • Faucets, shower systems & accessories (Brand Name: Artema) • Kitchen furniture (Brand Name: Intema)
Range of Design Activities	• Industrial design • Graphic design • Retail space, interior and exhibition design • Web design • Architectural design

The company has two flagship brands that are both targeted at the middle and upper market segments: VitrA, for ceramic sanitary ware and wall and floor tiles; and Artema, for faucets, shower systems and accessories. However, in overseas markets, faucets and shower systems are also marketed under the brand name VitrA. Besides these flagship brands, the company also owns important brands of the European market, Engers Keramik (ceramic tiles), Villeroy & Boch Fliesen (ceramic tiles) and Burgbad (bathroom furniture), following its consecutive

acquisition of these companies in 2005, 2007 and 2008. Yet, for the ceramic sanitary ware product category, VitrA is the sole brand name. Figure 7.1 provides a snapshot from company's web page and and Figure 7.2 shows examples from company's products.

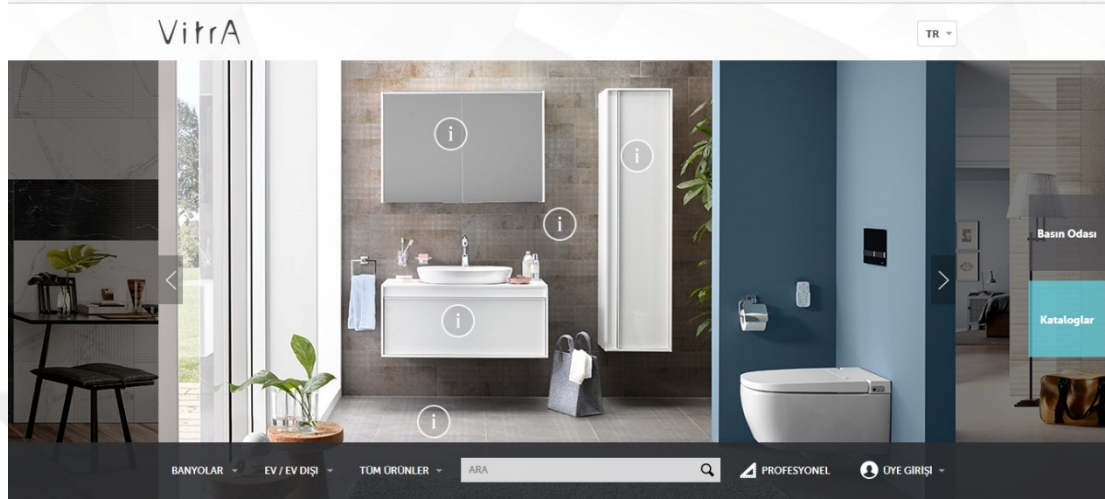


Figure 7.1 : A screenshot from VitrA's web page.



Figure 7.2 : Examples from VitrA branded products from the Istanbul Collection (VitrA, n.d., *The Ross Lovegrove Collections Istanbul, MOD & Freedom*).

Domestically, the company is the market leader in the ceramic sanitary ware sector, having the broadest product range and an extensive distribution network. In other product categories, such as wall and floor tiles, faucets, and bathroom furniture, the

company is again among the top 3 players, mostly appearing as the second in market share.

On the other hand, in global markets, the company has established itself as a renowned supplier of ceramic sanitary ware, wall and floor tiles, bathroom furniture and complementary products, especially since the second half of 2000s. As stated in its corporate profile catalogue: "VitrA is the only brand in global markets offering every component of the bathroom as well as an expansive range of ceramic and porcelain tiles" (VitrA, n.d., Corporate Profile, p.3). The company indicates that exports amount to two thirds of company's total turnover (VitrA, n.d., Dünden Bugüne VitrA, para. 3), and are made to more than 75 countries around the world. The company is also the largest exporter of ceramic sanitary ware in the Turkish industry, realizing more than 50% of Turkey's ceramic sanitary ware exports.

7.1.2 History and Development

The company started its operations in the ceramics sector in 1942, with a small workshop and 8 employees, with the purpose of supplying earthenware products that could not be imported due to the standstill of the World War II. After the war, the company expanded rapidly as a result of increasing customer demand; and together with the construction boom of the after war years, decided to focus on ceramic sanitary ware. Consequently, Turkey's first modern production plant devoted to the production of ceramic sanitary ware was established by the Eczacıbaşı Group in 1958. At that time, the traditional Turkish market was completely based on sanitary ware products made of marble. However, the novel and affordable ceramic option became increasingly popular due to its modern style and its advantages in terms of hygiene compared to marble products (VitrA, n.d., Corporate Profile, p.7; Topaloglu & Er, 2010). The ease of acceptance of this new product category and its increasing popularity supported a period of steady progress.

The brand name VitrA was adopted in 1966, representing a full range of sanitary products produced by a series of sister companies under the business group. Another factory, which later became a part of company's present Bozüyük mega complex, started production in 1977. After the company's strategic decision to diversify into complementary bathroom products, a faucet production plant was established in 1979, which was followed with ceramic tile and bathtubs factories in 1991; and the bathroom furniture factory in 1992. Consequently, since 1992, in addition to its primary product category of ceramic sanitary ware, the company

provides the complete building products range that can be found under bathroom spaces.

As previously reviewed in chapter 5.3.1, the 1980s witnessed significant changes in Turkey's industrial development and economic strategies. Import substitution based industrial growth policy was replaced with an export oriented growth regime, together with government incentives to promote exports and the removal of trade barriers and foreign exchange controls (Ahmad, 1993; Kepenek, 1990). As a result the previously protected domestic market was now open to foreign competition. Additionally new enterprises were beginning to be established creating and increasing competition inside the domestic market. Naturally, these major developments had important effects on the development pattern and business strategies of companies in all sectors including Eczacıbaşı Building Products.

As these developments altered the industrial and market structure in all sectors, companies began to focus on export markets. Similarly, VitrA began its first overseas sales in the early 1980s, with exports made to Germany, after which international markets gradually gained increasing significance inside the company's business strategies. The company started to operate in foreign markets, in the beginning as a subcontractor for world leaders of ceramic sanitary ware (VitrA, n.d., Dünden Bugüne Vitra, para. 2). And, all throughout the 1980s, the company gradually increased its export amounts, together with slow but continuous advances in its manufacturing, quality management as well as product design and development capabilities.

Beginning with the 1990s, the company concentrated more rigorously on the creation of new product ranges through a combined use of in-house and external design skills. Concurrently, the company also focused on establishing its marketing and production operations in foreign markets (VitrA, n.d., Dünden Bugüne Vitra, para. 2). Having steadily increased its presence in international markets throughout the 1990s, in 1999, the company established its first manufacturing plant abroad, with a ceramic tile plant in Arklow, Ireland. And from 2000s onwards, it continued to expand its production operations in overseas.

During the 2000s, the company also began to direct significant efforts towards brand development (VitrA, n.d., Dünden Bugüne Vitra, para. 2) and set its long term goal to establish Vitra as a global brand (Topaloğlu & Er, 2010; 2011). In pursuit of this major goal, the company concentrated on repositioning the brand and increasing its brand recognition in international markets through a strong focus on the use of

design as the main driver of this new strategy (Topaloglu & Er, 2010). As Topaloglu and Er (2010) indicate beginning with the second half of 2000s, the company focused on “creating a brand image based on design competence, creativity, and product innovation” (p. 20); it renewed its brand identity, intensified product design activities, began collaborations with renowned foreign designers and accompanied these efforts with a consistent use of design in other significant areas like corporate identity, retail environments, as well as marketing and corporate communications. On the other hand, it also began to pursue a strategy based on international acquisitions and partnerships, acquiring leading brands of the European market like Engers, Burgbad and Villeroy & Boch, all in the second half of 2000s.

Coming to the 2010s, the company still maintains its global objective “to make Vitra one of the top bathroom brands worldwide” (Eczacıbaşı Group, n.d., Eczacıbaşı Building Products, para. 3), and declares that international sales and international partnership are the fundamental components of its long term growth strategy (Eczacıbaşı Group, n.d., Eczacıbaşı Building Products, para. 2). Furthermore, design has definitely become an indispensable element of company’s business strategy, as it is currently included in strategy formulation and planning processes (Design Director, personal communication, October 19, 2015) and the company affirms that “Design is a strategic component of the brand identities of Vitra and Artema – the Division’s faucet and bathroom accessory brand for the Turkish market” (Eczacıbaşı Group, n.d., Eczacıbaşı Building Products, para. 4). However now, in addition to its brand differentiation strategy based on design excellence, the company reveals that other integral components of this strategy are innovation and sustainability (Design Director, personal communication, October 19, 2015; Vitra, n.d., About Us). In 2011, the company established a large innovation center named *Vitra Innovation Center* in Bilecik Bozüyük and gathered company’s innovation activities carried out in different areas, such as bathroom and tile products, materials, processes and technologies under its roof (Vitra, n.d., Vitra İnovasyon Merkezi). On the other hand, in the sustainability front, the company has developed a system of guidelines named *Blue Life*, as a strictly followed and integrated approach to management, production and design activities of the organization. The company explains its Blue Life approach and how this is leading the company to realize its objectives regarding sustainability:

Blue Life is a set of guidelines embraced by the entire Division to protect and preserve the living world. Vitra upholds Blue Life as a production, design and management approach – from the extraction of raw materials for production, all the way to the finished product in use. Vitra plants are heavily invested in technologies that minimize resource use as well as

improve recovery and recycling rates. Through a series of stringent measures, water use during production was cut by nearly a third while power consumption fell by 15% in all Vitra manufacturing sites in just the last three years. Moreover, the brand promotes sustainability with all business partners, encouraging and guiding providers as they adopt higher standards. With its eco labels, Vitra is also raising its stakeholders and end-users awareness and engagement on green buildings. At the product development front, Vitra is focused on reducing individual water consumption with smartly designed bathroom products and appliances. New WC pans, urinals and faucets designed by Vitra teams save over 190 tons of water a year at the end user level, ensuring significant reductions in power consumption and carbon emissions as well. (Vitra, n.d., Corporate Profile, p. 17)

Currently, Eczacıbaşı Building Products is one of the world's largest manufacturers of ceramic sanitary ware and is among the leading players of the global ceramic sanitary ware as well as ceramic tile industries. Furthermore, having defined the main pillars of its business strategy as design, innovation and sustainability, the company asserts that it aims to continually improve its standing in highly competitive markets around the world (Eczacıbaşı Group, n.d., Eczacıbaşı Building Products, para. 2).

7.2 Development of Design and Design Management Capabilities

As a late industrialized country, especially the initial stages of Turkey's industrialization process was largely based on technological learning, and the transfer of foreign technologies to domestic industry contexts. In this sense, joint ventures and license agreements served as important means of acquiring and mastering the necessary technologies, and were commonly utilized by Turkish companies since the late 1950s (Kepenek, 1990). Similarly, establishing its first manufacturing plant in 1958, when the national industry lacked indigenous technological capabilities, Vitra Bath started its ceramic sanitary ware production in the context of license and know-how agreements that were made with a German manufacturer named Keramag (Er & Akay, 2001; Topaloglu & Er, 2011). These agreements involved the training of personnel regarding production technologies, as well as the transfer of products designed by Keramag for the German market to the Turkish market, through the purchasing of their production rights. The German manufacturer Keramag trained company's employees in its production plant located in Germany, transferring them production process skills in ceramic sanitary ware. However since the product designs were already purchased through license, the trainings did not involve any knowledge or skill transfer in terms of design. Consequently, beginning from its initial years and continuing on for a long while, the company did not carry out any creative design activities, other than some minor

product modifications in the purchased product designs, with the aim of adapting them to the requirements and standards of the local infrastructure and the market. Instead, in this first phase of company's development, the company mostly focused on the development of its manufacturing, and plant management capabilities and carried out necessary product modifications through the help of ceramic modellers.

The company began to feel the need for carrying out design activities for the first time in the context of some redesign activities regarding certain traditional products, like squatting type toilets and water storage units that were used widely in Turkish baths (Er & Akay, 2001; Topaloglu & Er, 2011). Because these products were originally made of marble or stone, and were particular to the local culture, they had to be designed and developed to be produced in ceramic, based on local capabilities. Therefore, with the objective of designing and producing the ceramic counterparts for these local products, a small unit was established inside the production plant under the name *Form Searching Unit* (Topaloglu & Er, 2011). The staff began to carry out design and modelling activities for these traditional products, as well as being responsible for product modifications and the prototyping of licensed product designs (Topaloglu & Er, 2011). Until the early 1980s, design activities continued along these lines and were limited to product modification and redesign activities. Additionally, operating inside a protected domestic market with very limited imported products and facing almost no competition due to being the single large scale manufacturer of ceramic sanitary ware, the conditions of the external environment did not necessitate any product differentiation or systematic and creative product design activities for the company for a long time.

However, beginning with the 1980s, the company increasingly started to feel the need to develop new and original product ranges. This was due to significant transformations taking place inside the Turkish industry and market structure, as a result of a major change in Turkish industrialization strategy. As mentioned before, the transfer from import substitution based development to export-led growth policy was further accompanied by the removal of trade barriers and government incentives to support exports (Ahmad, 1993; Kepenek, 1990). As a result, the domestic market was progressively opening to foreign competition. Additionally, new ceramic sanitary ware manufacturers were being established in the local industry, further increasing competition and compelling the company to undertake activities targeted at product differentiation. What's more, similar to many other Turkish companies, the company had begun looking for opportunities in export markets. All together these conditions initiated the development of in-house design activities, this

time targeted at the creation of totally new product ranges. *Truva* and *Bergama* were the first bathroom suites developed by the in-house design staff (Er & Akay, 2001). In addition to the development of in-house design capabilities, the company started utilizing external design expertise and commissioned German and Italian designers for the generation of new product series. These collaborations with external designers were also significant in terms of the advancement of in-house design skills, since they provided training opportunities for the in-house design staff by letting them visit their offices and observe their methods of design and presentation (Topaloglu & Er, 2011). It is observed that as the company began to be more active in export markets and faced increasing competition in the domestic market, it started to see design as a major tool to increase competitiveness and began to integrate design as an essential component of its new product development efforts.

During the 1990s, design activities accelerated together with the further development of design skills and experience, in terms of both in-house design capabilities and the management of external design professionals. In this period, *Form Searching Unit* became the Vitra Design Department, which was now directed by a design manager. Additionally, the company continued to utilize external design expertise, specifically for products that were directed at foreign markets and for advanced projects such as those focusing on special user groups like disabled and elderly. These collaborations also contributed to the advancement of design management skills in the areas such as selection of external designers, design briefing, design project management, and the coordination of design with product development, production and marketing processes. As a result, "By the end of the 1990s, the company had acquired advanced industrial design capabilities, from new concept development to the testing of prototypes" (Topaloglu & Er, 2010, p. 20) and design activities were beginning to receive a heightened attention throughout the organization. It is observed that this period also served as an important phase for company's increasing awareness regarding design's more strategic roles, such as its contributions to the improvement of brand identity, brand recognition and the development of a design-driven organizational culture (Topaloglu & Er, 2010, 2011).

Together with 2000s and especially after 2005, a new stage began to be discernible in the organization's approach towards design. This stage is strongly connected to Vitra's intensifying brand development efforts. Specifically after the company set its long term goal to establish Vitra as a global brand, it is seen that design was strongly embraced as a central component of Vitra's strategic renewal and organizational transformation strategy. In this respect, the company formed a design

board comprising of top level managers, increased its design investments, restructured its design organization, and began undertaking leading design initiatives. More importantly, this time the utilization of design was not solely targeted at product differentiation but revealed an integrated approach towards design use in different fields ranging from graphic design, identity design, product design, to the design of point of sales and retail environments. The first signs of this new period began with the launch of Vitra's renewed brand identity in the beginning of 2006. At the same time the company launched a product collection named *Istanbul* which was the outcome of a very large scale design project that was initiated in 2004 and which was carried out with the highly renowned designer, Ross Lovegrove. Concurrently, the company renewed its retail environments and marketing communications that ranged from advertisements to product catalogues and web design. Similarly, Topaloglu and Er (2010) portray the developments taking place in this period:

[...] the decision to establish Vitra as a global brand, and the embrace of the strategic use of industrial design, were fully supported by corporate management and driven by the inclusion of industrial design as part of corporate strategy. Vitra Bath started to use design as the keyword in its marketing campaigns, press bulletins, and other PR material. Significant financial resources were allocated for the creation of new product ranges, and for commissioning prominent industrial designers who could draw global attention and strengthen Vitra's brand identity. (p. 21)

Additionally, starting with this new period, design was embraced as a core value of the brand (Marketing Services Manager, personal communication, November 6, 2015) and was effectively integrated into company's corporate communications in different spheres. The company started to underline its design commitment in every possible medium such as its website, its catalogs, its press releases, as well as the verbal communications of the company managers towards internal and external audiences.

2004 had marked the beginning of these major steps towards an increased integration of design into company's business strategy and the transfer from the use of design as an operational tool in product development to its strategic use by identifying wide ranging roles for design throughout the organization. Since then, the company has been revealing a consistent approach towards the use of design in different areas, with a clear focus on establishing and maintaining their coherence and consistency. Besides, the organization is also observed to concentrate on the development of its in-house design capabilities; advancement of its design management skills and organization, as well as improving design's integration and

diffusion throughout the organization over a decade. In this respect the company is among the few companies in the Turkish industry at large, which has identified design's strategic importance and has consistently been focusing on the improvement of design's integration, management and influence inside the organization ever since. However it must also be mentioned that this recognition regarding the importance of a strategic management of design has been cultivated in the course of years of experience in carrying out design activities with in-house as well as external designers. As Topaloglu and Er (2011) indicate "these developments towards design's integration with corporate strategy were the result of a long process of accumulation and development of industrial design capabilities, and the corresponding evolution in the nature and role of industrial design activities throughout different stages of development of the company" (p. 4).

The following section focuses on presenting findings regarding the current design management capabilities possessed by the organization, following the structure of the *Design Management Audit Framework*, which is provided in Appendix A and which had already been detailed in chapter 4.9.

7.3 Analysis of Design Management Capabilities

7.3.1 Design in strategy

7.3.1.1 Strategy formulation process

Eczacıbaşı Building Products announces its strategic vision as "to make VitrA one of the top bathroom brands worldwide" (Eczacıbaşı Group, n.d., Eczacıbaşı Building Products, para. 3). This objective is consistently declared in its websites, press bulletins and corporate catalogues since 2005, when the company has noticeably renewed itself in several spheres. It is seen that in pursuit of this chief objective of becoming a global brand, the company has identified 3 major strategic pillars as: innovation, sustainability and design. These pillars have been mentioned several times during the interview with the design director, are consistently highlighted in corporate communication mediums such as corporate websites and catalogues, and are revealed in the context of several corporate systems and initiatives. Some important examples from these systems and initiatives are: the establishment of an innovation center in Bozüyük, which focuses on "the design, development and production of new raw materials, processes and technologies for bathroom products

and tiles"⁴; existence of a sustainable production, management and design approach named Blue Life⁵; and the integration of design into company's business strategy and brand management⁶, as well as continuous investments for design especially since the last decade. The company has been reflecting its design focus and commitment in its corporate catalogues, websites, press bulletins, as well as in speeches given by top managers of the organization in different occasions and contexts since the second half of 2000s.

Design is at the core of the Vitra brand. In order to demonstrate its commitment to innovation and to bringing millennia of Turkish ceramic and bathing culture into the 21st century, Vitra has built a stable of designers that help identify new directions within bathroom and tile design. [...] This approach has made Vitra internationally recognized for its sophisticated aesthetic and fine-tuned ideas and concepts, which have earned the brand some of the world's most prestigious design awards over the years. (Vitra, n.d., Design)

Design is a strategic component of the brand identities of Vitra and Artema – the Division's faucet and bathroom accessory brand for the Turkish market. For this reason, Vitra Bath is collaborating with internationally renowned designers and design houses to develop highly innovative and original bathroom solutions for professional and residential use. (Eczacıbaşı Group, n.d., Eczacıbaşı Building Products, para. 4)

It is observed that the company has well structured systems and procedures in place for its strategy formulation, strategic planning and communication processes. Because the company belongs to the Eczacıbaşı Group, consisting of 41 companies in 4 different sectors, long term strategy formulation for all companies under the group are guided by Eczacıbaşı Holding's board of directors and strategic planning & business development department. The marketing services manager of the company explains that business strategies for all companies under the group are formulated by Eczacıbaşı Holding, for a horizon of 3 years (Marketing Services Manager, personal communication, November 6, 2015). The strategy formulation and planning for 2016 to 2019, begins in January, 2015 and strategies are developed and finalized through 3 major meetings that are held in January, June and November. After the 3 year strategy is finalized by the holding, in terms of geographies, brands and the organization, it is transferred to Eczacıbaşı Building Products for further development. From here on, the company develops its yearly

⁴ <http://www.vitrainnovationcenter.com/>

⁵ "Blue Life is the production philosophy, design attitude and management outlook of all Eczacıbaşı Building Products Division brands including Vitra, Artema and Vitra Therm." (Vitra, n.d., Blue Life, p. 4)

⁶ The company's commitment to design and design being at the core of the Vitra brand is expressed in its website (for example see <http://enexp.vitra.com.tr/About/Design/Overview>), corporate catalogues (Vitra Corporate Profile) and press bulletins, as well as by key informants interviewed throughout the case study.

business strategy and plans based on this 3 year strategy provided by the holding. As the Marketing Services Manager explains this is the stage, where design enters the business strategy and planning of the company (Marketing Services Manager, personal communication, November 6, 2015).

7.3.1.2 Strategic planning process

In the light of the 3 year strategy provided by the Eczacıbaşı Holding, every year, the company carries out a detailed and structured business planning regarding different geographical regions and covering its overall product range. The strategic planning period starts every year around August and ends in November. As explained by the Design Director, strategy formulation and business planning is broken down into the major areas of: innovation, design, marketing and sales. The process is guided by structured information and inputs, such as economic analysis, market analysis, growth potentials, previous year's performance results and the following year's expectations and financial evaluations (Design Director, personal communication, October 19, 2015). The design director further explains that strategies and plans are developed through several iterations and scheduled meetings involving directors of innovation, design, marketing, sales, finance and human resources departments.

7.3.1.3 Strategy and planning communication

Regarding the communication of strategies and plans, key informants express that information is communicated effectively according to the principle of giving sufficient information to necessary parties. The overall strategic vision and goals are communicated to all company staff through a regular meeting conducted every year in January, named *Goal Sharing Meeting*, where the general manager and the departmental directors communicate strategic goals, as well as departmental objectives through their individual presentations. Whereas, detailed business strategies and plans are communicated to senior management, with regular meetings that are held twice a year, where the management issues regarding these strategies are also considered. Marketing services manager adds that every 3 months, departments carry out evaluation meetings to assess how they are performing in achieving their intended plans (Marketing Services Manager, personal communication, November 6, 2015). She underlines that besides the communication of strategies and plans, there is also an effective overall communication throughout the company that is supported through systems such as the intranet, the internal communication system of the company; an internal TV

system broadcasting company news and information; as well as a monthly newsletter prepared by the human resources department regarding company news and developments.

7.3.1.4 Design in strategy

As stated before, a central component of business strategy is design. In addition to the interviews with key informants, company brochures, websites, press bulletins and the broad range of design activities carried out by the organization strongly support the finding that design is integrated to the organization at the level of strategy⁷. When inquired about how the company formulates its design strategy inside its business strategy planning process, the design director explains:

We look at our product portfolio and try to understand the gaps or groupings. If this is a continuation of the previous year, we look at how much it has been filled. Therefore, we say we want to go in this direction, but how does our current product portfolio answer the requirements of this place we want to go towards. Secondly, we look at our competitors in terms of design; they may not necessarily be our competitors in financial terms; we may not be selling in the same geography. Other than that, we look at what people in this industry are doing around the world, where the world has gone visually. Third, we observe where the world is going in a wider angle, which means when you take a step back, where is the world of design going in total, what happened in furniture, or in fashion, or in architecture. According to all these analyses we decide on which direction we should go, the gaps we need to fill, new definitions we need to make, and try to pair all these inside the framework of an overall business plan. So to speak, we look at these new decisions we are taking, things we are planning to do, and analyze how and where they support the business plan, in which respects they do not keep up with it, or which ones seem to look detached from the business plan as aesthetic decisions that somehow stay in the air or we question if we give them some more substance. This is how it proceeds. (Design Director, personal communication, October 19, 2015)

7.3.1.5 Design's input to strategy formulation

Additionally, design's involvement in, as well as its input to the business planning process is observed to be high, since the design director is an integral member of strategic planning meetings, on equal stature with other functional departments such as marketing, sales, innovation and finance. The design director explains that throughout the structured strategic planning process which takes place every year, ideas, information and suggestions concerning design and product development

⁷ For details regarding the company's commitment to design and design's place inside Vitra's business and brand strategy see <http://enexp.vitra.com.tr/About/Design/Overview>, corporate catalogue named Corporate Profile (Vitra, n.d., Corporate Profile) and press bulletins (Vitra, n.d., Basın Odası).

strategy are communicated to the top management team (Design Director, personal communication, October 19, 2015). At this point, he strongly underlines that they pay great attention to achieving a significant level of integration between design strategy and the strategies of other major business processes in the generation of the overall business strategy and plan.

We should take this direction; we should work like this; there are opportunities in this area; there are such and such risks... You can say all these, but at the end, these should somehow find a counterpart in sales, in innovation... (Design Director, personal communication, October 19, 2015)

The suggestions and input provided by different departmental directors are then analyzed and integrated by the marketing department, which is responsible for giving the final shape to the overall business strategy and plan. Similarly, marketing services manager expresses that design strategy and plans are developed and finalized through a close collaboration between the design director and marketing directors (Marketing Services Manager, personal communication, November 6, 2015). While marketing provides data and analysis regarding markets, market requirements, and portfolio gaps in different markets, design provides direction regarding design approach based on design research, trend analysis, and information gathered through fairs and other sources.

Consequently, it is observed that design is part of company strategy and business plans with a clear design strategy, objectives and direction for design. Additionally, it was seen that the company focuses on the integration of design strategy with the strategies and plans of other functional areas, such as innovation, marketing and sales. This integration seems to be achieved through a structured strategic planning process that facilitates and ensures the inclusion and integration of inputs from all major functional departments including design. Through this clearly defined and administered strategic planning process, each departmental director is informed about each other's perspective and business approach, and works towards the generation of an overall business plan that aligns their individual departmental strategies and plans.

However, it is seen that design's input to business strategy and planning still remains confined to a focus on the generation of products. Consequently design strategy is established mostly at the level of product design, based on an approach that tries to integrate market requirements and gaps with trends and developments in the world of design and architecture. Design's consideration in the context of other design fields mostly takes a subordinate role.

7.3.2 Planning for design

7.3.2.1 Design planning

It is observed that planning is an organization wide approach to carrying out business activities, from marketing and sales to product development and design. Design Director details that the design planning process is actually strongly integrated with the overall strategic planning process of the organization (Design Director, personal communication, October 19, 2015).

Throughout the strategic planning process, several analysis such as benchmark analysis, trend analysis and product portfolio gap analysis are conducted by the marketing department in close collaboration with the design department. In this sense, the marketing department plays a pivotal role in shaping both the business plan and the product development plan of the company, since it functions as the final integrator that gathers, combines and aligns the inputs from different functional departments. After the overall business plan is finalized by the marketing department, a major product development plan is generated and communicated to departmental directors. Design director explains that from then on, he carries out his own detailed planning for design projects, their scheduling and budgets based on the overall business and product development plans.

7.3.2.2 Design planning horizons

Being based on the yearly product development plan, design planning similarly has a yearly horizon and its time planning is carried out based on the dates of major national and international fairs of the industry. The organization also has product development plans that have a horizon of 2-3 years, mostly for projects that are complex in nature, new to the market or that require intensive research and development. Yet these plans are more provisional in nature; can be changed, realized or dropped out more easily compared to the yearly, more explicit plans. Therefore the design director indicates that design planning is done on a yearly basis, where these more long term and provisional plans are updated every year as part of the yearly design planning.

7.3.2.3 Design policy and standards

According to the design director, up to now, the organization had followed certain design guidelines that were largely implicit and tacit in nature. They are not explicitly stated or established through an official document or a manual named design policy, design standards or design guidelines. However, when specifically asked about the

existence of a design policy or standards, design director expressed that he had been working on the generation of a published design policy and standards document named *Design DNA*, by identifying design guidelines that have been followed consistently throughout the years (Design Director, personal communication, October 19, 2015). This is expected to be finalized and communicated very soon. Corporate communication documents and corporate website likewise reveal the existence of a certain corporate design attitude and specific notions that guide design decisions of the company. As an indication, the following excerpt from the corporate website is an example that gives clues regarding the company's design approach.

Design can be interpreted as a concept related solely to aesthetics. According to Vitra, good design should incorporate innovation and substantiate in a product that is augmented with additional functions that the customer is not aware of. It must be integrated with research and development, utilize technology, and be founded on accumulated knowledge. It must be original, clear and simple, involve novel and smart technologies, possess a holistic product concept⁸. (Vitra, n.d., Tasarım, para. 3)

7.3.3 Investments for design

7.3.3.1 General budget allocation

As can be expected from the large scale of the company, having about 6500 employees, general budget allocation is carried out in a highly systematic manner, where the budget allocation decisions are guided by financial evaluation and risk assessment tools. Every year, after the finalization of the yearly business plan, departments are asked to estimate their budgets and deliver their budget requests to the finance department. The department of finance analyzes these budget requests, and after a process of negotiation, it allocates the yearly budget to each functional department (Design Director, personal communication, October 19, 2015). Additionally, key informants express that structured financial mechanisms are utilized in planning investments, assessing risks and projecting the returns on investments.

7.3.3.2 Design budget allocation

Especially since 2005, the company has been allocating significant budgets to design activities. Just a brief look at the portfolio of designers the company has

⁸ Translated from Turkish by the author.

worked with up to this date, provides significant evidence that the company allocates noteworthy budgets to design, innovation and product development activities⁹. This is also confirmed by all informants interviewed throughout the case study.

Besides having an in house design team of 20 specialists (with backgrounds in the fields of industrial design, graphic design, architecture and interior design), the company is seen to cooperate regularly with external designers since the beginning of its first design activities in the 1980s. Yet throughout the years, the selection of external designers have increasingly moved towards collaborations with renowned foreign designers, which also indicates that the financial resources allocated to design have also grown considerably in amount throughout the years. As mentioned before, in 2004, the company started working with Ross Lovegrove for a very large scale design project named the *Istanbul Collection* (VitrA, n.d., The Ross Lovegrove Collections Istanbul, MOD & Freedom), which was launched in 2006 and which constituted the highest budget allocated to design in the history of the company. Besides, the collaboration continued in the following years, resulting in 2 other product collections by the designer, named *MOD* and *Freedom* (VitrA, n.d., The Ross Lovegrove Collections Istanbul, MOD & Freedom). Matteo Thun, Pentagon Design and Christophe Pillet are among some other prominent names of the design world that the company has worked with in the last decade (VitrA, n.d., Tasarımcılar).

Additionally, it is seen that design investments are not limited to industrial design activities but also cover graphic design, interior design, point of purchase design, exhibition design, and architecture (Design Director, personal communication, October 19, 2005). However design activities in fields other than industrial design mostly take secondary and supportive roles.

The company is highly aware that when they allocate resources to design, besides the potential financial returns from sales, there are also other very important and more long term returns like strengthening brand identity, increasing company reputation and brand loyalty. This awareness seems to be a major factor behind their significant budget allocation decisions regarding design activities.

However the interviews reveal that the company has not developed any systematic evaluation methods to guide design investment decisions, or to assess the returns

⁹ A list of designers is provided in the company's website, which can be accessed from: <http://vitraglobal.com/about/design>

from design investments. Design investment decisions and how much to invest in design are mostly guided by experience and tacit knowledge that has been accumulated since the beginning of company's investments in design. Design Director explicates that the company has been carrying out and directing both in-house and outsourced design projects since many years and through this accumulated experience it has determined a certain budget allocation approach:

In this tradition it has adjusted a certain approach. [...] We are talking about a method and practice that has been set based on trial and error over the years. (Design Director, personal communication, October 19, 2015).

He also mentions the difficulties involved in isolating the specific contributions of design from other dimensions and how this is making it difficult to develop a more analytical approach to design budget allocation decisions.

7.3.4 Design processes

7.3.4.1 General process awareness

The company is assessed to have a high level of general process awareness. Back in 1993, during the acquisition of the Quality Management System Certificate (TSE EN ISO 9001:2000), the company had already defined, detailed and documented all the activities carried out by the business as processes. To satisfy another major requirement of the Quality Management System certification, the business has developed tools to measure and evaluate process outcomes, and is seen to use these tools for continual process improvement.

As an indication of its focus on process improvement and quality management, it must be mentioned that the company has received two prestigious quality awards: the TÜSİAD-KalDer National Quality Award in 1998, and the Quality Prize given by the European Foundation for Quality Management (EFQM) in 2000. The interviewees similarly point the high degree of process awareness inside the business, expressing that all the activities that are performed throughout the business are clearly defined as processes, with detailed documentation and process maps to be consulted when necessary.

7.3.4.2 Design process awareness

Similar to other major processes such as production, marketing, and sales, the design process is also clearly defined by the organization through detailed process maps. Moreover the design process is seen to be carried out as an internalized routine due to years of experience accumulated in carrying out design activities both

through in-house capabilities and processes and through the use of external design professionals. Additionally, the organization is observed to have developed different processes for design, based on the project characteristics. Design Director explains that they approach the design process based on 3 different project types:

We carry out projects at 3 levels, because every level has different requirements. For example if we need just a single toilet for a very specific objective, we just need a toilet, it doesn't matter that you think conceptually or not, here you need styling. On the other hand there are things that have been applied in other contexts but not in this market, so we need their adaptation to this context, there we work jointly with product development. And last, there are more conceptual projects, but these projects are based on another plan. (Design Director, personal communication, October 19, 2015)

7.3.4.3 Design process management

Design processes are seen to be managed in a systematic manner, using project management tools such as time planning, project reviews, time and cost monitoring. Additionally other important, design specific project management tools are utilized, such as detailed design briefs and design project evaluation tools. Design director explains that although the design department provides the briefing format, design briefs are developed by the marketing department in collaboration with the design department. They are updated and finalized through a collaborative process, taking into account the ideas and suggestions provided by the design department. Additionally, throughout the design process, several design project reviews are conducted by the design department together with other departments, such as marketing, innovation and sales based on the the project characteristics. Similarly, at the end of the design process, the proposed design outcome is again reviewed by these parties. But this time, the evaluation is supported by a structured design evaluation scale, which is derived for each project based on the initial design briefing criteria.

7.3.4.4 Design process thinking, methods and tools

To assist design processes, several methods and tools are seen to be utilized by the organization in different phases of the design projects. These include market research, brainstorming, moodboards, mindmaps, user analysis, photographing, sketching, 3D modelling using computer aided design tools and prototyping. Nonetheless, not every project follows a strict route in terms of the utilization of design methods and tools. The design director expresses that they are experienced in using almost every method and tool that one can come across if one googles the

term design methods, but the choice of different methods depends on the characteristics of each project:

When the project brief comes, we spend time on figuring out how to attack each project. That's why we do not have a specific formulation. [...] Each project has its own character and should proceed with those methods that are appropriate for it. (Design Director, personal communication, October 19, 2015)

7.3.4.5 Design evaluation processes

The evaluation of design projects are carried out methodically. Since the design briefs clearly specify the criteria against which to assess the success of project outcomes, these criteria are then turned into scales to be utilized in the evaluation of project outcomes. Although the company tries to consider the response coming from different parties through the use of these evaluation scales, Design Director explains that the final decisions are given by design and marketing directors, based on a final assessment of design evaluation scale results, as well as the overall project goals:

We have scales. Sales teams, design, marketing, everyone who is internally involved in the project fills out these scales. We make 2 evaluations. In these scales, everyone rates the outcome from 1 to 5. We then analyze the ratings. We look at the ratings but the decision is usually made by the design director and the marketing director. We try to understand what the results mean, what the democratic choice is. But the democratic choice does not always win. If we believe that we have an important reason behind our decision we continue with that. (Design Director, personal communication, October 19, 2015)

Although prior to product launch, design project evaluations are highly structured, the company does not carry out any form of design evaluation after launch. It does not have in place any tool or approach for tracking market response or the returns of design investments in a broader sense. Actually when the current design director was questioned regarding methods or tools utilized specifically for evaluating the returns of design investment decisions he pointed to the well known challenges concerning this subject:

It is highly complicated. Does that product sell because it is there, because of its price, because it answers a certain need of the customer or because he likes it, I do not know. (Design Director, personal communication, October 19, 2015)

However, marketing services manager expresses that in order to get an insight about market response, they make use of systematic surveys that are conducted during major industrial fairs, where the products are exhibited for the first time (Marketing Services Manager, personal communication, November 6, 2015). She also adds that they are currently working on a project that will enable them to track customer satisfaction with the products also in after purchase contexts.

7.3.4.6 Legal processes for design

It is observed that the legal protection of design based intellectual rights is an established part of design management processes that is carried out consistently and professionally. The design department has staff specialized for carrying out legal processes for design, who is also supported by the company's lawyers and the marketing department. Although the company tries to protect most of its products through industrial design registration, legal protection through design patents is not applicable to every single product that is produced by the company. Typically, the design department guides decisions regarding which products to legally protect. However requests for industrial design registration can also come from other departments such as sales or marketing departments.

7.3.5 Design organization

7.3.5.1 Design management responsibility

2 years ago, the company underwent a major organizational restructuring concerning design. Before this, the design department was structured under the marketing department. It was headed by a design manager with a team of 6 industrial designers. In this structure, project and organizational level design management responsibilities were carried out by the design manager, but the responsibility covered only the management of industrial design activities. Whereas the management of activities carried out in other areas of design were mostly under the responsibility of the marketing department. Additionally, strategic level design management responsibilities were carried out (again with a focus on product design) together with the marketing manager, who was much more active and influential in the formulation of corporate design strategies, and decisions regarding design's contribution at the strategic level.

On the other hand, in the new structure, the design staff in other fields, such as ceramic tile designers, graphic designers, interior designers, point of purchase and exhibition designers that were previously dispersed throughout the organization, are united under the single roof of a larger design department. Additionally, the design department is now headed by a design director, who is directly responsible to the general manager. Equally important, for the first time in its organizational structure, design director is now on identical standing with other major departmental directors such as those for marketing, innovation and sales. This is also a positive indication regarding design's progressing role, as well as its increasing level of integration within the company.

Design director is now responsible for all design activities from products and graphics to retail spaces and exhibition, which increases the coordination and consistency between activities that are carried out in different design fields. Besides his tasks concerning project level and organizational level design management, he is also responsible for carrying out strategic level design management tasks.

Additionally, due to company's acquisition of 51% share of the ceramic tiles division of Villeroy & Boch in 2007, the design director is also in charge of the design studio located in Germany that is responsible for the design activities regarding Villeroy & Boch branded ceramic tiles.

7.3.5.2 Design skills

As mentioned before, the company has an in-house design team consisting of 20 designers coming from various backgrounds. Besides 6 industrial designers that focus on ceramic sanitary ware, faucets and accessories; there are also ceramic tile designers, graphic designers, interior designers, and architects among the in-house team.

In addition to having a broad range of in-house design skills, the company consistently collaborates with external designers, mostly for projects targeted at the high and upper-mid markets. Design Director indicates that design activities regarding bathroom products (including ceramic sanitary ware, bathroom furniture and accessories) are almost equally shared between the in-house design team and external designers (Design Director, personal communication, October 19, 2015). It is observed that in the past, the company had been relying more on the use of external design expertise in these product categories, with 70% to 80% of projects being carried out through collaborations with external designers. Yet, together with increasing capabilities of the in-house design team, a larger percentage of design activities are seen to be carried in-house. This percentage is even larger for ceramic tiles, as the Design Director as well as the Marketing Manager indicate that 80% of design activities are carried out through the use of in-house skills.

7.3.5.3 Organizing for design

As previously mentioned, the company prefers working with external designers in the context of projects targeting upper middle and high income segments. Whereas for projects targeting middle income segments and for more small scale projects in-house skills are preferred. The level of creativity and innovation targeted in the final outcome are among other major considerations when organizing design activities.

When commissioning external design expertise, the company focuses on selecting designers based on the specific objectives of each design project. In addition to the goals of attaining an increased level of creativity, facilitating innovation and the flow of new ideas; knowledge and experience regarding target markets are other important motives for commissioning external designers. Design Director explains their approach towards the selection of designers:

We try to select designers based on our strategic decisions and goals. We try to select designers that produce, think and work in a way that is aligned with our goals. [...] Our selection changes based on the characteristics of the project. If it is a design-driven project, it's more appropriate to make the selection based on the style of the designer's work. If we are looking for a certain style, and we think a designer is good at designing in that style, then we opt for him. If the project is more market-driven and our goal is penetrating a certain market, then we look for designers that know that market, its preferences and expectations well... designers who have produced effective results for that market as well as those who can think with the logic of our project. These are our criteria. Whereas, if the project is based on innovation, then we either expect the designer to have high engineering skills or to be more experimental in his approach so that he can bring out an innovation. (Design Director, personal communication, October 19, 2015)

Additionally, the organization of design projects are carried out in collaboration with marketing and innovation departments, with responsible staff from each department being assigned at the start of the process.

Everyone provides suggestions regarding their related area. If this is about design, design department says this designer is okay, if this is about a surface development concerning innovation, then innovation department says that we can get information from these departments and/or parties. [...] This is included in the brief. In our briefs we say that this project is carried out with this team. Before determining the project team we carry out related correspondences and then we say the team and the related personnel are these. (Design Director, personal communication, October 19, 2015)

These are clear indications that selection of designers, as well as the organization for design projects are carried out in a structured way. Additionally, Design Director reveals that there are routines and procedures to ensure that internal and external contributions are brought together throughout design projects. This is ensured mostly through regular project reviews, but also by establishing a clear line of communication and organization between team members in the context of each project.

7.3.6 Research for design

7.3.6.1 Design research programs and resources

The company is observed to carry out different research activities that either feed on to design, or that are carried out alongside design processes. These include market research, competitive analysis, trend & lifestyle research and user studies. Competitive and market research mostly guide the generation of design briefs as well as the earlier phases of design projects, whereas user studies, although conducted very rarely, are carried out in the later phases.

The company is currently carrying out a research project concerning user studies, which specifically focuses on the notion of universal design. Design Director explicates that the research is part of a product development program targeted at widening the product range on offer for disabled and elderly. But when inquired about other research activities that had been carried out in the past regarding users, he reveals that this has been largely neglected. Other than these activities, research for design seems to be conducted as found necessary. In this sense it is seen that the company does not carry out design research on a broad, programmed and structured manner. Additionally existing research activities are mostly weighted towards research on markets and trends, overlooking other significant areas such as technology, usage contexts, materials or ethnography.

7.3.6.2 Information and idea networks

The organization has several information and idea sources to support design, such as a small library inside the design department, subscriptions to numerous design magazines (Frame, Wallpaper, Elle Decor, Interni), and regular attendance to major industrial fairs. Besides, the company tries to encourage the attendance of design staff to conferences, events and workshops. The company is also a member of ISCID (International Council of Societies of Industrial Design), which only has 4 corporate memberships from the Turkish industry. Although not on a systematic basis, the company also carries out collaborative design projects with universities. In the past, projects had been carried out with interior design, architecture and industrial design departments of leading Turkish universities such as Middle East Technical University (METU) and Istanbul Technical University (ITU).

Additionally, similar to many other businesses that are active in the building products sector, the company has strong relationships and networks with architects and interior designers. Yet these networks are mostly marketing and sales oriented and

do not seem to be utilized effectively as information and idea sources for design. Overall, although there are several information sources and some idea networks that feed into design, a deliberate focus on the establishment and improvement of an array of information and idea networks for design does not appear to be in place.

7.3.7 Training and development for design

7.3.7.1 General training and development

The company carries out regular training and development programs for all employees. These are planned yearly, by the human resources department and directed at both personal and professional development (Design Director, personal communication, October 19, 2015). Trainings include skills programs, such as advanced excel techniques, presentation skills, conflict management; as well as those concentrating on increasing confidence, self-expression, and initiative taking among employees (Marketing Services Manager, personal communication, November 6, 2015).

7.3.7.2 Nurturing skills and creativity of design related personnel

Besides these general programs targeted at all company staff, there are also specialized training and development programs for designers. These are also planned yearly by the human resources department in collaboration with the Design Director and monitored throughout the year (Design Director, personal communication, October 19, 2015). Additionally, when designers need to gain technical knowledge regarding a project or a specific subject, necessary training programs are organized. Designers are also sent to industrial fairs; design and art exhibitions; and musical and artistic events, with the main objective of nurturing their creativity. Additionally, the company supports training and development requests that come directly from in-house designers.

7.3.8 Design integration

7.3.8.1 Coordination and communication with other business functions, strategies and processes

As mentioned before, the design director is part of strategic planning meetings, on equal stature with other major departmental directors. This structure is observed to facilitate communication and coordination between design and many closely related business functions such as marketing, innovation and sales. Consequently, the integration of design with other business processes and functions is seen to begin at

the level of business planning. The design director underlined several times throughout the interview that yearly business planning is largely based on a process of aligning strategies and plans of marketing, sales, design and innovation departments. Specifically regarding the integration and coordination of design strategy with the strategies and plans of other departments, he explains:

We look a little bit from a far vantage point and say that we need these types of functions or these types of styles, or we need to be more active with regards to this issue, what can we do here? But this strategy has to be joined with the strategy of marketing, at the nearest, and one level up from this, has to be joined with the expectation of sales, and on the other hand it has to pair with the strategy of innovation. For example if I say that I have to make more technological products, or thinner products, this is as much a decision concerning engineering capabilities as it is a decision regarding design. Hence, it must be aligned with expectations or capabilities that can be supplied. And marketing and sales should be ready to sell these products. This is why later we try to match these strategic plans. (Design Director, personal communication, October 19, 2015)

Existing organizational structure, as well as a business planning process that focuses on strategy alignment, seems to provide an effective framework to enable integration, communication and coordination between design and other business functions.

Similarly, Marketing Services Manager considers design as the "sine qua non life partner of marketing" and believes that they are quite effective with regards to the integration of design strategies and processes with marketing strategies and processes of the organization (Marketing Services Manager, personal communication, November 6, 2015). She also reveals that this capability has been developed slowly throughout the years, as the company moved from a sales driven strategy to a marketing driven one, which has also resulted in a growing orientation towards design inside the business:

Throughout the years, our company has gradually evolved from sales management to marketing management. After the completion of this transition, the company slowly became more and more design oriented. In this respect, now that we interact more with our designers and include them in yearly business planning, I don't think we have any shortcoming regarding the integration and coordination of design with marketing. (Marketing Services Manager, Personal Interview, 6 November, 2015)

Additionally, she explains that they try to strengthen design integration throughout the organization by organizing design talks every 2 to 3 months in the company's innovation center. In these design talks designers from different sectors, as well as designers from the in house design department make short presentations, discuss trends and hold conversations regarding different aspects of design.

In terms of its daily processes, the design department is in closest contact with marketing and innovation departments. Whereas, communication with other departments is carried out when necessary. Coordination and communication is ensured at the level of business activities and throughout design projects, by procedures that clearly appoint staff from different departments to specific projects. At the beginning of each design project, the project team is assigned and communicated, letting everyone know who to contact with respect to issues regarding marketing, design or product development. Additionally, meetings with necessary departments or experts are quickly arranged and held out whenever required. As a result, these routines seem to facilitate an effective coordination between design and other functions.

7.3.8.2 Role and place of design

Coming to the roles of design throughout the organization, it is seen that design works as a key driver of the new product development process, as well as an important tool in design driven innovation. Design is observed to be incorporated into many other important business processes such as brand development, corporate communications, marketing and sustainability. However design is not currently integrated into all these processes in their earliest stages of ideation and strategy formation. It is observed that design is consulted towards the later phases of application. Still, there exists several projects where designers have been invited in the initial phases for their insights and collaborative input.

This happens both in projects that we have initiated and that we drive and projects driven by others where they need our mind, ideas and thinking. If it is a universal design project it is mostly driven and carried out by design, but if it is a project regarding communication and if design's role is significant, they carry out the project by including us from the beginning. (Design Director, personal communication, October 19, 2015)

Design's role can be observed in almost all of the company's corporate communication mediums, including its corporate identity program, brand identity, catalogues, products, point of sales, environments, as well as marketing campaigns. Marketing communication strongly underlines design and innovation as the core values of the brand. Whereas in terms of design's role in sustainability, the company is seen to focus on the generation of products that specifically target environmental concerns and sustainability objectives, such as energy efficiency and the reduction of water and material use. Yet in this context it is the innovation department that works more intensely rather than design. The company has a special catalogue for the range of products that provide solutions for green buildings, with details on

green building certification system requirements; how each product satisfies these conditions and advantages that can be earned through the use of these products.

7.3.8.3 Breadth of design

The breadth of design activities range from industrial design to graphic design, web design, interior design, point of sales design, design of retail environments and exhibition design. A considerable percentage of design activities in these areas are carried out through in-house design skills. Yet as have been previously detailed they can also be outsourced to external design professionals and studios, with industrial design constituting the design area in which external expertise is utilized the most.

Although the company reveals a very high level of design integration, the company has not yet expanded its design use to other important design areas such as service design or experience design which can provide significant potential in terms of improving customer experience.

7.3.8.4 Coherence and coordination between different areas of design

A high level of consistency and coordination is observed in terms of the outputs of different design disciplines. This is seen to be achieved by bringing together all design staff that was previously isolated in different departments, under the single roof of a design department. Now, the point of sales designer can easily communicate and coordinate with the industrial designer, who is working on the product that will be displayed in that specific retail space. Additionally, given that now a single director is in charge of staff in different design disciplines, he is responsible for setting a uniting vision and monitoring the consistency between different design outcomes.

Marketing services manager explains that 2 years ago, when designers were dispersed in different departments headed by different directors, there were significant problems regarding consistency (Marketing Services Manager, personal communication, October 19, 2015). For example, it could be that the new tile collection had a totally different style and design approach than the new ceramic sanitary ware collection. However through the new organizational structure, where designers have been brought together under the leadership of a single design department and a single design director, she indicates that this problem has totally been overcome. Observations regarding company's products, retail environments, website and catalogues also support the finding that an effective level of coherence and coordination has been achieved.

7.3.9 Culture and climate for design

7.3.9.1 Design awareness & understanding of senior management

Design awareness and understanding of senior management is seen to be fairly high. Senior management views design as a strategic tool in achieving corporate objectives; include design as a central component of business strategy; and communicate design as a core value of the brand. Design awareness and commitment is reflected in several different grounds like financial resources allocated to design; ease and rapidness in responding to decisions related to design activity; and thoughts and approaches of senior management about design, as can be observed in many articles that have been published in press media; corporate catalogs, corporate websites and marketing communication documents, ever since the mid 2000s. The company is seen to consistently highlight its design commitment in diverse corporate communication mediums.

As a brand which combines superior design concepts with cutting-edge technology to redefine our relationship with water, Vitra's quest is to become a primary source of "new pure ideas" for both world's most fastidious professionals and end users. (Vitra, n.d., Corporate Profile, p. 9).

When Marketing Services Manager was inquired about what she really thinks about design awareness and commitment of the company, she looks genuinely surprised by the question. She explains that design is such a core value for the brand that she is taken aback by this question. However when she is further questioned regarding awareness and understanding with respect to areas such as service design, customer experience design and design thinking, she acknowledges that design understanding has not yet expanded to cover such a breadth. But, she seems genuinely interested and eager to learn and apply these new dimensions of design into their business practices. Likewise, Design Director reveals that although in all other areas design awareness is extremely high, there is not much awareness and understanding regarding design's potential contributions in the wider context of services, experiences, or addressing business and strategy challenges. In contrast to marketing manager's approach, he shows disbelief and a cynical attitude with respect to the applicability of service and experience design in the context of their business and in the general context of the Turkish industry.

7.3.9.2 Design commitment of senior management

When the current design director was questioned regarding design awareness, understanding and commitment of senior management, he was unhesitant to respond that it was pretty high:

Here, both throughout the holding and the brand, design is greatly valued. As a sponsor of Turkey's design biennales, cultural and artistic festivals, design and artistic consciousness is very high in this company. This is so apparent that I don't even think I need to explain how much design is valued and how aware we are about its strategic importance. It is to the degree that, as a design director, I sometimes have to use the phrase "design is not that important", because I sometimes think that we attach too much importance to it. I'm just trying to say that many other things are just as important as design. Of course, this is such an advantage for me, being able to use such a phrase. (Design Director, personal communication, October 19, 2015)

Marketing Services Manager revealed a very similar picture, pointing out that since design is a fundamental component of brand identity, it is embraced strongly by all senior managers as well as company staff in other levels.

7.3.9.3 Design attitudes of employees

The high level of awareness and commitment regarding design is reflected throughout the organization, where employees have very positive attitudes towards design and embrace it with commitment. The Design Director strongly believes that every employee in the organization is a design champion:

In our company, everyone is a design champion, because when the subject is design... as I said we have 3 fundamental pillars, everyone promotes innovation, everyone promotes design and everyone promotes sustainability. Here, I say this with sincerity, everyone is doing their job in their own specialization by strongly holding on to these 3 values as much as they know. This is the core of our strategy. [...] Really, design, innovation and sustainability are indispensable for us and all company staff. (Design Director, personal communication, October 19, 2015)

7.3.9.4 Environment for creativity

In addition to positive attitudes towards design and innovation, the company reveals major efforts towards the cultivation of an environment that supports creativity:

We know that innovation only occurs in an environment that encourages creativity and innovative thinking. We are taking steps to establish this environment and transform innovation into a corporate culture. (Eczacıbaşı Group, n.d., Meet Innovation)

Apparently, there is significant recognition throughout the organization regarding the importance of creativity, as this is reflected in systems and procedures that specifically focus on the generation and sustenance of a creative organizational culture. One major example is the Inocino Suggestion and Project Evaluation System that is established all throughout Eczacıbaşı Group companies:

As part of our efforts to internalize innovation, we developed the Inocino Suggestion and Project Evaluation System, which enables us to transform valuable new ideas into value

creating projects. All Eczacıbaşı Group employees, individually or as teams, may submit their ideas to any unit or company in the Group through the Inocino Suggestion and Project Evaluation System. [...] To date, Eczacıbaşı Group employees have submitted over 15,000 ideas, 40% of which have become ongoing or completed projects. (Eczacıbaşı Group, n.d., Inocino)

Marketing services manager indicates that the system encourages employees to suggest their ideas regarding the improvement and development of systems and routines throughout the organization. She expresses that the system works really effectively and increases motivation and integration among employees, as their ideas are realized and recognized through small gifts and organization wide announcements. Other examples include annual meetings and awards directed at increasing awareness, recognition and encouragement regarding creativity and innovation:

Since 1998, we have organized annual events to share information about Group companies' innovative projects and recognize the most innovative among them. First called "Eczacıbaşı Creativity and Innovation Day" and then, after 2008, "Meetinnovation", this annual event aims to encourage every employee, alone or with a team, to develop innovative projects that contribute to the Eczacıbaşı Group's strategic targets and business results. (Eczacıbaşı Group, n.d., Meet Innovation) (<http://www.eczacibasi-inovasyon.com.tr/en/index.html>)

Despite these significant efforts, the Design Director finds that a creative organizational environment has not been fully established yet due to the extensive scale and complexity of the organization:

I guess here we do not have exactly that type of environment. Because things have to get planned and 6000 people have to walk in the same direction. In such a complex structure, I do not say that people can not develop new ideas and that these ideas can not play a part, but at the end of the day you have make decisions and proceed. (Design Director, personal communication, October 19, 2015)

Likewise in terms of physical environments, one cannot say that the organization wide recognition of the value of creativity is reflected effectively in work environments. As the Design Director expresses, besides the design department, work environments are kind of dull and ordinary. Observations made by the author of the thesis, as well as other informants also provide similar characterizations regarding work environments.

Despite such positive attitudes towards design innovation and major efforts directed at the generation of an environment that supports creativity, the organization cannot be characterized as having a highly creative organizational culture.

7.4 Design Management Audit Framework Assessment Results

Based on the findings that have been detailed in the previous section, design management capabilities in Eczacıbaşı Building Products were assessed according to the *Design Management Audit Framework* assessment tool. The tool evaluates each item of the audit framework according to 4 levels, with Level 4 indicating the highest level of competence. Table 7.2 presents the ratings for Eczacıbaşı Building Products, for each issue taken into consideration throughout the assessment process.

Table 7.2 : Assessment results for Eczacıbaşı Building Products.

	Level 1	Level 2	Level 3	Level 4
Design in Strategy				
Strategy Formulation Process				X
Strategic Planning Process				X
Strategy and Planning Communication				X
Design in Strategy				X
Design's Input to Strategy Formulation				X
Planning for Design				
Design Planning				X
Design Planning Horizons				X
Design Policy and Standards			X	
Investments for Design				
General Budget Allocation				X
Design Budget Allocation				X
Design Processes				
General Process Awareness				X
Design Process Awareness				X
Design Process Management				X
Design Process Thinking, Methods & Tools				X
Legal Processes for Design				X
Design Evaluation Processes				X
Design Organization				
Design Management Responsibility				X
Design Skills				X
Organizing for Design				X
Research for Design				
Design Research Programs and Resources			X	
Information and Idea Networks			X	
Training and Development for Design				
General Training and Development				X
Nurturing Skills and Creativity of Design Personnel			X	

Table 7.2 (continued) : Assessment results for Eczacıbaşı Building Products.

	Level 1	Level 2	Level 3	Level 4
Design Integration				
Coordination and Communication with Other Business Functions, Strategies and Processes				X
Role and Place of Design			X	
Breadth of Design			X	
Coherence and Coordination Between Different Areas of Design				X
Culture and Climate for Design				
Design Awareness & Understanding				X
Design Commitment of Senior Management				X
Design Attitudes of Employees				X
Environment for Creativity			X	

7.5 Summary, Major Findings and Conclusions with Respect to Design Management Capabilities

In the previous sections, design management processes, approach and capabilities of the company have been detailed with respect to each item of the Design Management Audit Framework. As can be monitored from the assessment results presented in Table 7.2, Eczacıbaşı Building Products revealed significant design management capabilities, being assessed at Level 4 in the majority of the capability items (24 out of 31) and at Level 3 in the remaining 7 items. Design capabilities are assessed to be the most advanced in the categories of *Design in Strategy*, *Investments for Design*, *Design Processes* and *Design Organization*, where every single item under these categories were evaluated to be at Level 4 of the assessment scale. The organization likewise showed advanced capabilities in the categories of *Design Planning*, *Culture and Climate for Design*, *Design Integration* and *Training and Development for Design*; as they were assessed at Level 4 in a greater part of the items under these headings. Compared to capabilities in other categories, the company is observed to be the weakest with respect to its capabilities regarding *Research for Design*, which was evaluated as Level 3.

As part of an established and strong business group, strategy formulation, strategic planning and strategy communication processes inside the company are seen to be highly structured, initially being guided by Eczacıbaşı Holding's executive board and strategic planning department. The company is observed to be carrying out methodical procedures in the development of company strategies and plans, with a detailed analysis of internal and external factors, and contributions coming from major functional departments inside the organization. Design is seen to be

integrated into the company strategy and business plans in an increasing manner since the middle of 2000s. The company declares design as a core value of the Vitra brand and links its design strategy to its corporate objectives in several aspects of the business, such as brand development, market differentiation, design-driven innovation, corporate communications and cultivation of a design-driven organizational culture. Design is integrated with the strategies and processes of other major functional departments through business planning procedures that specifically focus on analyzing and aligning strategic directions and suggestions provided by major functional departments including design. Additionally, design's input to the strategy formulation and business planning processes of the organization is noticed to be high. This is ensured as design is managed at the strategic level by a design director, who is an integral member of strategic planning meetings, and on equal standing with other functional departments such as marketing, sales, innovation and finance.

With respect to the category of *Design Investments* (Level 4), the company is noticed to be carrying out general budget allocation and design budget allocation processes through the use of structured tools and procedures for financial planning and evaluation. Additionally, significant budgets are allocated to design activities, which can easily be discerned through the range of in-house design activities carried out, as well as the portfolio of designers the company collaborates with. In terms of *Design Processes* (Level 4), the company is seen to reveal considerable experience and skill. There are clear design process maps, which are followed and improved; and several methods and tools are utilized to structure and manage design projects, such as time and budget planning, detailed design briefs, design review meetings, design evaluation scales. Additionally, the legal protection of design based intellectual rights is carried out on a regular basis, as an integral part of design management processes.

With respect to *Design Organization*, the company seems to have reached an advanced level compared with its previous capabilities. 2 years ago, together with the restructuring of the design department as an independent department directly under the general manager, management responsibility for design was assigned to a design director that has responsibility at the strategic level. Additionally, designers working in different design fields and under several departments were gathered under a single and larger design department. The company has considerable skills in undertaking design activities both through its in-house design teams and through collaborations with external design professionals. The selection, recruitment and

development of required design skills are all carried out in connection with the specific goals of design projects, as well as the wider business objectives. Throughout design projects, there are structured procedures to ensure that necessary parties, both inside and outside the organization, meet and contribute as needed.

In terms of *Design Planning*, the company carries out systematic planning for design activity based on its master business plan. Design plans are developed through an in depth analysis of products, customers, markets, competitors and trends; and in close communication with marketing and innovation departments in order to align departmental objectives. The planning horizons are taken as a year, but there is also more long term and tentative plans for design, in the context of technology and R&D based projects. Additionally, the organization reveals a particular attitude to design and articulates this in its corporate communications, design documentation, design briefs and corporate catalogues using consistent notions and keywords describing its design approach. However, these are not yet formalized through an articulated design policy or manual to support their internalization throughout the organization.

The company is seen to have developed a highly supportive *Culture and Climate for Design*, which is observed to have matured slowly but steadily as a result of its consistent utilization and development of design capabilities throughout the years. Senior management reveals a high level of understanding and awareness about the contributions and value of design for the business, initiating and supporting the use of design for the development of various aspects of the organization. Besides commitment to design activities and initiatives, it is observed that there are clear efforts to improve design integration throughout the organization. This recognition and support regarding design is also observed to be reflected in the attitudes and commitment of company staff. The organization also shows a high level of recognition in terms of the value of creativity and tries to encourage it by developing procedures and mediums for communication, team work, initiative and experimentation. Yet it cannot be said that creativity has become part of the organizational culture.

Design Integration is similarly at an elevated state with clear attention to ensure coordination and communication between the strategies and processes of design and other functional departments. Other than products, design is utilized in different areas such as corporate communications and environments with design activities being carried out in the fields of graphic design, interior design, design of retail and

exhibition spaces, and architecture. Additionally, there exists a good level of coherence between the outputs of design activities in different areas, as this is a clearly monitored matter by the design director. Together with marketing, design is seen to function as the driver of the NPD process. Yet in terms of other processes, such as corporate communications or innovation, design seems to take on more supportive roles.

Inside the category of *Training and Development for Design*, the company is observed to have focused on the establishment of continuous learning and development programs for all employees under the direction of human resources department. Yet, training and learning programs that are specifically focused on increasing knowledge, skills and creativity of design related personnel receive less attention compared to general training and development and therefore is assessed at Level 3.

Capabilities in terms of *Research for Design* appear as the company's weakest capabilities. Although the organization carries out research activities to inform design, and utilizes multiple resources, these activities remain more limited to market, competitor and trend research activities. Important research areas such as user research, ergonomics, or research into future and emerging needs do not receive much attention. Additionally, research activities are not carried out through a regular and structured research program that continuously feeds into design processes. Information and idea networks for design have been established through regular attendance to industrial fairs, design fairs, exhibitions, and conferences; and subscription to journals and publications. However, the company does not focus on maintaining networks with critical research institutions, or universities, which can be significant sources for new ideas, collaboration and co-creation.

It is seen that after having defined design as one of the core values of the Vitro brand, the company has been focusing intensely on the development of its design management capabilities. And after a decade of continual efforts it is observed to have attained considerable progress regarding these capabilities.



8. CASE STUDY 2 - KALESERAMİK

This chapter presents the analysis of design management capabilities in the context of a large scale ceramic sanitary ware manufacturer, which had entered the ceramic sanitary ware sector in the first half of 1990s. The company is originally Turkey's first industrial manufacturer of ceramic tiles, and is currently among the world's largest ceramic tile manufacturers. Although its capacity in terms of ceramic sanitary ware production is less significant compared to its ceramic tile operations, still the company is the 2nd largest manufacturer inside the Turkish ceramic sanitary ware industry.

After introducing the company, its profile and historical development, the chapter continues with an examination of the development of design and design management capabilities throughout the years. Then, the chapter focuses on current design management capabilities of the company, and presents them in accordance with the structure of the Design Management Audit Framework, which has formed the main research framework throughout the conduction of the case study. Finally, the chapter portrays the assessment of company's design management capabilities according to the assessment scale developed for the audit tool and ends with a summary of case study findings.

8.1 Company Profile and History

8.1.1 Profile

Kaleseramik (Kaleseramik Çanakkale Kalebodur Seramik San. A.Ş.) belongs to the Kale Group, which is a leading Turkish industrial group consisting of 17 companies, with more than 6000 employees. The group operates in 5 major sectors: building products, building chemicals, defense & aviation, industrial materials, and services (transportation and real estate). Kaleseramik is the group's company devoted to building products; it carries out the production, marketing and sales of ceramic wall and floor tiles, ceramic sanitary ware, complementary products, bathroom furniture, faucets, shower systems and accessories. However, compared to all other product categories, company's ceramic tile operations are much larger in scale, which is followed by the ceramic sanitary ware product category. Kaleseramik's ceramic tile

and ceramic sanitary ware production plants are located in Çan, Çanakkale. Altogether, the company produces 27.5 million square meters of wall tiles; 32 million square meters of floor tiles; 6.5 million square meters of granite ceramics; 2 million pieces of ceramic sanitary ware; 150 thousand modules of bathroom furniture; 60 thousand pieces of acrylic bath systems; and 60 thousand pieces of concealed cisterns a year (Kale Grubu, n.d., Kale Banyo, para. 3). Table 8.1 provides a general overview of the company.

Table 8.1 : Overview of company profile.

Name of Company	Kaleseramik Çanakkale Kalebodur Seramik San. A.Ş.
Number of Employees	3585
Turnover (in Turkish Liras - TL)	994.000.000 TL (for year 2014)
Export Amount (percentage of turnover)	31%
Management System Certifications	• TS EN ISO 9001 Quality Management System Certificate • TS EN ISO 14001 Environmental Management System Certificate • TS 18001 Occupational Health and Safety Certificate • TS ISO 50001 Energy Management System Certificate • TS ISO 10002 Customer Satisfaction System Certificate
Product Range and Brands	• Ceramic tiles (Brand Names: Çanakkale Seramik, Kalebodur) • Ceramic sanitary ware (Brand Name: Kale) • Complementary products (Brand Name: Kale) • Bathroom furniture (Brand Name: Kale) • Faucets, shower systems & accessories (Brand Name: Kale)
Range of Design Activities	• Industrial design • Graphic design • Retail space, interior and exhibition design • Web design • Architectural design • Interaction design • Service design (Starting recently)

The company has 3 major brands: Çanakkale Seramik and Kalebodur are the brand names for its wall and floor tiles; and Kale is the brand name for ceramic sanitary ware, bathroom furniture, complementary products & accessories, as well as for faucets and shower systems that are procured by the company. Figure 8.1 reveals a screenshot from company's web page and Figure 8.2 provides examples from Kale branded products. Additionally, in 2011, Kale Group has acquired Fincuoghi, an Italian ceramic tile producer that has been operating in the global markets with leading Italian brands: Edilcuoghi, Edilgres and Campani. These products are now

produced and marketed by a separate company under the Kale Group named Kale Italia, and serve to further strengthen Kale Group's position as one of the major players in the global ceramic tiles sector (“Her 3 Projeden 1'inde Kale Var”, 2014). Since the acquisition of the Italian ceramic tile producer, Kale, Çanakkale Seramik and Kalebodur branded products are exhibited together with these leading Italian brands in the foremost industrial fairs of the world, aiding to reinforce the recognition and image of Kaleseramik brands globally (“Kale Grubu İtalyan Fincuoghi'yi aldı”, 2011). Additionally, this acquisition has served another strategic objective and has rendered Kaleseramik significant logistical advantages, as the company representatives are reported to indicate that Kale Italia serves as a logistic hub in the European region for Kaleseramik products (Beyhan, 2013).

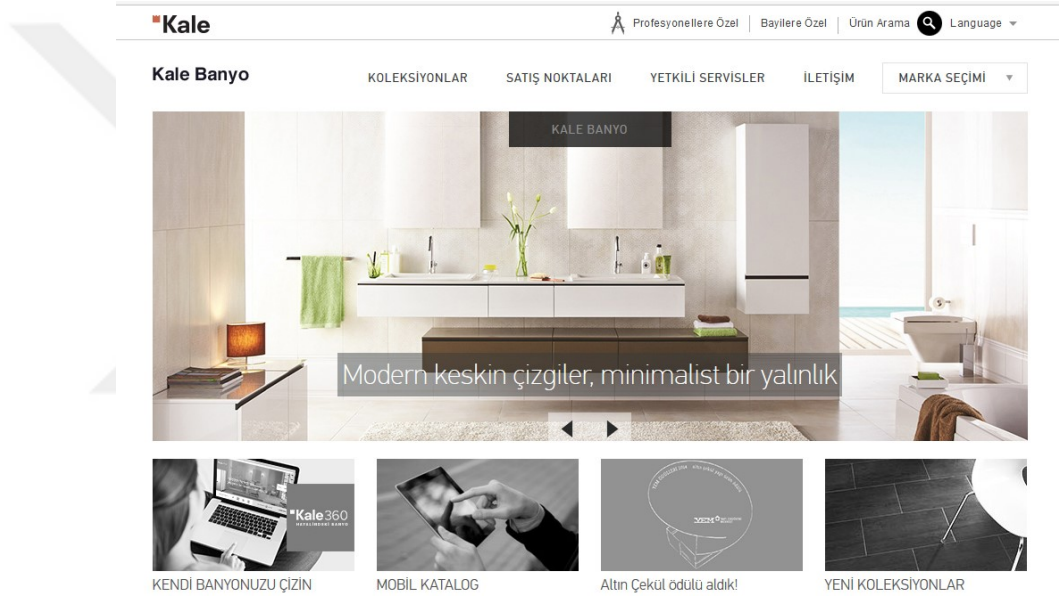


Figure 8.1 : A screenshot from Kale Banyo's web page.



Figure 8.2 : Examples from Kale branded ceramic sanitary ware products from the Zero Collection.

Domestically, Kaleseramik is the long-established market leader in the ceramic wall and floor tiles market, having around 28.5% market share and being far ahead of its followers (Beyhan, 2013). Whereas in the ceramic sanitary ware market, the company is the 2nd player in terms of production capacity and the 3rd player in terms of market share. This is expected due to its much longer held expertise in the production of ceramic wall and floor tiles; as historically, Kale Group is Turkey's first industrial producer of ceramic tiles, having begun its operations back in 1957, with the establishment of Çanakkale Seramik. Compared to ceramic tiles, the group's venture in the production of ceramic sanitary ware is much recent, having begun in 1993. Yet, in a short period of time, the company has established itself among the top players of the domestic ceramic sanitary ware industry.

In the global arena, Kaleseramik is the world's 12th largest manufacturer of ceramic tiles and the 3rd largest ceramic tile manufacturer in Europe ("Her 3 Projeden 1'inde Kale Var", 2014). However, in terms of ceramic sanitary ware, the company is not as active in the overseas markets as it is with its ceramic tiles.

8.1.2 History and development

The company started its operations in the ceramic wall tiles sector in 1957, by establishing Turkey's first plant for ceramic wall tiles in Çan, Çanakkale, under the brand name Çanakkale Seramik. In 1962, Turkey's first exports of ceramic wall tiles were made by Çanakkale Seramik A.Ş., which for a long time, operated as the single manufacturer of ceramic wall tiles in the Turkish industry. In 1972, Kale Group established another production plant, but this time for floor tiles, and started production under the brand name Kalebodur. Both of these brands became very important names in the Turkish market, to the degree that over time, the brand name Kalebodur, became a generic name for ceramic floor tiles inside the domestic market. After the foundation of Kale Holding in 1973, the group further diversified into several complementary sectors, such as raw material extraction, building chemicals and transportation.

Kale Group began the production of ceramic sanitary ware in 1993, establishing Kalevit as the group's company dedicated to ceramic sanitary ware. The diversification decision was the result of a major domestic ceramic sanitary ware producer deciding to enter the ceramic tile industry (Kale Group Vice President, personal communication, March 1, 2016). As the majority of their retail distribution networks were mutual, in order to protect its position in terms of sales channels, Kale Group decided to act in response to this move by entering the ceramic sanitary

ware industry. The investment was mostly targeted at the domestic ceramic sanitary ware market, with the objective of becoming one of the major actors inside the sector.

In the founding stage, production systems, machinery and know-how for ceramic sanitary ware manufacturing were purchased from an Italian firm. As expected, in the initial years, the company mostly focused on the acquisition of know-how in ceramic sanitary ware production and the assimilation of production skills. Additionally, the acquired production technologies, which were based on high pressure casting, were still in their early stages and this posed extra challenges in terms of becoming adept in their efficient utilization (Kale Group Vice President, personal communication, March 1, 2016). Initially, the company began ceramic sanitary ware production with 3 different product series, and carried out its sales operations through the group's already existing and considerably widespread retail and distribution network. In the second half of 1990s, together with the advancement of capabilities in terms of production and plant operation, the company began to focus on increasing its product range.

In 1999, Kalevit made a 50% partnership agreement with Spanish Roca, one of the leaders of ceramic sanitary ware industry worldwide. In the 1990s, Roca had been following an aggressive international expansion strategy throughout world markets, mostly based on opening of commercial branches and making partnership agreements with leading local brands (Roca, n.d., para. 3). Kalevit decided to undertake the partnership offer coming from Roca, in order to benefit from its long-held experience in ceramic sanitary ware, as well as its experience in major complementary products ranging from faucets and brassware accessories to bathroom furniture. As a result, the companies united their competencies under the brand name RocaKale. After 10 years of partnership, in 2009, the collaboration ended as Kale Group acquired 100% shares of the company, and decided to continue its production under the brand name Kale. However during these 10 years, the know-how coming from Roca's extensive technical competence in ceramic sanitary ware contributed to a significant development in production skills and expertise in this product category. As a result, the company went through a period of rapid progress and expansion in sales, together with a considerable increase in exports (Kale Group Vice President, personal communication, March 1, 2016). Although before the partnership the company had already been exporting its products to several overseas markets, the export amounts were relatively small. Yet, during the partnership with Roca, the company also performed as the original

equipment manufacturer (OEM) for some of Roca's products, resulting in substantial increase in export sales.

Following recent trends in the industry towards a "total bathroom" concept, in 2008, Kale Group also decided to diversify into bathroom furniture and established a furniture plant in Bandırma. Together with this initiative, the group began to provide all product categories under the bathroom, from ceramic tiles and ceramic sanitary ware to bathroom furniture and complementary products.

Back in 2000, the group had already united the management of its wall and floor tiles brands Çanakkale Seramik and Kalebodur, under the single roof of Kaleseramik. In 2011, the group underwent another major organizational restructuring, uniting its Kalevit branded ceramic sanitary ware, acrylic bathtubs, faucets, and Kaledekor branded bathroom furniture, also under the roof of Kaleseramik. This move was directed at achieving a higher level of integration between different product categories that were managed by separate companies under the group, but which are actually individual elements of a unified space, and therefore have to demonstrate a significant degree of harmony (Kale Group Vice President of Organizational Development, personal communication, February 23, 2016). This reorganization was an important step to support the renewed strategy of the group to undertake a more holistic approach towards its different product groups and to focus on improving their coordination, in order to provide an increased level of "harmony and ease" to customers throughout the overall process of purchase and use experience (Kale Group Vice President of Organizational Development, personal communication, February 23, 2016).

Today with its total production capacity of 66 million square meters, Kaleseramik is the world's largest ceramic tile producer that operates under a single facility, 12th largest producer of ceramic tiles worldwide, and 3rd largest producer in Europe. Concerning ceramic sanitary ware, it is the 2nd largest in the Turkish industry in terms of production capacity (Türkiye Seramik Federasyonu, 2010) and among the top 3 brands of the domestic market in terms of its market share.

8.2 Development of Design and Design Management Capabilities

As mentioned before, Kaleseramik initially began its operations in the ceramic tile industry back in 1957. At the time, the company began the production of ceramic wall tiles for the domestic market, without the existence of an established design department or design function. In 1962, the company began to focus on exporting its

products to developed markets of the world. For a long time, the majority of customers in export markets provided their own designs, where the company was responsible for their production. However, together with the growth in exports and changing requirements of these export markets, the company began to feel the necessity to develop original ceramic tile designs. Initially, it started collaborations with some external designers and design consultancies from Italy. Later, it also began its in-house product design activities in the 1980s, under a small unit titled *Desen Film Dizayn Atölyesi* (Pattern Film Design Studio), which was located inside the production plant in Çan. Yet Vice President of the Kale Group recalls that due to being far from venues and mediums through which to follow trends and developments in the world, in time the staff tended to repeat themselves in their design activities. Consequently, with the support of top management of the group, in the 1990s, the company decided to form a small in-house product design department in İstanbul and started managing its in-house design processes under the direction of an assigned design management responsibility. The design department was structured under the marketing department. However the staff used to work more independently; they were effective in following trends and developments and reflecting these into original ceramic tile designs (Kale Group Vice President, personal communication, March 1, 2016). In addition to gradually advancing its in-house design skills in ceramic tiles, the company continued working with external designers and learned from their know-how and working methods in the development of in-house design skills. Additionally, through these external collaborations, the company also increased its experience and competence in the management of external designers.

In 1993, with the establishment of Kalevit as a separate company under the Kale Group, the group began to focus on ceramic sanitary ware. Production technologies and know-how was acquired from an Italian company that was specialized in the provision of equipments and technologies in ceramic manufacturing. Coming to the initial product series produced by the company, it is indicated that they were not original designs in the sense that instead of being designed through the route of new concept generation and development, they were mostly shaped by ceramic modelers through a process of product modification (Kale Group Vice President, personal communication, March 1, 2016). Existing products in the local market were analyzed and their somewhat modified versions were generated by Kalevit's ceramic modelers by combining their desired features. Their molds were then produced in Italy by the same company which provided the technology. In the

course of their transfer to production, slight modification activities were continued by Kalevit's ceramic modelers that worked inside the product development department, until the products were optimized for the efficiency of production operations.

In the later product generations, the company began to develop its original product designs initially through the utilization of local freelance designers. However, Kale Group's Vice President pointed that it was not easy to find local designers that had expertise in ceramic sanitary ware (Kale Group Vice President, personal communication, March 1, 2016). Due to limited options in the local industry, in the second half of 1990s, the company began to search for collaboration opportunities with foreign external designers and design consultancies. After meetings with several design consultancies, the company decided to work with a German design consultancy firm. It was indicated that these German design consultants were highly professional in their working methods; they provided an extensive overview of the types of ceramic sanitary ware design options that were available in world markets; and they were categorized in terms of target market, product style and production approach (Kale Group Vice President, personal communication, March 1, 2016). He added that their methods stimulated fruitful conversations regarding what Kalevit really needed and wanted. As a result, 2 different product series were developed by the firm. The designs proved really successful in terms of sales outcomes and after this rewarding project, the company mostly preferred working with foreign external designers in its new product development activities (Kale Group Vice President, personal communication, March 1, 2016). Vice President of Kale Group underlined that the company gained significant knowledge and skills through these collaborations with external designers, not only in terms of the management of external design consultants, but also in terms of identifying product needs, analyzing product portfolio and giving design briefs according to the identified gaps and requirements.

Between 1999 and 2009, the group continued its operations in the ceramic sanitary ware industry in equal partnership with Roca, the Spanish leader in ceramic sanitary ware; and marketed its products under the brand name RocaKale. Similarly in this period, product design activities for ceramic sanitary ware were carried out through collaborations with external designers and the company did not carry out any in-house design activities. The company worked with external designers from Turkey, Italy, Finland and Germany; Adolf Babel, Harri Koskinen and Can Yalman were among some important names that realized product design projects for the company during the partnership years.

Although Roca's expertise in terms of production, technical problems and technological know-how was highly consulted throughout this period, there was no knowledge transfer between the firms directed at the development of design or design management capabilities. Except for 2 products, which actually belonged to Roca and were also produced under the RocaKale brand, nor was there any transfer between the firms in terms of product designs. Vice President of the Kale Group mentioned that Roca's product designs were not found suitable for the Turkish market at the time of establishment of the joint venture, as they were a little bit large compared to local market preferences. (Kale Group Vice President, personal communication, March 1, 2016). Yet he underlined that during this period, the company advanced considerably in many spheres: it gained pace in its new product development capabilities; increased its product range; and became more competent in following market trends, changing customer preferences and developments throughout world markets. Consequently, in this period, the company was probably the fastest growing ceramic sanitary ware manufacturer in the industry. In 2005, RocaKale had acquired the 2nd position in the domestic market in terms of market share (Kale, n.d., Yönetim Kurulu Birleşme Raporu, p.1). In 2009, the company ended its partnership with Roca and decided to carry on its operations under the Kale brand. However, after the separation, the company had to undertake extensive product design and development activities in order to fill the gaps created in its product portfolio by the dissolution of this partnership.

In the same period, Kale Group started preparations to undertake major transformations regarding its organizational mindset and structure. Inside this strategic renewal process, the development of strategic level design management capabilities became a central concern for the group as one of the most essential requirements to support the new organizational approach. The process was initiated by Kale Group's President and CEO and her consultant (who is currently Kale Group's Vice President of Organizational Development), based on significant realizations regarding the lack of synergy between group companies in terms of product management and design management (Kale Group Vice President of Organizational Development, personal communication, February 23, 2016). Another significant realization was regarding problems with respect to the profitability of design projects. Due to these challenges, they felt the need to better align their design approach with their market strategy and production capabilities, in order to move from carrying out design projects "for the sake of design" or as "design for image" (Kale Group Vice President of Organizational Development, personal

communication, February 23, 2016) to the establishment of a more professional and successful approach to the management of design activities. This instigated significant programs directed at rethinking product design and development routines and advancing design management capabilities inside the group companies.

At that time all our companies were managed separately. Our ceramic tile company, ceramic sanitary ware company, faucets company, furniture company, bathroom furniture, kitchen furniture, they were all detached companies. And we realized that we actually did not manage design. Everyone is designing something but they are disconnected from each other. One is doing ceramics, the other is doing sanitary ware, another one is doing furniture; but there is no unity among them. Yet, all these products will go into the same house, the same retailer; I mean architects are planning retail display layouts and they cannot find matching products to put on display. Or for example you are going to attend a fair, but how? [...] Then, we said that this cannot go on like this, we have to create synergy; and my guiding principles at the time were "harmony and ease". So together with the Kale Group's President and CEO, we initiated this process. This meant that first of all, we had to ensure harmony between our different product categories, and next we had to provide ease to our customers during selection, during application and during use. We said all our different products should be provided to our end customers, corporate customers and professional users in a holistic and integrated manner. But at the time, all our brands, companies, everything was separate. So we formed platforms that brought together related personnel from each of our companies. We created a platform for corporate communications and a platform for design. It all started this way. (Kale Group Vice President of Organizational Development, personal communication, February 23, 2016)

As a result, they started several programs targeting the development of strategic level design management capabilities, as well as design culture inside the group firms. The most significant one was the formation of *Design Platforms*, which were regular meetings among the group companies that brought together everyone related to design, design management and product management. These platforms aspired to develop a unified and coordinated approach to product design and development activities of different companies, as well as a more strategic stance towards the utilization of design by better aligning design strategy with the marketing strategy, production scale and organizational capabilities. Simultaneously, another major program was started in order to increase design awareness and understanding inside the group companies; around 30 people from the related staff began receiving training and development programs regarding design and design management, which were devised in collaboration with the Design Culture and Management Program of İstanbul Bilgi University. In the same period, the group also established *Kale Tasarım Merkezi* (Kale Design Center) as an autonomous center to promote design and to support design's integration with the industry. Additionally, beginning with 2009, the company is noticed to start taking prominence

in leading international design competitions, such as Red Dot, IF and A' Design Awards.

The platforms were temporary as they lasted for about 2-3 years. Besides the aforementioned aims, they also served to establish the grounding for a major organizational restructuring that took place in 2011, which united these separate companies under a combined managerial scheme (Kale Group Vice President of Organizational Development, personal communication, February 23, 2016). The organizational change was accompanied by the redesign of brand architecture and corporate identity. The group also decided to start managing design in a more formal manner and at a senior level. Consequently, in 2011, together with the joining of ceramic tile, ceramic sanitary ware, and bathroom furniture companies of Kale Group under the single roof of Kaleseramik, a design and innovation department was formed as a separate department, in equal standing with other major functional departments like marketing, sales and finance. The department combined design activities carried out in different product categories like ceramic tiles, ceramic sanitary ware, complementary products and bathroom furniture, under the leadership of a Vice President of Design and Innovation. In addition to the existing in-house design team for ceramic tiles, in-house designers were recruited in order to carry out design activities in other product categories. The company also continued utilizing external design expertise. This was also a significant development regarding design and its management in the context of ceramic industry, as the company was the first in this industry to structure design department up high in the management hierarchy and to grant its leader managerial responsibility at the strategic level, reporting directly to Kale Group's President of Building Products Division. In this period, important developments were discerned regarding the advancement of strategic level design management skills and towards the establishment of a higher level of design integration throughout the organization, such as: the redesign of organizational design processes; initiation of a project directed at the generation of an official design policy and guidelines manual called *Kale Design DNA*; restructuring of design planning procedures and horizons; and an increased consideration of design in strategy formulation. In line with these developments, in 2012, the company received Design Management Europe (DME) Award, which is an international award acknowledging the management of design in both private and public organisations. As it is declared in its website: "It recognises the ongoing processes, business decisions and strategies that enable innovation

and create effectively designed products, services, communications, environments and brands providing organizational success” (“The DME Award,” n.d., para. 1).

However in 2013, backward steps were taken regarding these developments, as this organizational structure for managing design was abandoned, and design department was downsized and re-organized under the marketing department as a small module consisting of 4 employees. In this current structure, design activities are carried out as a combination of in-house and external design skills. Yet in-house design activities constitute a minor fraction and are mostly focused on ceramic tiles and bathroom furniture. Design activities regarding other product categories including ceramic sanitary ware are mostly performed based on external design expertise. Design management responsibilities are carried out by 2 design management supervisors, one for bathroom products, one for ceramic tiles, and a Product and Design Manager that they report to, who specializes in product management.

Observing the development of design and design management capabilities inside the company, it is seen that nearly 3 decades ago, Kale Group had chosen to develop internal design capabilities for its ceramic tile product category, by establishing an in-house design department and assigning management responsibility for design. However, it is observed that for the ceramic sanitary ware product category, the company did not opt to develop any in house design capabilities and had long preferred the use of external design skills. When inquired about the reasons of this choice, it is seen that this was mostly based on financial grounds. The company assessed that for ceramic sanitary ware product category, the utilization of external design expertise is more profitable than maintaining an in-house design team, since the number of new products developed in a year is considerably less than those for ceramic tiles (Kale Group Vice President, personal communication, March 1, 2016). Additionally, Kale Group’s Vice President drew attention to the higher risks involved in in-house design, expressing that in-house teams are more prone to repeating themselves, and that the utilization of external design professionals is less risky in terms of satisfaction with project outcomes. He pointed to the long term investments required for the development of in-house skills, explaining that in ceramic tiles, it had taken long-years for the in-house design team to develop the skills and competence necessary to generate effective outcomes. As a result, he emphasized that firms usually find it more attractive to utilize external designers who have proven competence, instead of making more long-term and risky investments towards the development of in-house design capabilities. These

were the major motives behind company's long-held focus on the use of external design expertise, specifically in the context of ceramic sanitary ware design.

8.3 Analysis of Design Management Capabilities

8.3.1 Design in strategy

8.3.1.1 Strategy formulation and strategic planning process

Kaleseramik declares its vision as:

To compete with leading organizations of the world in every area we are active in, to be a leader in technological developments, to generate products and services that excel customer expectations, and in order to do so, to house qualified workforce inside our organization.¹⁰

Although having established a significant market share in ceramic sanitary ware and bathroom furniture markets over a short period of time, Kaleseramik is still observed to concentrate more heavily on ceramic wall and floor tiles - its original product group - where domestically it is the market leader in this product category, with around 28% market share. Likewise, corporate communications made through both digital and published mediums reveal an apparent emphasis on ceramic tiles and a relatively much less focus on ceramic sanitary ware. This is also reflected in the company's market performance as in the ceramic sanitary ware category, the company is the 3rd major player in the industry, coming right after Vitra and Serel brands. Nonetheless, ceramic sanitary ware is observed to be receiving increasing focus in company strategies, especially since the last 5 years. All key informants have mentioned company's growing interest in the ceramic sanitary ware product category, as part of its clearly articulated business strategy. Consequently, the company is constantly trying to develop its know-how in the design and production of ceramic sanitary ware and to bring its competence in this product category to a compatible level as that of ceramic tiles. Design Management Supervisor for the bathroom category indicates that, in terms of ceramic sanitary ware and bathroom furniture, company's strategic objective is to continuously move towards market leadership, and to establish itself as the market leader in the following 6 years. Vice President of Marketing similarly points that ceramic sanitary ware and bathroom furniture has been continuously gaining importance inside the strategic outlook of

¹⁰ Translated by the author. Turkish version is available from the corporate website: <http://www.kale.com.tr/tr/kurumsal/degerlerimiz>

the company. She adds that they have been constantly moving towards a more integrated approach towards the bathroom, in place of their previous concentration on individual product categories.

To structure and support its long term vision and goals towards a more holistic stance to the bathroom, it is seen that the company has well structured systems and routines in place for its strategy formulation, strategic planning and communication processes. Being part of the large Kale Group, strategy formulation and planning is initially guided by Kale Group's Management Board consisting of the group's President and CEO, group's Vice Presidents, and the group's President of Building Products Division. Other major partakers in the company's strategy formulation process are Kaleseramik's Vice President of Marketing, Vice President of Sales and Vice President of Operations. The overall strategy formulation process is assisted by structured information and inputs, such as the overall analysis of domestic and global economy, growth expectations in real estate and renovation markets, future outlook of the ceramics sector, growth potentials in different product categories, previous year's performance results, market needs and requirements and financial evaluations. Kaleseramik's Vice President of Marketing explains that strategies are formulated for a horizon of 5 years. She indicates that although these 5 year strategies are formulated thoroughly and with great care, they are evaluated and updated every year in the period between July to September. After the necessary revisions are made in the light of financial evaluations and detailed analysis regarding markets, sales, competitors, and the feasibility of planned investments, the strategic plan is presented to the group's board of directors. Following approval, the strategic plan is delivered to major departmental vice presidents, who are responsible for the generation of detailed departmental business plans. From here on, each department develops its yearly business plan through several iterations, and consulting necessary parties throughout the process.

Although there is a regular and detailed business planning process throughout the organization, interviewees have pointed to problems with respect to the business planning process. They have mentioned problems regarding having to restructure planning procedures together with frequent organizational changes, or due to changes in managerial approaches such as the transfer from a product focused marketing approach to a customer focused marketing (from 4P to 4C), as well as some minor setbacks with respect to following business planning deadlines.

8.3.1.2 Strategy and planning communication

Strategies and business plans are communicated throughout the organization following structured strategy communication meetings that take place on a yearly basis. The meetings take place based on the position of employees, with different meetings held for each level, flowing from top management level to vice presidency level, then to managers and finally to specialists. Design Management Supervisor for the bathroom and Marketing Manager both believe that strategy and planning communication is effectively carried out, where every employee has sufficient information regarding the overall objectives and strategy of the organization, as well as concerning specific departmental strategies necessary to carry out his/her responsibilities. Vice President of Marketing explains that inside the marketing department, company's strategic objectives and plans are shared through presentations carried out in strategic planning meetings, which are conducted with the attendance of all marketing managers and related personnel. She adds that besides being communicated effectively, departmental strategies and plans are evaluated every month:

We follow our marketing plans, activities and goals on a monthly basis. What were we supposed to do this month, did we carry them out, are we behind our plans, do we need any additional actions? As the plan is on a monthly basis, we also carry out its follow up according to a separate communication plan. (Vice President of Marketing, personal communication, December 5, 2015)

However other than meeting routines for strategy and planning communication, the organization is not observed to focus much on the establishment of general internal communication mediums, such as intranet, newsletters, or other types of internal communication systems, except for a corporate magazine called *Kale Aile*, which is published every 2 months. This results in problems and interruptions regarding general communication of news, developments, or improvements throughout the organization.

8.3.1.3 Design in strategy

Regarding the position of design inside strategy, the company is observed to be sending mixed signals. On the one hand, the organization is observed to be highly aware of the significant role of design in contributing to its business objectives. This can be seen in the continuous use of design in almost every area, from product design and graphic design to interaction design and customer experience design, with a considered link to specific business objectives and strategies.

While design activities in the fields of product design, graphic design or web design are more common practices in the Turkish and global ceramic sanitary ware sector, applications of interaction design and customer experience design are much rare to come by, even in the context of global ceramic industry. In this sense, Kaleseramik is the first ceramics company to design an interactive online application platform named *Kale 360* ("Her 3 Projeden 1'inde Kale Var", 2014), with the objective of enhancing its customer experience. The platform provides customers and architects an interactive tool, where they can design and visualize their desired bathroom options by choosing every single item of the bathroom, from ceramic tiles and ceramic sanitary ware to bathroom furniture and armatures.¹¹ Another remarkable example is the existence of a published design policy and guidelines manual named *Kale Design DNA* (Birsell+Seck, n.d.); quite recently, the company has concluded a 3 year long process directed at the creation of Kale's design principles, with the final outcome being compiled into an extensive design manual. Inside the manual, the company states that "Design is a critical strategic asset that is most effective when employed early in corporate plans, not as a decorative finish."¹² The vision, time and resources that are required to create the company's design DNA, as well as statements inside the manual regarding how design is viewed and approached by the company, are significant indications that design is regarded as an integral part of company strategy.

However, there are also several conflicting signals and developments that have been taking place since 2013, resulting in major changes in design's position inside the organizational structure, such as downsizing of the in-house design team, reduction of financial resources allocated to design, decline in some promising design initiatives, in addition to the termination of the management responsibility for design at the strategic level. Until 2013, another major partaker in strategy formulation process was the company's Vice President of Design and Innovation. As noted before, this position has been terminated in 2013 and design management responsibility has been positioned under the marketing department, with design management supervisors assigned to each major product category. Design Management Supervisor for Bathroom indicates that the previous organizational structure was "a pioneering step for the Turkish ceramic industry" (Design Management Supervisor for Bathroom Products, personal communication,

¹¹ The tool can be approached from <http://www.kale360.com/home.html>

¹² Design DNA, Kale Seramik. Retrieved November 15, 2015 from <http://www.birsellplusseck.com/-Design-the-Work-You-Love-.html>

November 10, 2015). Together with its annulment, design department, which was initially a separate department under Vice President of Design and Innovation, was positioned under the marketing department and the in-house design staff was downsized from 8 to 4. Additionally, the activities of Kale Tasarım Merkezi¹³ (Kale Design Center) have been stopped since late 2013. These are indications regarding design's diminishing position and integration inside organizational strategies, in comparison to its previous status. Interviews revealed that these pioneering developments had all been driven by the vision and impetus provided by the CEO of Kale Group and her consultant at the time, who is currently the group's Vice President for Organizational Development, towards the formation of a more design oriented organization.

When questioned about the reasons for the discontinuity of these leading developments and specifically the termination of Vice Presidency in Design and Innovation, interviewees revealed several reasons. A significant one was not being able to observe desired outcomes, especially in terms of financial returns due to not being able to accurately measure and evaluate the contributions of design (Kale Group Vice President, personal communication, March 1, 2016; Kale Group Vice President of Organizational Development, personal communication, February 23, 2016). Other significant challenges were indicated as: not being able to obtain an effective integration between design management and the more established business functions like marketing; very major organizational changes necessitating priority to be given to other organizational issues; and problems with respect to establishing harmony and collaboration between design management and marketing management, due to setbacks regarding decision making and not willing to share authority.

We have gathered product and design management in one place because it did not work; when we separated them they had controversies. This is a problem in organizations; there is a reluctance to share authority. (Kale Group Vice President of Organizational Development, personal communication, February 23, 2016)

As a result, majority of the interviewees concluded that this step was an early move for the company in terms of its existing organizational culture for design.

Additionally, Kale Group's Vice President of Organizational Development added that it is always a major challenge to establish the continuity of initiatives, which are

¹³ Kale Tasarım Merkezi had been established towards the end of 2008, as an independent platform to promote design and increase design awareness in the Turkish industry, by conducting workshops that bring together industry with design professionals and educational institutions.

originally pushed down from the group's top management, inside the individual companies (Kale Group Vice President of Organizational Development, Personal Interview, 23, February, 2016). She underlined that all new programs and initiatives require leadership, and particularly in the case of these significant design initiatives which were started by Kale Group's CEO and herself, finding and assigning the right person to lead, creating belief and commitment in management teams and ensuring that they take these design programs as a priority, were significant difficulties.

If we were to direct these initiatives, because we believe in its importance, our priority would be design. But, obviously, we were not able to get the ones in charge on board. (Kale Group Vice President of Organizational Development, personal communication, February 23, 2016)

Currently, formulation of design strategies and design planning are carried out under the marketing strategy formulation and planning process, given that design department is now positioned under the marketing department. According to the Design Management Supervisor of the Bathroom, since the cessation of Vice Presidency in Design and Innovation, design's place in overall company strategy has been delegated to marketing, and design is not considered in higher level strategy making processes:

In the top level of strategy formulation, they are talking about increasing turnover but not about how to do this with design. Probably this was discussed before. But currently, I don't think they are asking the question of how to do this with design. This question is now just handed down to marketing. (Design Management Supervisor for Bathroom Products, personal communication, November 10, 2015)

Likewise Kale Group's Vice President for Organizational Development confirms that they do not consider design in their strategy formulation meetings at the top level. Consequently, in the current state, design enters the business strategy and business planning of the company as part of marketing strategy formulation and planning routines.

8.3.1.4 Design's input to strategy formulation

It is seen that design strategy is developed mostly within a product focus, based on detailed market segmentation and company's desired position in these market segments in the coming years. Marketing strategy defines where the company wants to be in selected market segments and supportive design strategy and plans are crafted by design management supervisors in close collaboration with the marketing department inside budgetary constraints. Therefore, presently design's input to strategy is generally limited to design's role in terms of achieving targeted product market positions, and some guidance for the future product generations,

which is provided through the delivery of regular analysis and reports regarding long-term to short term trends in the industry. It does not systematically cover other areas such as design's place in services, innovation, or a more holistic perspective regarding design use. However recently, company's interaction with an outside design consultancy firm has resulted in an extended contribution of design to the marketing strategy formulation process. Vice President of Marketing indicates that now they are also deliberating on how to design their customer experience, customer journey, and services together with the guidance of external design consultants. When asked about design's input to and place in strategy formulation, she responds:

Yesterday, we just had a meeting regarding customer experience design and consumer journey, with an outside design firm. We definitely appraise these issues in our internal meetings, how should we design the customer journey, how should services be designed, how should products be designed. Other than that, we carry out design language studies for our designs. Together with outside design consultancies, we contemplate on what our design DNA should be, how we can reflect our strategy in our design DNA, how we can align the design DNA of each brand with our strategies. So if our strategy incorporates an aspect such as 'I am a brand that provides ease of use; that really makes life easier', this language is reflected in the design features of our products. (Vice President of Marketing, personal communication, December 5, 2015)

The in house designers' and design management supervisors' input is also obtained by inviting them to related workshops and meetings. However, Marketing Manager indicates that their presence and input is mostly requested in the application phases of the projects, and not much on the initial ideation and brainstorming phases (Marketing Manager, personal communication, December 15, 2015).

Interviewees reveal that initiatives such as the development of an organizational design policy, development of design strategies in the fields of customer experience and service design, and design's increased input to the overall company strategy have all been instigated in the period of the previous organizational structure regarding design, with a separate design department and an assigned design management responsibility at the strategic level. Design Management Supervisor of Bathroom Products indicates that many visionary and holistic initiatives regarding design were crafted and followed with the leadership of previous Vice President of Design and Innovation. He points that he has "left his own DNA", which still continues to influence the design strategies and approach of the organization (Design Management Supervisor for Bathroom Products, personal communication, November 10, 2015). Still, compared with the previous years, design's role in strategy, as well as its input to the company strategy formulation process is

observed to have weakened considerably. As a result, currently designers and/or design managers do not take part in the overall company strategy formulation process but they contribute to strategy and business plans mostly in the level of marketing strategy or design strategy formulation.

8.3.2 Planning for Design

8.3.2.1 Design planning

In Kaleseramik, planning is seen to be an organization-wide approach that drives the business. Strategies are turned into business plans in all functional areas of the organization, with a long term outlook and through structured routines. To support business planning, and specifically design planning, the company uses detailed techniques, data sources and analysis, such as trend reports, benchmarking, market segmentation, portfolio gap analysis, market research, and regular reports coming from major industrial fairs.

Planning for design begins right after the company objectives and strategies are defined and passed on to marketing to carry out its departmental planning. Design Management Supervisor for the Bathroom Products explains that 2 major industrial fairs, Cersaie (that take place every year in September, in Italy) and ISH (that take place every 2 years in March, in Frankfurt) serve as critical trigger points with regards to shaping long term strategies of the company, specifically in terms of product design and development (Design Management Supervisor for Bathroom Products, personal communication, November 10, 2015). They are the points where the company sees how it is positioned in different product categories with respect to major competitors, and senses trends and directions inside the ceramics industry. These fairs trigger conversations on desired product positions, as well as product design and development budgets.

In this respect, marketing provides the data for design planning process by detailing targeted product position, targeted price, benchmarking data, similar products of competitors, and desired customer perception in terms of segment and style. From here on, design management supervisors carry out detailed planning for design projects and present their proposed plan to marketing managers. Marketing Manager for Premium Segment Products similarly indicates that design management supervisors lead them in design planning (Marketing Manager, personal communication, December 15, 2015).

8.3.2.2 Design planning horizons

Design planning for bathroom products has a horizon of 3 years, whereas for ceramic tiles design planning is conducted on a yearly basis. Specific projects that will be carried out for the following years, their priority ranks and their time planning is finalized by design management supervisors, in cooperation with product managers and marketing managers, through several iterations, in order to integrate and align their individual perspectives. In this context, the Marketing Manager points to the difficulties inherent in design planning for ceramic sanitary ware and bathroom products compared to the planning of ceramic tiles. She indicates that design planning and budget allocation for ceramic tiles is conducted more easily due to the long standing tradition and experience of the company in this product category (Marketing Manager, personal communication, December 15, 2015). Moreover she notes that ceramic sanitary ware necessitates a more long term perspective in project and budget planning, due to longer periods necessary for product development and much higher investments compared to ceramic tiles, and adds that the company is still trying to get used to different perspectives, routines and investments necessitated in managing ceramic sanitary ware.

8.3.2.3 Design Policy and Standards

The company has a formal design policy and guidelines manual named *Kale Design DNA* that has been finalized recently. Kaleseramik is the only company in the Turkish ceramic sanitary ware and tile industry (and probably also in the Turkish industry at large) that has defined its corporate design policy and standards through a formal document. *Kale Design DNA* has been developed in collaboration with the design consultancy *Birsel+Seck*, through an extensive work covering design research, product reviews and numerous in-depth interviews and workshops held within the organization (Birsel+Seck, n.d.). The result has been a comprehensive document, around 200 pages, describing Kaleseramik's design language and principles with respect to each brand, and providing rules and guidelines for product design and development. Additionally, the document details how design is to be approached throughout the organization in different areas, such as customer experience, product improvement, product optimization, product perception, product language, product segmentation, brand image and story, as well as brand engagement and appeal.

Kale Design DNA is our design constitution. It defines why, what and how we design. It outlines our design principles so that our vast products share a common design foundation.

[...] With our Kale Design DNA, we define and establish our unique point of view on design and create the conditions to enable us to be a design focused company that achieves continued commercial success. (Birsell+Seck, n.d.)

Besides helping the company achieve coherence in different design projects by providing core notions that guide design decisions, Kale Design DNA also provides the foundations for an analytical approach to evaluate design outcomes throughout the company. It is also intended as a tool to facilitate the application and implementation of Kale's design principles in all customer touchpoints.

8.3.3 Investments for Design

8.3.3.1 General budget allocation

Similar to many large scale companies, in Kaleseramik, general budget allocation is carried out on a yearly basis and in a very systematic manner. The process is under the direction of finance department, and is guided by financial evaluation and risk assessment tools. After departmental business planning is conducted, departments have a sound basis for conducting their budget planning. Each department carries out initial budget planning based on their planned projects for the next year and delivers their budget requests to the finance department. After some iterations of reconciliation, the budgets are settled towards the end of December.

8.3.3.2 Design budget allocation

Coming to design budget allocation, at an initial sight, observing the portfolio of designers the company has worked with, as well as activities carried out in different areas of design, ranging from product design to communication design, exhibition design, and customer experience design, provides sufficient evidence that the company allocates considerable budgets to design activities. Vice President of Marketing denotes that although every year the company allots significant budgets to design, the amounts can change considerably (Vice President of Marketing, personal communication, December 5, 2015).

In terms of in-house design, in the previous organizational structure there was a Vice President for Design and Innovation and a larger in house design team. Comparing it with the current organization for design, it is apparent that design budgets for in-house design activities have been reduced considerably since then. This is also confirmed by several informants interviewed throughout the case study.

Currently, design budgets are directed under marketing budgets. Design investment decisions in industrial design are mostly guided by design management supervisors,

based on the projects planned for the coming year, practical knowledge regarding resource amounts necessary to carry out these activities, and general company strategies regarding design budget allocation. Vice President of Marketing states that although amounts can vary from one year to the other, they have “long-established and considerable design expenses that are made every year” (Vice President of Marketing, personal communication, December 5, 2015). She explains that based on the experience that has been accumulated throughout the years, the company usually allocates a certain percentage of its yearly budget to design activities. Yet, the budgets are further detailed and/or adjusted based on the design planning for that year and projects that have priority. She also points that evaluations regarding design investments are carried out by the finance department, by means of comparing budgets allocated to product design and development activities, with the revenues that are generated through these products.

Other interviewees also point to efforts and procedures directed at evaluating the returns from product design and development investments, such as forms to estimate expected sales and return on investment. However assessing returns from design investments and systematizing design budget allocation are quite problematic issues in design management. In this context, Design Management Supervisor of the Bathroom Products indicates that the company does not have an analytical structure to question design budget decisions and therefore these decisions are made on the basis of a trust in design management supervision. When questioned further on how design management supervisors guide design investment decisions, he explains that their overall budget requests are shaped according to project characteristics, as well as the current positioning and strategy of the company:

Based on project requirements, we provide our insights regarding which designer or design office is best suited to carry out the project optimally and their respective budgets. Mostly we can provide convincing answers to questions or concerns and get them approved. When a more impressive project is necessary, we also consider more prominent design studios. [...] We also discuss these issues in detail inside design budget planning process. (Design Management Supervisor for Bathroom Products, personal communication, November 10, 2015)

Other than industrial design, the company allocates budgets to graphic design, retail design, exhibition design, web design, interaction design and experience design. However, design budget planning and investment decisions in fields other than industrial design, are managed solely under the supervision of marketing specialists.

8.3.4 Design Processes

8.3.4.1 General process awareness

The company has a high level of general process awareness. All the activities that are carried out throughout the business are defined as processes, detailed and documented, with their corresponding process maps. Having acquired its Quality Management System Certification back in 1994, the company has also developed tools to measure and evaluate its processes, and uses these tools for continual process improvement. Other than the Quality Management System, the company has implemented and maintains a Customer Satisfaction Management System (TSE ISO 10002:2006), Environmental Management System (TSE EN ISO 14001:2004), Occupational Health and Safety Management System (TSE 18001:2008), and Energy Management System (TSE EN ISO 50001).

8.3.4.2 Design process awareness

This high level of process awareness is also reflected in the company's design processes. Design management supervisor of the bathroom explains that there is a clear design process map for design activities, which has been developed through the leadership of strategic planning department. Design process map clarifies the sequence of activities that must be carried out, as well as various inputs or approvals that must be received from other business functions.

8.3.4.3 Design process management

Additionally, design processes are observed to be managed systematically using several project management tools and methods, such as time planning and monitoring through the use of GANT charts, cost monitoring, design evaluation meetings at several points throughout projects, as well as structured design briefing formats. At the beginning of each project, a team is gathered from design, product management and marketing departments, in order to prepare a design briefing document that they call *Ground Zero*. This document details the objectives of the project, similar products in competitors when applicable, how the product or product range should be perceived by the customers, and keywords and visuals to describe the mood. In the next stage, the team prepares another document called *Ürün Değerlendirme ve Lansman Sistematiği* (Product Evaluation and Launch Systematic), where they provide more analytic data such as sales and profitability targets, expected production quantities, investments necessary and yearly returns on investments. After this form is approved by senior management, the project takes

a start. However both of the design management supervisors and the marketing manager denote that there are problems with respect to the application of this formal routine and they are working on improving its application and utility.

Throughout design projects, at least 3 review meetings are conducted by the same team members: design evaluation, design approval and technical approval meetings. Design evaluation meeting is where different design concepts are evaluated for the first time in digital format. The second stage is design approval meeting, where design options are seen and evaluated in physical prototype form. After necessary decisions are taken and revisions are made, the final product is reviewed in the technical approval meeting, which is held with further participation from product development and quality departments. After approval by the evaluation team, the data is handed over to product management for industrialization and launch planning.

8.3.4.4 Design process thinking, methods and tools

As have been mentioned before, the organization also carries out in-house design activities. Throughout in-house design processes, designers utilize different methods and tools such as market research, moodboards, user research, sketching, 3D modeling with computer aided design tools, mock-ups and prototyping. The management and evaluation of in-house projects proceed in the same way as with outsourced activities. Nonetheless, design management supervisor explains that currently in-house design processes do not receive much weight:

Almost 70% of design activities are carried out through outsourced design, and this is continually increasing. (Design Management Supervisor for Bathroom Products, personal communication, November 10, 2015)

8.3.4.5 Design evaluation processes

As explained previously, pre-launch, the project teams carry out structured review and evaluation meetings all throughout the projects, and ideas and feedbacks from several departments are observed to be taken into consideration. However the company does not utilize any analytical tool or scoreboard during design evaluation, in order to support final decision making. Decisions are given by the project teams, based on a final assessment of proposed designs and the overall project goals.

8.3.4.6 Legal processes for design

The legal protection of design based intellectual rights is an integral part of design management processes. The process is managed under the direction of design

management supervisors, from preparation of necessary documents and application, to the monitoring of the overall process. Additionally, design management supervisors and designers have dominance over decisions regarding which products to legally protect, as they have better knowledge concerning design details that make a product differentiated and therefore worth protecting. The company also has a legal department that guides and monitors legal processes related to a wide range of business issues. However, in terms of design patent applications, the company has long been working with an outside patent consultancy firm. Company's legal department gets involved only in the case of conflicts and infringement of their design based intellectual rights. Design management supervisor for the bathroom notes that this process is monitored with great care, as copying of designs is a common problem in the Turkish industry. He points out that although they take service from a professional patent consultancy firm, he personally carries out the writing of application documents. The company has detected many cases of design infringement before and managed to have the products confiscated based on the ownership of design patents.

8.3.5 Design Organization

8.3.5.1 Design management responsibility

As have been mentioned in its corporate profile, in 2011, Kale Group underwent an organizational restructuring, and united its previously separate ceramic tile, ceramic sanitary ware and bathroom furniture operations under the single roof of Kaleseramik. Together with this reorganization, the company started to focus more powerfully on its ceramic sanitary ware and bathroom furniture operations. Additionally, a new in-house design organization was structured as a separate design and innovation department that consisted of 8 designers from different specializations. The department was headed by a vice president of design and innovation. Consequently, for 2 and a half years between 2011 and 2013, there was an assigned management responsibility for design at a very senior level, and in equal stature with other major departmental directors such as marketing, sales and finance. This was a leading step inside the ceramic sanitary ware industry concerning design's position. However, due to changes in strategy and management towards a more profitability oriented stance, in 2013, the design organization was downsized and in the following year, it was totally reconfigured under the marketing department.

When inquired about the reasons for this backward development, the interviewees mostly indicated that this was an early step for the company, with respect to the prevailing state of organizational culture and climate for design. Another reason was the profitability and efficiency based management approach resulting in the in-house design management organization to be viewed as a luxury. They also pointed that company's organizational culture is used to receiving immediate results and seeing the results of design investments and initiatives at the strategic level requires much longer times and persistence, which the organization is not used to display. These revealed that embedding design inside an organization and elevating its influence to the level of strategy necessitates long time and persistence.

I think it was early, the step was taken too early compared to the level of culture, that is design culture existing in the company. [...] I relate it to 2 major reasons, one to being too early, and two to the habits of people. Design is a different perspective, design, design thinking makes you question every day, and maybe when you are running fast, it slows you down. A third reason is that coming right out of an economic crisis, our profitability was of course affected; according to top management decision, everyone was now responsible from their own profits. Inside this structure, this was kind of a "luxury", so to speak. (Design Management Supervisor for Ceramic Tiles, personal communication, December 15, 2015)

We have an organization that has problems with the sustainability of its leading initiatives. Because as I have mentioned, it has an impatient structure, I do not say this in a negative way, it has a DNA that is fast. You are used to a background that works fast. [...] Therefore the habits of this fast world produce the desire to attain really fast results and this is a deep rooted thing that should not be disregarded. Maybe we should plan what we call design thinking according to this structure. Because when we do not, it doesn't work. You start, it's super, you have a design team, these guys look at the world through design, they look at you through design, they inform you in that way, design has influence at the level of vice presidency... And right at the moment that you form a structure that gives power and control to design, you wipe it out. This is something that made me really upset. [...] For certain things, we need to proceed by taking breaths. [...] Maybe we shouldn't have taken such a huge step. (Marketing Manager for Premium Segment, personal communication, December 15, 2015)

Likewise Kale Group's Vice President pointed to major challenges regarding the in-house development of design and design management capabilities, as well as chief organizational changes that took place in that period, which have caused design to receive a diminished attention. Another major challenge was establishing harmony and collaboration between design management and marketing management. Additionally, he underlined the difficulties in terms of quantifying the contributions of in-house design investments and the long term stance necessary to support their integration, noting that in-house design teams cannot survive if the contributions of design are evaluated based solely on financial returns generated through product

sales. He believes that in-house design departments should be treated more like a school and a long term investment:

You cannot maintain these teams if you look through the eyes of calculating how much I earned from the products created by my in-house designers. I don't say we should never evaluate this, but when you do this, design gets strained. You also nurture the team; develop their capabilities; these processes take a long time. It is also like a school; one should look at it that way. [...] Additionally a very critical issue was that in that period, the organization went through a lot of organizational changes. These also had an effect. Inside those changes design was ignored a little bit. In my opinion, inside organizational efficiency studies, the contributions of design could not be measured precisely. And unfortunately inside these types of changes, sometimes the departments that you consider as a long term investment are the ones that are to be cut down the first. So, in-house design could not become a priority. There is this thinking "I can always get this from outside". Of course you can get it from outside. As you said, many firms carry out around 60-70% of their design activities through the use of external designers. But I believe a competent in-house team should at least evaluate design inside the organization. (Kale Group Vice President, personal communication, March 1, 2016)

In the current organizational structure, there are 2 *Design Management Supervisors* and 2 *Designers* that are placed under *Product and Design Management Division*, which is configured inside the marketing department. In addition to design management supervisors, product and design management division also includes product managers. It is leaded by a *Product and Design Manager*, who does not have a background in design but who is mostly specialized in product management. So currently, design is managed under the control of product management. One of the design management supervisors is responsible for the management of design activities regarding bathroom category, which entails ceramic sanitary ware, bathroom furniture and complementary products. The other design management supervisor is responsible for the management of design activities regarding ceramic tiles. Design management responsibilities at the project level are administered solely by design management supervisors. However, design management supervisor for the bathroom occasionally also works as an in-house designer, and carries out in-house design activities under his specific product category. Design management responsibilities at the organizational and strategic levels can be said to be shared between design management supervisors and the product and design manager.

8.3.5.2 Design skills

Presently, the company has a very small in house design team (3 designers), focusing on product design, and a team of interior designers and architects for the design and application of retail and display environments. Still, only a small percentage of the design activities in these fields are carried out in house, while the

company most often chooses to outsource a large percentage of its design activities in various fields. For the bathroom category, design management supervisor indicates that 70% of all design activities are outsourced. For ceramic tiles and spatial design, outsourced design activities likewise constitute a considerable percentage.

It's seen that the company works with Turkish designers and design studios, as well as with foreign designers and design consultancies. Some names the company has collaborated with up to this date include: Can Yalman, Tamer Nakışçı, Ece Yalım, Demirden Design, Adolf Babel, Nilo Gioacchini and Harri Koskinen.

8.3.5.3 Organizing for Design

Decisions regarding whether to use in-house or outsourced design are mostly guided by design management supervisors based on product segments and analysis of project characteristics and requirements:

First of all, product segment is a major factor. If we are after an upper segment product that can be sold at high prices, and which can be more post modern or a little tricky in terms of production and realization, I can directly go for the decision to outsource design without hesitation. However in more technical projects, where you need a more thorough knowledge of the sector and existing products, I decide to develop it in-house. Mostly the project characteristics determine the road to be taken. (Design Management Supervisor for Bathroom Products, personal communication, November 10, 2015)

Because the in-house design team is quite small, he adds that factors like whether the project concerns a single product or a large product range, or whether it requires a high level of innovation are other decisive factors that shape decisions concerning in-house versus outsourced design utilization. Consequently, the company consistently collaborates with external designers, for projects targeted at upper and upper-mid markets and for projects concerning a wide range of products. In the selection of external designers, besides a focus on experience and creativity of designers, the company generally prefers enduring relationships:

We prefer the consultancy relationships to be sustainable because it is important that the designer knows the company and how we approach design. That's why if we are happy with the results, we prefer to continue working with the same designers. Specifically, for some product categories, design consultancy firms with extensive experience in that specific product category are really valuable for us. But there are other cases, for example, for ceramic sanitary ware; even the experienced designer can have great difficulty when transferring the product design to the production phase. Additionally, freedom is quite precious for that product category, therefore we don't look much for previous know-how, or for a designer that specializes in vitrified ceramics. There, we are freer in our choices; we can easily work with any designer or design office that has been successful in other product categories. (Design

Design projects are seen to be carried out in collaboration and close contact with marketing and product development specialists. At the beginning of each design project, a team is gathered consisting of 5 to 7 specialists, including design management supervisors, product managers and product development specialists for the related product category. The team contributes to the shaping of project briefs; conducts several project reviews throughout the design and development process; and is responsible for the final approval of design outcomes. It is observed that the selection of designers and the formation of design teams are carried out systematically and in line with the objectives of design projects. Additionally, there are formal routines in order to bring team members together throughout the process, such as 3 defined meetings; additional arrangements are organized whenever necessary.

8.3.6 Research for Design

8.3.6.1 Design research programs and resources

The organization carries out several research activities in order to inform its design strategy and projects. Some of these routine research activities are carried internally by the marketing department and design management supervisors, and include competitor analysis, trend analysis and lifestyle research. For example, every 6 months, design management supervisors conduct research and analysis regarding megatrends, developments in the sector and in the wider design industry; evaluate company's present product portfolio within this context; and report these insights to senior management. There are also research activities that are outsourced to research firms. These are mostly market research activities that are conducted to get more specific insight about customer needs and preferences. They are sometimes conducted in the context of specific design projects, but mostly carried out in order to understand wider trends and preferences in ceramic sanitary ware and ceramic tile markets. One significant market research activity focused on making a customer segmentation based on customer needs and usage habits (Beyhan, 2013). As a result, 5 different customer types were identified in terms of factors such as their attitudes to the bathroom, their renewal frequency and desires. Design Management Supervisor for Bathroom Products indicates that another large scale research activity that has been conducted was aimed at making a segmentation of the domestic market, in terms of consumer's style perception. It

involved visiting homes, and talking to local consumers and architects, in 12 different cities that covered 7 geographical regions around Turkey. Although he underlines the value of this research in understanding consumers' reality, he notes that the research was conducted by a market research firm and hence had more of a market research perspective than a design research angle. Research activities also include making in-depth interviews with architects to inform specific design projects and market surveys regarding color and surface finishes. However, the company does not carry out any research activities focusing on user ergonomics or user behavior in the context of product use.

8.3.6.2 Information and idea networks

The organization has also established several information and idea networks feeding into design. These include: monthly subscriptions to a wide range of design and industry journals (33 different journals); regular attendance to industrial fairs; regular trend research reporting services attained from international trend research companies that detail micro and mega trends; and networks established with professionals, mostly in the fields of architecture and interior design. The company is also among 4 Turkish companies, which are corporate members of ISCID (International Council of Societies of Industrial Design).

In the previous years, there were also significant developments for the creation and sustenance of a large network consisting of design practitioners, design researchers and educators. As noted before, towards the end of 2008, and driven by the vision of the CEO of Kale Group, *Kale Tasarım Merkezi* (Kale Design Center) had been established in collaboration with İstanbul Bilgi University, Design Culture and Management Program (Kale Tasarım Merkezi, n.d., para. 6). The center was established as an independent platform aimed at promoting design. It sought to share and increase design knowledge, awareness and experience, by bringing together companies, professionals, educators and students in different disciplines of design (Kale Tasarım Merkezi, n.d., para. 7). Another major objective was to support the development of design awareness, understanding and use throughout companies under the Kale Group. For 5 years, *Kale Tasarım Merkezi* continued to organize events, workshops and conferences, and published a monthly design newspaper called *Tasarım Gazetesi*, which reported recent developments and trends in various design fields, ranging from industrial design and architecture to fashion and interaction design. The center also served as an important medium for bringing together universities with the industry. Besides, it represented a first in the

Turkish industry, where an industrial organization devoted extensive resources for the establishment of an independent design platform which is open to everyone. However due to design's weakening position inside organizational strategy in comparison to its previous status, since 2014 the center is inactive; its activities have been terminated, including the monthly newspaper, which has reached a total of 56 issues, ending with the last issue that was published on February 2014. Although the company indicates that it is thinking about how the center can be revitalized, there are no specific plans for the near future. Additionally, other than projects that had been carried out in the scope of Kale Design Center, the company does not currently carry out collaborative design projects with other research institutions or universities.

8.3.7 Training and Development for Design

8.3.7.1 General Training and Development

Concerning general training and development, it is seen that there are several training and development events taking place inside the organization, such as functional and occupational trainings given to specialists and retailers, trainings regarding products, trainings on organizational culture, leadership trainings, subject specific seminars and conferences, or seminars organized by functional departments. In the previous years, the company has also conducted some training events for the development of computer skills in office programs. But other than product trainings, other events or programs have not been systematized. There are problems with their continuity since there do not exist any regular training and development programs or systems that ensure continual professional and personal skill development. However, all the interviewees noted that the company supports all training and development requests that come directly from the employees.

Although providing full support when demanded, Kaleseramik is observed to have neglected the issue of ensuring the continuity of learning throughout the organization. Nonetheless, recently the human resources department has started important initiatives regarding training and development. They have conducted skill assessment covering all senior, middle and operational level management. Based on their results they are planning to design structured training and development programs under the name Kale Akademi (Kale Academy). Marketing Manager remarks that the company is aware of the indispensability of training and

development; that it should be made continual; and they are currently working on improving this issue throughout the organization.

8.3.7.2 Nurturing skills and creativity of design related personnel

As currently the organization does not have an established approach to ensure continual training and development, unsurprisingly there do not exist any regular or specialized training and development programs targeted at designers or design managers. Then again, interviewees indicate that training and development programs are supported, planned and conducted if they are requested by design personnel. The organization is also supportive regarding attendance of design personnel to industry and design fairs, exhibitions, and art and design events. Then again, the requests and planning comes from design employees and not through any routine or conscious attention to the development of their skills and creativity. Design management supervisor of the bathroom explains that these are largely left to designers' own awareness:

These are not hard to attain. You just have to ask for it. Actually, it's left to how much you love your job, how you approach your profession. (Design Management Supervisor for Bathroom Products, personal communication, November 19, 2015)

He exemplifies by indicating that previously he had made a request for enrolling in a 1 year certificate program carried out by İstanbul Bilgi University in Design Culture and Management, and the company was supportive in presenting the necessary time and resources for him to take the program.

The small in house team and design management supervisors seem to be conscious about their own professional development. Every year, they make a planning in advance, concerning fairs, events and programs they want to attend and make the necessary requests to the human resources department. However, the company does not have in place any established learning and development programs that are specifically targeted at the design staff.

8.3.8 Design Integration

8.3.8.1 Coordination and communication with other business functions, strategies and processes

In Kaleseramik, communication and coordination of design with other business functions is mostly limited to coordination at the level of activities that are necessary to carry out established processes such as new product development or re-design. Coordination at this level is effectively attained through the existence of detailed

process maps, routine meetings and accumulated experience in performing these activities. In order to support design's communication and coordination throughout the organization, the company has established regular design meetings that they call *Design Committee Meetings*. These are conducted monthly and individually for the 2 major product categories, which are bathroom products and ceramic tiles. The meetings are led by design management supervisors, and bring together senior managers and staff from the sales, marketing, design, product development, production and research and development departments. They serve as fundamental platforms for reviewing design projects; discussing problems as well as important issues; and ensuring communication and coordination between design and other functional departments.

However, the integration of design with other business processes and functions is seen to be lacking especially at the level of strategy. The organization is not observed to focus on to the alignment of design strategies with the strategies and plans of other major functional departments, other than those of marketing. There is no effective structure, mechanism or routine that makes sure that this is ensured. For example, the strategies and plans of research and development or production can be formed in a detached approach from design strategies or planning regarding design.

8.3.8.2 Role and place of design

Actually, the company is noticed to use design inside many of its business processes, such as innovation, brand development, corporate communications and customer experience. Besides these major roles, design also functions in cost reduction and optimization of products and production processes. Therefore, it can be seen that design has wide ranging roles and contributions throughout the organization. Despite its extensive involvement, design is still considered in a fragmented way, with responsibilities for different areas of design scattered inside the marketing department, without a more comprehensive approach to integrate their planning and execution and without a conscious effort in bringing design's input into these processes in their earlier stages of ideation and strategy formation. An interviewee mentioned that the previous organizational structure - with a separate design department and the management of design function by a senior level manager - was more effective in ensuring that design had a deeper influence and integration inside the organization at the level of strategies and processes of other business functions:

In brief, design has to be involved in and provide input to the strategies and processes of other functions, which was actually the case in the previous organizational structure with a higher position of design, but right now, despite a powerful consciousness and structure in lower level processes, design knowledge and understanding cannot penetrate much into upper level strategies. (Design Management Supervisor for Bathroom Products, personal communication, November 19, 2015)

It seems that the structuring of design management as a low level module under the marketing department renders design as a subordinate function to marketing. Currently, other than new product development and product improvement processes, design does not regularly play a role in the early phases of ideation and strategy formation.

8.3.8.3 Breadth of Design

Design activities are undertaken in a wide array of disciplines covering industrial design, graphic design, packaging design, interior design, retail environment design, exhibition design, customer experience design, and interaction design. Industrial design, packaging design and spatial design activities are carried out in a mixed approach, combining in-house and outsourced design skills. Yet, as it was mentioned previously, only a smaller percentage of these activities are performed in-house. Design activities in all the other areas are outsourced to external design consultancies and communication agencies.

8.3.8.4 Coherence and coordination between different areas of design

The responsibility of ensuring consistency and coordination between the outputs of different design disciplines is under the marketing department. Vice President of Marketing indicates that consistency is monitored and maintained through the tacit knowledge and experience of the marketing team that has been developed over the years; and supported by formal manuals and guidelines, such as the corporate identity manual, display and exhibition standards, brand guidelines and Kale Design DNA. Marketing Manager likewise states that consistency is ensured through the accumulated experience of the team, routine meetings, as well as the coordination of all design activities under the marketing department.

Design Management Supervisor of the Bathroom notes that the changes in marketing strategy towards a more holistic approach to the bathroom, which is being undertaken since the last 2 years, also played a significant role in increasing the consistency and coordination between different design projects and the outcomes in different areas of design. Interviewees explain that before, there were problems

regarding this issue, even in the context of different product categories, such as ceramic tiles, ceramic sanitary ware and bathroom furniture; the tile collections for the year could be designed in an entirely disparate style than ceramic sanitary ware products or bathroom furniture. However through company's new marketing strategy, which seeks to generate a more integrated approach to the bathroom, consistency is now more deliberately monitored.

Presently, a certain level of harmony is observed in terms of the outputs of different design disciplines. Still, this issue seems to lack a more professional eye and perspective as it is left to the judgment of marketing specialists. Additionally, although the overall responsibility is under marketing department, design projects in different design disciplines are managed by different people under the marketing department, making it harder to maintain consistency.

Kale Design DNA, which has been finalized recently, is expected to help the organization achieve an increased level of coherence in different areas of design by providing core notions and standards that guide design decisions. Presently, it is observed to function in the lower level decisions regarding design projects, however it has not been totally internalized yet. Although it is very valuable in providing direction for design decisions and processes, in the current picture it seems that the company does not have the necessary design management structure in place to put it into full effect.

In this respect, another significant development is the start of a new collaboration with a foreign design consultancy firm regarding design strategy. This actually started as a project directed at product design, but through the guidance of the design firm, the project has been expanded to cover overall design strategy and customer experience. In collaboration with this design consultancy firm, marketing team is planning to map its customer journey and begin the design of all customer touchpoints and services based on Kale's Design DNA, design strategy and customer segmentation studies.

8.3.9 Culture and Climate for Design

8.3.9.1 Design awareness & understanding of senior management

Kaleseramik presents an interesting case regarding culture and climate for design. Observing significant financial resources allocated to design; the breadth of design activities undertaken in different areas ranging from products to communications and environments; the existence of a corporate design policy and guidelines

manual; as well as ongoing projects regarding customer experience and service design, one would naturally expect a high level of design awareness and understanding inside senior management. However it was seen that this is not the case. Instead, the vision behind design orientation of the company and major initiatives to support this vision are seen to be driven by the CEO of Kale Group and Kale Group's Vice President of Organizational Development. In addition to all other key informants, Kale Group's Vice President of Organizational Development herself underlined the CEO's high level of awareness and endorsement regarding design:

Our group's President and CEO is highly interested and strongly believes in design. She has a huge effect in design to be endorsed and to come into prominence inside the organization.
(Kale Group Vice President of Organizational Development, personal communication, February 23, 2016)

In their efforts of re-orienting the company towards an increased focus on design, these key individuals had started several important programs and projects. Some examples were already noted before such as: the creation of "design platforms" – meetings and programs that concentrate on the integration of design inside Kale Group's companies; establishment of *Kale Tasarım Merkezi* (Kale Design Center) as an independent platform to promote design through workshops, events and publications; and the enrollment of nearly 30 people from the staff in training and learning programs that were carried out in collaboration with Design Culture and Management Program of İstanbul Bilgi University. These programs were directed at the cultivation of design culture inside the organization.

However, when the interviewees were questioned regarding design awareness, understanding and commitment of senior management of Kaleseramik, their responses revealed problems with respect to these issues, indicating that the design understanding and commitment of the aforementioned key individuals in top management of the Kale Group, is not yet revealed in the senior managers of the company. Design Management Supervisor for Ceramic Tiles states that senior managers in general are relatively "strangers" to design and this causes challenges in convincing, as well as in the practical application phases of design projects. Likewise, Marketing Manager indicates that senior managers other than those in marketing department are still "questioning" design. According to the Design Management Supervisor for Bathroom Products, although design is utilized in many contexts, design understanding and approach of senior management is still rather superficial:

As I have mentioned before, Kaleseramik is probably the company where the word design is used the most, but in a sense that's a little bit hollow. Therefore even though design is there in many processes, it is there in a superficial way. In reality, the low-level staff has consciousness regarding design's strategic significance. This is supported by many mechanisms such as Kale Design DNA, but in the upper-level processes, in senior level management, it is still approached superficially. (Design Management Supervisor for Bathroom Products, personal communication, November 19, 2015)

8.3.9.2 Design commitment of senior management

Interviewees point that compared to their level of design awareness and understanding, senior managers exhibit a higher level of commitment to design. It seems that even though they have problems with respect to design awareness and understanding, they reveal higher levels of commitment knowing that design is strongly supported and driven by the CEO of Kale Group. Yet they are still getting used to integrating design into their practices.

8.3.9.3 Design attitudes of employees

Coming to design attitudes of employees, more positive and supportive attitudes are generally limited to the employees of marketing and sales departments, as they are directly involved with design projects and their outcomes, resulting in greater understanding and recognition compared to other departments. Other than those in the marketing department, positive design attitudes are still developing. In general, employees are aware of design's significance, believe that it is valuable and are interested in design, but have problems in understanding the process and more specifically with regards to changing their established methods of working and integrating design into their daily routines:

They say yes design is a good thing, but only if you don't outstretch their processes. They can't relate design with their working routines but there is not any negativity in general. If you cause burdens regarding established working routines then there can be problems. [...] In my opinion, it [their attitudes regarding design] is neutral because you should also consider their support in the process, at the end nobody would say design is harmful. (Design Management Supervisor for Ceramic Tiles, personal communication, December 15, 2015)

Consequently in the current picture, positive attitudes towards design are mostly at the level of awareness and interest. They have not yet turned into an organization wide commitment and support regarding design processes.

8.3.9.4 Environment for creativity

With respect to the organizational environment for creativity, the company does not reveal the existence of any established mediums or procedures that support the

development of a creative organizational culture. Actually, the interviewees indicate that the company is unusually open to new ideas and approaches. They are really well received and mostly supported if they propose a visible direction for improvement. However, novelty, experimentation and looking for new approaches to business activities are not specifically encouraged by managers, or by the established organizational culture and routines. Instead, interviewees note that these ideas mostly come from certain individuals due to their own characteristics.

The company does not focus on the development of procedures that deliberately oversee the generation and sustenance of a creative organizational culture. In this context, the interviewees also pointed to problems regarding the integration and sustainability of new ideas and initiatives. Marketing Manager and Design Management Supervisor for Ceramic Tiles indicated that although new ideas are initially supported and well received, support and commitment cannot be sustained throughout the application phases:

We are a company that accepts ideas really fast. However our problems start in the second phase. (Design Management Supervisor for Ceramic Tiles, personal communication, December 15, 2015)

Similarly, observations as well as the views of interviewees regarding work environments do not point to the existence of an environment that encourages creativity. As a result it can be said that the value of creativity is recognized but is not reflected in organizational culture and routines.

8.4 Design Management Audit Framework Assessment Results

Based on the findings that have been detailed in the previous sections, design management capabilities in Kaleseramik were assessed according to the Design Management Audit Framework Assessment scale, which was developed in the theoretical phase of the study.

As detailed in chapter 4.9 and chapter 6.6, the scale evaluates each item of the audit framework according to 4 levels, with Level 4 indicating the highest level of competence.

Table 8.2 presents the ratings for Kaleseramik, with respect to each issue taken into consideration throughout the assessment process.

Table 8.2 : Assessment results for Kaleseramik.

	Level 1	Level 2	Level 3	Level 4
Design in Strategy				
Strategy Formulation Process				X
Strategic Planning Process				X
Strategy and Planning Communication				X
Design in Strategy			X	
Design's Input to Strategy Formulation			X	
Planning for Design				
Design Planning				X
Design Planning Horizons				X
Design Policy and Standards				X
Investments for Design				
General Budget Allocation				X
Design Budget Allocation				X
Design Processes				
General Process Awareness				X
Design Process Awareness			X	
Design Process Management				X
Design Process Thinking, Methods & Tools			X	
Legal Processes for Design				X
Design Evaluation Processes			X	
Design Organization (People and Structures)				
Design Management Responsibility			X	
Design Skills			X	
Organizing for Design			X	
Research for Design (DC and KBV)				
Design Research Programs and Resources			X	
Information and Idea Networks			X	
Training and Development for Design				
General Training and Development		X		
Nurturing Skills and Creativity of Design Personnel		X		
Design Integration				
Coordination and Communication with Other Business Functions, Strategies and Processes			X	
Role and Place of Design			X	
Breadth of Design				X
Coherence and Coordination Between Different Areas of Design			X	
Culture and Climate for Design				
Design Awareness & Understanding		X		
Design Commitment of Senior Management			X	
Design Attitudes of Employees			X	
Environment for Creativity		X		

8.5 Summary, Major Findings and Conclusions with Respect to Design Management Capabilities

Kaleseramik is a leading player of the ceramic sanitary ware industry, which belongs to the Kale Group. The group originally began its operations in the ceramic wall tiles establishing the first company to begin industrial production of ceramic wall tiles in Turkey, in 1957. The group entered the ceramic sanitary ware sector in 1993 as a response to a major ceramic sanitary ware manufacturer's entrance into the ceramic tiles sector. Naturally, the group acquired design and design management capabilities initially in the context of ceramic tiles, by the establishment of a small in-house design department.

However when the group entered the ceramic sanitary ware market, for the initial years the focus was totally on gaining production know-how and efficiency. But after these founding years, starting with the second half of 1990s, the group's company dedicated to ceramic sanitary ware started developing its original product designs. However, this time the company chose to utilize external design expertise instead of building in-house design capabilities for ceramic sanitary ware, due to several factors such as the number of new products developed in a year being considerably less than those of ceramic tiles, prior difficulties experienced in the development of in-house design capabilities and the perception of external design professionals as being more creative. Therefore the company started developing design management skills largely in the context of managing external design professionals. This decision has been followed throughout the years and still a large percentage of company's design activities are carried out through the use of external design expertise.

Throughout 2000s the company is seen to have developed its design management capabilities mostly in the context of design project management, and organization and coordination of design activities with major organizational processes, such as production and marketing. Yet towards the end of 2000s, the group started focusing on the development of strategic level capabilities in managing design. This is seen to be initiated with the objective to drive a larger process of strategic renewal that involved major organizational transformations regarding the management structure and marketing approach of the group companies. Several important design programs were initiated to develop design management capabilities, to increase design awareness and understanding, as well as to restructure design and design management processes. As a result, from the end of 2000s up to now, there has

been significant developments in terms of design management capabilities; but this process has also involved challenges, times of confusion and several backward steps.

Throughout the chapter, design management processes, approach and capabilities of Kaleseramik have been analyzed with respect to each item of the Design Management Audit Framework and in the previous section, the assessment results were presented in Table 8.2. As can be observed from the table, design management capabilities of Kaleseramik are observed to be the most advanced in the categories of: *Design Planning*, *Design Investments*, *Design in Strategy* and *Design Processes*. Majority of the items under these categories are assessed at Level 4, with very few items being assessed at Level 3. Items under the categories of *Design Organization*, *Research for Design*, and *Design Integration*, are assessed to be at Level 3, indicating a good level of competence in these spheres, yet below the level of organizational competencies grouped under *Design Planning*, *Design Investments*, *Design in Strategy* and *Design Processes*. The organization revealed the weakest capabilities in the categories of *Culture and Climate for Design* and *Training and Development for Design*. Items under *Culture and Climate for Design* received ratings ranging between Level 3 and 2, whereas all items under the category of *Training and Development for Design* were assessed at Level 2, revealing this category as the most ineffectual design management capability category inside the organization. Following is a brief review of company's capabilities starting from the most advanced and moving to the weakest categories.

With respect to *Design Planning*, it was seen that planning is an organization wide approach that drives all business processes including design, complemented with a long term approach taken in the planning of design projects inside the organization. Additionally, the company is the first in the industry to have defined its corporate design policy and standards through an official design manual, called Kale Design DNA, indicating a high level of capability in terms of planning for design. In terms of *Design Investments*, the company is observed to be allocating its financial resources to all business functions and activities through the use of structured tools and procedures for financial planning and evaluation. This approach is also observed in the context of design investments. With respect to the category of *Design Processes*, a high degree of general process awareness is observed; there are detailed definitions and maps regarding all activities and processes being carried out inside the company, as well as a focus on the improvement of most of these processes. Yet for design processes, although a clearly articulated design process

is in place, some problems exist in the application phases, specifically in terms of following the articulated procedures. Still, it is observed that design is a clearly recognized process that consistently contributes to several major processes such as NPD, marketing and corporate communications.

With respect to the category of *Design in Strategy*, the company is assessed to be in Level 4 in terms of organizational *strategy formulation*, *strategic planning* and *strategy communication* capabilities. Yet regarding the capability items *design in strategy* and *design's input to strategy formulation*, the company is evaluated to be in Level 3. This indicates that design has not been fully integrated to company strategies at a more holistic level, and is still receiving a fragmented position under the marketing strategies of the organization. Design objectives and processes have not been effectively related to the wider business context and other major business processes and goals. Additionally, design's input to strategy formulation processes inside the organization is mostly limited to the formulation of design strategies within a product management focus. Design's input or involvement in higher level strategy development or in terms of the formulation of design strategies in areas other than product design is not currently observable.

The company has considerable experience and skills in organizing design activities through outsourced design or through the use of in-house capabilities. Capabilities are again at a good level (Level 3) in the selection of design skills; with respect to managing design projects and organization; and with regards to bringing together necessary parties throughout design and development processes. However, there is no explicit focus on the development of these skills. More importantly, currently there is no assigned responsibility for the management of design at the strategic level. The tasks under this level are partially carried out by different people under the marketing department. Compared with the previous design organization, the company is observed to have diminished its focus on the strategic management of design activities considerably. This is also observed to be generating several undesired side effects specifically concerning: the level of design integration throughout the organization, design's position in overall company strategy and the development of an elevated level of culture and climate for design inside the organization.

Research activities that feed into design are numerous and reveal a structured approach, but they are mostly limited to market research and trend research activities. They do not involve any form of user research focused on identifying the needs and requirements of potential users or a wider research plan for design.

Therefore, *Design Research Programs and Resources* were assessed to be at Level 3. The organization gives attention to maintaining *Information and Idea Networks for Design* (Level 3), through attendance to industrial fairs, design fairs, exhibitions and events; and following numerous design journals and publications. Yet currently, these networks are mostly established and followed through the requests and planning made by the in-house design staff and not as part of an intentional or established program/process feeding into design.

In terms of *Design Integration*, the communication and coordination of design with other business functions, processes and strategies is only attained with respect to closely related functions and processes such as marketing and production (Level 3). Although design is integrated early in the NPD process as an established working method, and seems to function as the driver of this process, it is not involved in the earliest stages of ideation and strategy formation with respect to other significant processes, diminishing the possible roles that design can have throughout the organization. Therefore this capability is also assessed at Level 3. With respect to the design disciplines utilized, the company shows an unusual breadth (Level 4), ranging from the more anticipated design fields like industrial and graphic design, to the much less common design fields utilized in the ceramic sanitary ware industry like interaction and service design. However, organizational capabilities with respect to establishing coherence and coordination between activities carried out in different design fields (Level 3) need improvement.

Items under the category of *Culture and Climate for Design* are assessed to be varying between Level 2 and Level 3, revealing several weaknesses in this context. Currently, design is well integrated into NPD and marketing processes; design activities cover an unusual breadth; there are considerable investments regarding design. However, these developments are observed to be pushed down from the top management of the Kale Group, namely Kale Group's CEO and Vice President of Organizational Development. Although company's direction towards a more design oriented business had also been supported by major programs targeting the cultivation of a design culture inside the organization, design awareness and understanding does not seem to have diffused into the majority of senior management, other than that of marketing and sales (Level 2). Still, senior management shows relatively higher levels of commitment regarding design activities (Level 3), observing that it is increasingly becoming an indispensable resource in the ceramic sanitary ware industry. Although majority of the employees regard design as a crucial element of their business, *Design Attitudes of Employees*

(Level 3) have not yet developed into an organization wide commitment, support and culture for design. Regarding the *Environment for Creativity* (Level 2), the organization lacks attentiveness to the development mediums or procedures to support the encouragement of a more creative organizational culture.

The organization is assessed to be the weakest in the category of *Training and Development for Design* (Level 2) as the company did not reveal the existence of any established programs, neither regarding general training and development, nor for the nurturing of skills and creativity of design personnel. Although the company carries out several training and development activities and is very supportive towards requests coming from its employees, regularity or continuity of these programs is not ensured yet. Therefore, the skills in this category are assessed to be at Level 2. This indicates a lack of focus on continuous training and development, which is a highly significant process supporting organizational development in all spheres, as well as the development of design and design management capabilities.

Looking at the overall picture, although the business has considerable experience and capabilities in managing design, it is observed that design and design management capabilities cannot be considered among the core capabilities of the company.



9. CASE STUDY 3 – SEREL SERAMİK

This case study concentrates on understanding design management capabilities inside a large scale manufacturer which had started ceramic sanitary ware production in the early 1980's. The company was established as the second industrial manufacturer inside the industry, as a result of the diversification decision of a leading Turkish business group that already had significant operations in faucet, valve and boiler sectors. Presently, the company emerges as the second leading player in the domestic market in terms of market share.

The chapter begins with an introduction of the company, presenting its profile, operations and history. Then, the chapter focuses on the development of design and design management capabilities, portraying their initial acquisition and evolution throughout the years. Following this section, the case study examines current design management capabilities in a comprehensive manner, and according to the major categories used in the design management audit framework that had been developed in the theoretical phase of the thesis. Next, the evaluation of present design management capabilities is presented in line with the assessment scale of the audit framework. Lastly, the chapter is ended with a summary of case study findings.

9.1 Company Profile and History

9.1.1 Profile

Serel Seramik (currently functioning under the official name Matel Hammadde Sanayi ve Ticaret A.Ş. Serel Seramik Fabrikası) is one of the prominent companies under the Elginkan Group, which is among the most established business groups in Turkey. The group was previously governed by the family owned Elginkan Holding. However, Serel Seramik, as well as all other companies under the group are currently affiliated to the Elginkan Foundation (Elginkan Vakfı), which was established in 1985 by the founder Hüseyin Ekrem Elginkan, to perform the management of group's companies. To open a small paranthesis, although the establishment of charitable trusts and foundations by recognized business groups can be a more customary routine, the governance of a family owned business group

through a foundation represents an extremely unusual case in Turkey (Elginkan Foundation, n.d., Founder of Our Foundation; Erçek & Günçavdı, 2010, 2016; Güler, 2014). However, not having a family member to hand over responsibility for the management of the business group, the motivation behind this decision of the founder is reported as the ideal to ensure the continuity of the group's organizations, as well as his high moral and ethical standards that he wanted the foundation to carry as a legacy through its governance structure, management principles and codes of conduct. The principles and values set forth by the founder as well as the institutional ownership of the group by a foundation are observed to have significant impacts on the culture, business approach and managerial decisions of the company (Erçek & Günçavdı, 2010, 2016).

Table 9.1 : Overview of company profile.

Name of Company	Matel Hammadde Sanayi ve Ticaret A.Ş.
Number of Employees	700
Turnover (in Turkish Liras - TL)	Confidential
Export Amount (percentage of turnover)	30%
Management System Certifications	• TS EN ISO 9001 Quality Management System Certificate • TS EN ISO 14001 Environmental Management System Certificate • TS 18001 Occupational Health and Safety Certificate • TS ISO 50001 Energy Management System Certificate • TS ISO 10002 Customer Satisfaction System Certificate
Product Range and Brands	• Ceramic sanitary ware (Brand Name: Serel) • Complementary products (Brand Name: Serel) • Bathroom furniture (Currently not inside the product range but occasionally production is outsourced for contract projects) (Brand Name: Serel)
Range of Design Activities	• Industrial design • Graphic design • Retail space, interior and exhibition design • Web design

Serel Seramik is Elginkan Group's company that focuses on the production of ceramic sanitary ware, complementary products and accessories. The company was established in 1978 and has a production capacity of 1.5 million pieces of ceramic sanitary ware a year. Company's products are marketed under the brand name Serel. Although in the past, the group also had operations in the ceramic wall and floor tiles category (which were also marketed under the brand name Serel),

currently Serel brand solely encompasses ceramic sanitary ware, complementary products and accessories.

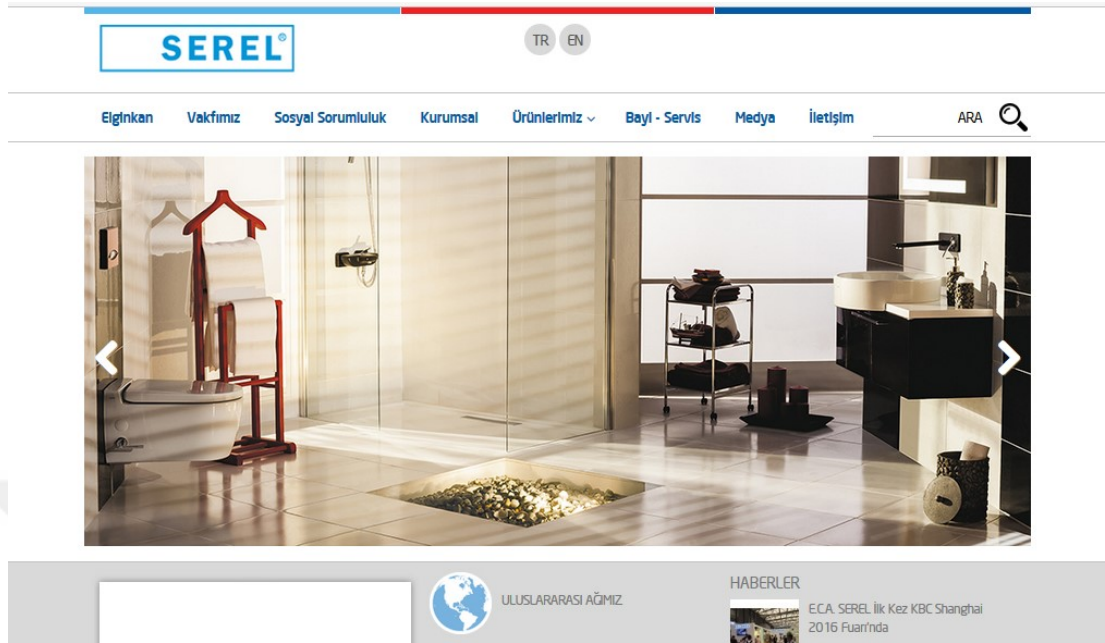


Figure 9.1 : A screenshot from Serel Seramik's web page.



Figure 9.2 : Examples from Serel branded ceramic sanitary ware products from the Amphora Collection.

Until 2 years ago, company's product range also included bathroom furniture, which were designed in-house but produced through outsourcing. Currently, bathroom furniture has been pulled out of the product range. However, the company carries

out outsourced production activities for these products occasionally, when it turns out to be necessary in the scope of contract projects. Faucets and plumbing systems that are produced by other companies under the Elginkan Group are marketed under the brand name ECA, which has long been the most renowned brand of the business group.

Due to the corporate structure of the group, the marketing and sales of all products manufactured by various companies under the group, from radiators and heating boilers to faucets and ceramic sanitary ware, are carried out in the domestic market by a separate company named Elmor A.Ş. Likewise, the marketing and sales operations of these products in overseas markets are carried out by another company under the group, named Eleks A.Ş. Thus, there is a clear separation regarding manufacturing and marketing & sales capabilities of the group, by being clustered under distinct companies. It must be noted that this structure is seen to bring about considerable consequences in terms of company's present design and design management capabilities, as well as its design approach, which will be revealed in the following sections that particularly focus on design management capabilities

Domestically, Serel Seramik is the 2nd player in the ceramic sanitary ware market, operating through the extensive distribution network of Elmor A.Ş. On the other hand, in world markets, through the network and operations of Eleks A.Ş., Serel exports its products to more than 40 countries, including Russia, England, Netherlands, Germany, Spain and Belgium, as well as North African and Middle Eastern countries. With exports constituting 30% of its total production, the company declares its vision as "Becoming a leading global brand and eternal organization in ceramic sanitaryware production and product and service area" (Serel Seramik, n.d., Our Mission).

9.1.2 History and development

Elginkan Group's founder, Hüseyin Ekrem Elginkan had begun his first business activities in 1951, with the provision of engineering services regarding boiler contracting. In 1953, he had partnered with his brother and established a construction company that rapidly grew in the 1950s as a result of increasing infrastructural construction projects that were planned by the Turkish government for the rural development of Anatolia.

At the time, Turkey was mostly based on an agricultural economy; lacked domestic industrial capabilities, and there was a growing need for imported foreign products.

Observing the increasing demand for imported goods, the brothers decided to enter the manufacturing industry, and in 1957, they established ECA Presdöküm A.Ş., for the production of pressure molded faucets and plumbing systems. Although the initial years were difficult, together with increasing urbanization and continuous growth in the construction industry, the initiative proved successful. Through the years, ECA brand became the market leader in faucets, valves and plumbing systems, while the business grew into a group of companies that are diversified into several industries, mostly focusing on the production of intermediary goods for the construction industry, such as faucets, boilers, radiators, gas meters and sanitary ware. Currently, Elginkan Group, with its 19 companies and around 3000 employees, operates in various sectors ranging from construction, building products, and industrial raw materials to finance and services.

The foundations for Serel Seramik's production plant were laid in Manisa Organized Industrial Zone in 1978, and the plant began the production of ceramic sanitary ware in 1982, with a capacity of 400.000 pieces per year. In 1980, another company, Matel A.Ş., was also established under the Elginkan Group, in order to supply the raw materials necessary for ceramic production.

At the time, Elginkan Group had already established itself as the single large scale manufacturer of faucets and plumbing systems with its famous brand ECA. Although having completely separate production processes, ceramic sanitary ware is an indispensable complement to these products, as they have to be utilized together in order to install a working sink, toilet or bathing unit. Observing the rapid development in the construction sector and the complementariness of ceramic sanitary ware with faucets and plumbing products, the founder of Elginkan Group, Hüseyin Ekrem Elginkan, decided to enter the ceramic sanitary ware sector and established Serel Seramik, based on technology transfer agreements with Italian and German firms (Elginkan Topluluğu, 2011; Günçavdı, 2009).

Günçavdı (2009) and Tüzün (2010) indicate that another major event was highly influential in Hüseyin Ekrem Elginkan's rapid decision to diversify into an unrelated industry and to establish Serel Seramik. It was the offer that came from Nejat Eczacıbaşı, the founder of the Eczacıbaşı Group, which was at the time, the single large-scale manufacturer of ceramic sanitary ware in the domestic market, to bundle E.C.A. branded products with Eczacıbaşı Group's Vitra branded ceramic sanitary ware and to carry out their sales through Vitra's distribution network. The rejection of the business offer resulted in diversification decisions on the side of both business groups, with Elginkan Group entering the ceramic sanitary ware sector, and

Eczacıbaşı Group entering the faucet and plumbing systems industry. After the foundation of Serel Seramik and its rapid development taking place during the 1980s, Serel brand became a major competitor to Vitra branded ceramic sanitary ware produced by the Eczacıbaşı Group (Günçavdı, 2009). Whereas at the same time, Eczacıbaşı Group established a plant for the production of faucets and plumbing systems, and gradually became a major competitor to the ECA brand of the Elginkan Group with its Artema branded products (Günçavdı, 2009; Tüzün, 2010). According to Erçek and Günçavdı (2010) this occasion “marked the beginning of inter-group competition in Turkey” (p. 22), as Turkish entrepreneurs started following unrelated diversification strategies in the context of major markets.

After rapidly establishing itself in the domestic market for ceramic sanitary ware, again in the 1980s, Serel Seramik entered the ceramic wall and floor tiles industry by purchasing a plant in Bilecik, and restoring and upgrading its technology for ceramic wall and floor tile production (Tüzün, 2010). Additionally, Elginkan Group continued to increase the range of Serel branded products, by making further investments in bathtub production. Accordingly, by 1997, Serel brand was able to provide all products under the ceramic bathroom products category, from ceramic sanitary ware and bathtubs to ceramic wall and floor tiles.

While the 1980s were proliferating times for the company and the Elginkan Group, as they were for most other Turkish businesses, 1990s were more difficult times for the group. Due to deteriorating financial conditions of the Elginkan Group, in 1997, ceramic wall and floor tiles plant was sold and the company began to focus more intensely on ceramic sanitary ware production. Following this, in 1998, company's total production capacity for ceramic sanitary ware was increased to its current capacity, which is 22.000 tons/year, being equivalent to about 1.5 million pieces of ceramic sanitary ware per year.

Although, the company was founded based on technology transfer and know how acquired from foreign companies, in a short period of time, the company internalized these technologies, accumulated increased know-how in the production of ceramic sanitary ware and began to develop its own product and process technologies (Elginkan Topluluğu, 2011). Some examples from the innovative products and technologies that were developed by the company include: the first toilet in the industry with an integrated faucet for personal cleaning (in 1986); antibacterial toilet seat cover (in 2001); hygienic surface technology Serel Extraclean (in 2001); and the first toilet in the industry with an integrated touchless faucet system (2002) (Elginkan Topluluğu, 2011).

Owing to the engineering and production oriented mentality of the Elginkan Group, and its “engineering-dominated governance structure” (Erçek & Günçavdı, 2010, p. 27), for a long time Serel Seramik is seen to have focused more heavily on quality, efficiency and providing superiority in technical details. Observations made in the field trip, company documents and interviews with company managers also revealed that beginning with its foundation and continuing all throughout the years, the company placed great emphasis on the development of its in-house design capabilities, viewing these skills as integral to technology development. Yet these capabilities were developed mostly inside a production oriented outlook. However, an increased focus on the development of design and design management capabilities and design’s stronger integration into the business strategy began to be more discernible only after 2008, as a result of major organizational and strategic changes.

The transformational period was initiated due to problems regarding the financial performance of Serel Seramik. To begin with, in 2008, Serel Seramik and Matel A.Ş. were consolidated under Matel Hammadde Sanayi ve Ticaret A.Ş. Together with the consolidation; major changes started to take place inside the organization, as well as significant changes regarding Serel’s business strategy. The company, which used to focus its products on the economic and low income segments, began to direct its production towards the middle and upper middle income segments and declared its goal to become the market leader in the middle income customer segment (General Manager, personal communication, December 18, 2015). Together with this major change in market focus, design began to receive a heightened position in company strategy. This major decision and supportive managerial changes seem to have proved successful, as the company has been increasing its market share considerably since then (Dünya İnşaat, n.d.). According to the current General Manager, Serel’s market share which was 3% in 2008, has currently increased to 15% (General Manager, personal communication, December 18, 2015).

Serel’s mounting success has also resulted in the group’s decision to utilize and associate the Serel brand name with Elginkan Group’s strongest brand ECA, the long-standing domestic market leader in faucets and plumbing systems. As the interviewees pointed out, before Serel established itself as the 2nd player in the ceramic sanitary ware market in terms of market share, the group had refrained from making any associations between the two brands in order to protect the positioning of the ECA brand. But now with Serel’s renewed strategy and successful

performance, the group is proudly using the brand names together in several communication and PR mediums.

9.2 Development of Design and Design Management Capabilities

As have been mentioned in the previous section, Serel Seramik was founded based on technology transfer agreements made with foreign companies. After an intense period of research into the technologies possessed by ceramic sanitary ware producers in different countries like Finland, Sweden, Norway, Germany, France and Italy, production systems and machinery required for ceramic production were decided to be purchased from Italian and German firms (Tüzün, 2010). Together with technology procurement, agreements were also made on the training of personnel regarding the utilization of purchased machinery and technologies. As the majority of machinery and know how was acquired from Italian producers, employees were sent to Italy for the training and learning of production processes and technologies (Günçavdı, 2009). Additionally experienced staff was transferred from Eczacıbaşı VitrA, which was at the time the single large scale manufacturer of ceramic sanitary ware in Turkey (Günçavdı, 2009; Tüzün, 2010).

For the first series of products, product designs were either directly transferred from Italian products to the Turkish market, or were developed in Italy, with some contributions coming from Turkish designers (Günçavdı, 2009). However, from the second generation products onward, the company began the development of product designs and molds based completely on its internal capabilities (Günçavdı, 2009).

Since its foundations, Elginkan Group has strongly embraced the use of local resources and capabilities in all organizational activities as one of its fundamental corporate codes (Elginkan Topluluğu, 2011). Additionally, the group gives great emphasis to the development of core capabilities inside the group organizations, and even more so for capabilities under technology development and manufacturing excellence (Erçek & Günçavdı, 2016). Moreover Erçek and Günçavdı (2016) reveal that the founder's personal choices and characteristics which emphasized independence and engineering excellence were imprinted in a strong corporate culture prioritizing these issues over collaborations with external parties and the use of external resources. These are among the important motivations behind a deliberate focus on the rapid development of product design and development capabilities, as well as research and development capabilities inside the company, starting from its founding years. This stance was also revealed in the interviews with

Design and Application Manager and the Design Chief, as well as corporate documents that detailed the capability building process regarding product design and development competences:

In a manner which is not unfamiliar to Elginkan companies, the first generation products were realized through support received from foreign resources. However, the design and manufacture of product generations from then onwards were continued completely through local capabilities. Instead of acquiring design services from overseas, all production processes and primarily the design of industrial products should involve the efforts of people coming from the Anatolian culture. (Elginkan Topluluğu, 2011, p. 62)

Specifically concerning design, a new design department was established in İstanbul, in 1981, as a separate company named Kepsel Seramik Sıhhi Tesisat Gereçleri Sanayi ve Ticaret AŞ (Design Chief, personal communication, February 9, 2016). The design department was composed of designers that had an educational background in the ceramics and glass departments of fine art academies. The department was headed by Müçteba Kundul, who had been transferred from Eczacıbaşı VitrA, and who is one of the first ceramic sanitary ware designers of Turkey. The current design chief explains that after the department acquired initial design and development capabilities in ceramic sanitary ware through the collaborative work undertaken with Italian designers for the first group of products, the company started to undertake all design activities through its in-house design skills (Design Chief, personal communication, February 9, 2015).

Together with new product ranges, design capabilities were also advanced gradually and by the beginning of 1990s, the in-house design team was able to design and develop sanitary ware collections that consisted of wide ranging product categories. For example, one of the most extensive product series in Serel's history, named *Orkide*, was designed and developed in this period entirely by the in-house design team. The first products of this series, which contained 28 different items, ranging from toilets and washbasins to reservoirs and bidets, entered production in 1993. (Many products from this collection are still produced and sold today by the company.)

Although in 1992, Kepsel AŞ was vested in Serel Seramik, the design department continued its activities in İstanbul until 1995, when it was moved to Serel Seramik's production plant in Manisa (Design Chief, personal communication, February 9, 2015). Some of the final pieces of products inside the *Orkide* series were designed and finalized in this new location and in the same year, the department is reported to have begun working on another broad ceramic sanitary ware collection titled *Kardelen*.

Until 1995, product design and development activities were carried out based solely on manual processes. Designs were drafted using technical drawings in 1 to 1 scale and the modelling of prototypes and molds were carried out by the design application staff that usually came from ceramics or sculpture backgrounds. But in 1995, Serel Seramik began the utilization of its first CAD systems. Initially, technical drawings and models for existing product ranges were completely transferred to CAD platforms, and later, all product design and development activities began to be performed using CAD technologies. This was an important step in the advancement of product design and development capabilities inside the company, as designs were now able to be developed in higher precision, and CAD technologies facilitated the generation of more advanced and organic forms that were highly challenging to design and develop through manual operations. This important development was followed by the installation of CNC manufacturing systems in 2001, which further speeded up the modeling, prototyping and mold production processes and increased the capabilities and efficiency of the in-house design team. By the beginning of 2000s, the department had acquired advanced design and development capabilities, as well as having expanded its staff to a total of 18 members.

During 2000s, significant changes took place inside the company in terms of the organization and management of design activities. In this period, design department was moved to a higher level in the management hierarchy. Until 2002, design department was structured under the factory management and it was coordinated by a design chief that reported to the factory manager. However, in 2002, the department was divided into 2 separate units, one focusing solely on product design activities and the other on design application, which basically involved the preparation of the molds and production infrastructure for the designed products. These units were now structured as independent departments that were headed by 2 departmental managers, and coordinated by 2 chiefs: one for design and the other for design application. More importantly, the departmental managers were now reporting to the general manager of the company instead of being positioned under the factory manager. Together with 2000s, the responsibilities of the design department also began to expand beyond the design of ceramic sanitary ware to cover complementary products and accessories, as well as occasional design activities in other areas like graphic design, design of company catalogues and exhibition environments.

In 2008, after the merger of Serel Seramik with Matel AŞ, the design and design application departments were again united under a single departmental organization named Design and Application Department. Currently, this structure is maintained. Additionally, the Design and Application Manager directly reports to Serel Seramik's general manager, as well as being an integral member of the company's management board.

From the first days of its establishment, the company is seen to have given considerable attention to the development of its product design and development capabilities, with gradual upgrades in expertise, technology, staff and management skills. Nevertheless, design as well as design management capabilities is observed to receive a significantly increased consideration in the period after the merger, in order to support major changes that took place in company strategy. Deciding to direct its market focus towards the middle and upper middle income segments, top management placed design as the principal tool for its strategic renewal process. The general manager explained that they have begun the change process through a complete review and renewal of their design strategy (General Manager, personal communication, December 18, 2015). This was complemented by organizational changes concerning the design department, and evaluation and restructuring of design processes taking place inside the organization. The company intensified its efforts in the development of its design and design management capabilities, with a substantial increase in its design driven new product development efforts. As a result, important results and developments began to be discernible beginning with 2010s, such as a significant expansion in the company's product range; a heightened brand recognition; increased acknowledgment in terms of product design; increased presence and awards in worldwide design competitions, like Red Dot, A Design, IF Product Design; and a striking growth in market share (from 3% in 2008 to 15% in 2015).

The Design Chief as well as the Design and Application Manager pointed that the development of design and design management capabilities progressed in close relationship with the aforementioned changes in strategy, as well as the development of capabilities in other areas such as marketing and production.

After Serel was consolidated with Matel, top management changed its perspective in many contexts, the reason for the change in our lines is the market that we headed towards. [...] Another factor is the change made by management regarding production infrastructure and capabilities. I mean not only design, but production capabilities are equally important, it was understood that as you improve your production capabilities design capabilities also improve. (Design and Application Manager, personal communication, December 18, 2015)

By the way not only changes in our management but also changes in the management of our sales companies [...] being able to act rapidly, being able to foresee where the market could be going, working in greater harmony, all of these are individual factors. Otherwise even if you do the best job in the world, if they don't see it, if it is not promoted, if it cannot be produced here, then it stays dormant. (Design Chief, personal communication, December 18, 2015)

As revealed by the new product lines developed by the company and their continual success in major product design competitions, currently, Serel Seramik develops its products and technologies, with a focus on the generation of design innovations as much as on technological innovations.

The following sections will focus on the analysis of current design and design management capabilities of the company, using the Design Management Audit Framework (chapter 4.9) that had been developed in the earlier phases of the research.

9.3 Analysis of Design Management Capabilities

9.3.1 Design in strategy

As mentioned in the previous sections, in 2008, Serel Seramik and Matel A.Ş. were merged under a single company. Together with this merger; the organization began to go through a restructuring regarding its strategy, as well as its internal processes. The company made a major strategic decision and directed its market focus from the economic and low income segments to the middle and upper middle segments, setting its objective to establish itself as the leader in the middle income segment. The change in market strategy is seen to have resulted in an increased concentration on design management. Necessitated by this major change in market focus, the then newly appointed general manager decided to initiate the transformation process by making significant changes regarding design strategy and processes of the company:

We had to make major strategic decisions when we came here, because Serel was not performing well economically. We came, studied, analyzed; examined the products, the sales channels. We identified that our product range was extremely limited; designs were mediocre, old-fashioned; products were mostly for the low income segment. We decided that our goal would be putting our weight in middle segment products and becoming the market leader, this would be our strategy in Turkey. [...] We began with design, the first thing we started doing was changing design, the moment we set foot. Even before reducing costs, we started the process by developing design. (General Manager, personal communication, December 18, 2015).

The sales and marketing director further explained the rationale behind this major strategic renewal:

Bathroom has grown into another world. Bathroom is more important now compared to the past. That's why in order to create added value, it is necessary to provide comfort, functionality and style at the same time. From here it was apparent that we needed not to produce more but to produce superior products. In this context instead of producing and selling more generic products directed at export markets, we decided to develop products directed at the mid and upper mid segments, washbasins that can be used with bathroom furniture, wall-hung toilets, elegant reservoirs. (Sales and Marketing Director, personal communication, December 18, 2015)

Other interviewees, namely the Sales and Marketing Director, Design and Application Manager, and the Design Chief similarly underlined this change of vision and transformation occurring after the merger and its effects on design strategy and capabilities of the company. Consequently, since 2009 design is receiving a noticeably heightened focus in company strategies. This increased concentration on design can also be observed in the product ranges that have been developed since the last 6 years; company's growing recognition in terms of industrial design; and its continual success in earning design awards in prominent design competitions worldwide beginning with 2010s.

9.3.1.1 Strategy formulation process

It is observed that the company has highly structured systems and procedures in place for its strategy formulation, strategic planning and communication processes. As the company belongs to and managed by the Elginkan Foundation, it has a unique governance structure compared to many other privately owned enterprises. When the founder Hüseyin Ekrem Elginkan established the Elginkan Foundation in 1985, he assigned the foundation as the institutional owner of the group's companies by handing over all his property and management rights to the foundation. He also devised an interesting governance structure for the foundation and detailed its purposes, activities and decision making processes through the foundation voucher (Elginkan Group, n.d., Foundation Voucher). In order to understand the strategy formulation and business planning processes taking place inside Serel Seramik, it is first necessary to understand the foundation's structure.

The foundation is composed of 4 bodies: board of trustees, board of management, supervisors and the foundation's directorate. The board of trustees is the highest decision making body of the foundation, and is composed of 34 members, among which 12 representatives are appointed by the foremost educational and scientific

organizations of the country (such as Boğaziçi University, Middle East Technical University, İstanbul Technical University, The Scientific and Technological Research Council of Turkey, etc.); 14 constant members assigned by the founder Hüseyin Ekrem Elginkan and 8 members that are included through election from the group's companies. The board of trustees is responsible for the election of the board of management of the foundation, which constitutes the representative and managerial body of the foundation. Board of management is composed of 7 members, 5 of which come from the board of trustees. In turn, the board of management elects an executive board named Elginkan Topluluğu İcra Meclisi (ETİM), consisting of 5 members who are responsible for carrying out the executive tasks for all of the group companies. As can be expected, this bureaucratic and controlled management structure results in highly routinized and scheduled processes regarding major decision making activities like strategy formulation, business planning, budgeting, for all companies under the group.

When the General Manager was asked to describe the strategy formulation processes in Serel Seramik, he began by detailing the governance structure of the Elginkan Foundation and explained that major strategies regarding all of the group's companies are formulated by the foundation's management board and handed down to ETİM - the executive board. The executive board is in turn responsible for the communication of these strategies to the general managers of each company. However both the General Manager and Sales and Marketing Director pointed that although strategies are decided by the foundation's board of management, strategy formulation, together with information, analysis, and suggestions regarding strategic options are actually transferred from Serel's management board to the foundation's board of management in a bottom-up manner, giving the foundation only the final say regarding strategic decisions and plans.

The body that determines the overall strategies in the context of the group is the board of management of Elginkan Foundation. It conveys them to the foundation's executive board, which is mostly composed of similar members. And they in turn, share these strategies with the general managers. Strategy making is performed in this manner. But they are actually transferred from us. It works in a bottom-up process. Here, we are the ones that know the sector we operate in, that's why we are the ones that say we can develop our strategies in this way, we can transfer to such and such a strategy, etc. Then, they make the decisions at the top level and pass them down. (General Manager, personal communication, December 18, 2015)

We first feed the information upwards, they are evaluated and condensed, again information is moved up and condensed, once more it is moved up and condensed and afterwards it

becomes a settled decision and moves downwards to be executed. (Sales and Marketing Director, personal communication, December 18, 2015)

Structured information and inputs guide strategy formulation and decision making throughout the organization, such as economic analysis, market analysis, benchmarking; analysis of world markets, growth potentials, previous year's performance results, future expectations and financial evaluations. General Manager explains that strategies of the group are developed every 5 years for each company, and revised every 2 years, in the light of changing conditions and performance outcomes. However besides these major strategies, strategies can be developed, changed and put to action based on the necessities of the day.

There is also a management board inside the company that is composed of departmental managers. Strategic options, decisions or suggestions are continuously discussed and articulated by the company's internal management board. Additionally, the group's sales and marketing companies Elmor A.Ş. and Eleks A.Ş. are also major partakers in Serel Seramik's strategy formulation process, especially regarding strategic decisions involving markets and new product development efforts. They participate in strategy formulation, as well as in the continual decision making processes of Serel Seramik through the monthly coordination meetings taking place between Serel Seramik, Elmor A.Ş. and Eleks A.Ş.

9.3.1.2 Strategic planning process

There is a regular and detailed business planning in Serel Seramik, which is guided by the major strategies of the company. Every year, each department carries out detailed business planning. The planning period starts around August and ends in September. There is also more long term planning for investments, initiatives and activities that require longer horizons. Business plans are continuously followed and evaluated through regular board meetings, as well as through the monthly coordination meetings conducted together with the group's sales & marketing companies, Elmor A.Ş. and Eleks A.Ş.

9.3.1.3 Strategy and planning communication

Similar to strategy formulation and planning processes, strategy and planning communication throughout the organization is also clearly defined and routinized. Besides communication through regular meetings, strategies, plans and major decisions are communicated through written documents and reports. Meeting minutes and decisions are reported and declared to related boards and managers in

a systematic way. From there on, departmental managers are responsible for the communication of necessary information to their employees. When necessary, information and decisions concerning the company are communicated to all employees by the General Manager. Additionally, the company makes use of its intranet system for communication activities like notifications and announcements.

The General Manager indicates that when he was first appointed to this position in 2009, he noticed that the root cause of many problems throughout the was the low level of communication and coordination between departments. Since then, he had been working intensely on improving communication and coordination between departments. To this end, he has devised regular company management board meetings that take place every day in the morning, bringing together managers of each department to discuss, evaluate and share their activities and perspectives regarding both daily and long term matters. Currently, these meetings continue, but take place 3 times a week. Interviewees similarly express that communication and coordination inside the organization is working successfully. Sales and Marketing Director believes that the communication of strategies and plans is really effective as well as the level of general communication inside the organization:

There is a serious sharing of knowledge. [...] Both orally and in written terms, a very strong background is prevailing here. (Sales and Marketing Director, personal communication, December 18, 2015)

9.3.1.4 Design in strategy

Since 2009, design functions as a central component of Serel Seramik's business strategy. Design is positioned as the principal tool for market growth, brand repositioning and brand development. The general manager indicates that design has been the primary factor in Serel's success in repositioning the brand and company's increasing market share ever since the merger. He also adds that their design emphasis was supported with a simultaneous concentration on quality and process design, in the generation of significant business outcomes:

I should say that our product is visual. In my opinion, design is one of the most important departments in this organization. Whatever you do, ceramics is ceramics, there are no major differences between one or the other, quality wise or technically. The only way you can differentiate is good design, the product to have an appeal. That's why design is very important. We were able to grow our market share from 3% and ascend from the 5th or 6th position in the market to our current position by giving weight to design. Additionally, we always had a high level of quality, which we never compromised. Besides industrial design, we also designed and developed new production processes. Recently, we launched Serel Hygiene Plus, the antibacterial coating technology, and currently all of our products provide

99% protection against bacteria. We are the first in the industry; I am not saying Turkey, we are the first in the industry. That is also design, it's a process design and we are seeing its profound effects. (General Manager, personal communication, December 18, 2015)

Design is part of strategy formulation and enters strategy discussions at the level of company management board meetings and coordination meetings carried out with Elmor AŞ and Eleks AŞ. Since 2009, the company has been pursuing a clear design strategy, together with explicit objectives and direction for design activities. Also, it was seen that the company works on the integration of design strategy with the strategies and plans of other functional departments, such as production, research and development, and marketing and sales. The company's management board meetings significantly assist this integration process.

9.3.1.5 Design's input to strategy formulation

Because the design and application manager is part of the company's management board, he participates in and provides input all throughout the strategy formulation and decision making processes inside the organization. But most specifically, design is observed to provide direction regarding product design and development approach, based on design research, trend analysis, and information gathered through fairs or other sources.

Concerning design's input in strategy, Sales and Marketing director specifically indicates that the design department guides the company by their analysis regarding trends, and in the light of this analysis they provide key suggestions on where and how they can differentiate their products (Sales and Marketing Director, personal communication, December 18, 2015). As an example, she explains their mix-match products, which allow making numerous combinations by matching several toilets with 3 different reservoirs. She underlines that just as in the case of these mix-match product concepts, the new perspectives presented by designers, both in terms of the finished product and in terms of extra features that enhance functionality and in turn generate increased sales, are the most valuable contributions provided by design:

For example this significantly strengthened our hand. Just a little perspective, the positive effects of a little change in perspective that results in differentiation is the greatest input that our designers provide to us. (Sales and Marketing Director, personal communication, December 18, 2015)

Design being an independent business function and design manager having an equal stature in the company's management board as that of other departmental managers, design strategies are observed to be formed, refined and determined in a collaborative approach, being closely connected to overall company strategies.

However, it was seen that due to having a manufacturing oriented culture, design's integration in company strategy and its input to the strategy formulation process is mostly limited to the areas of industrial design and product development. Although the company makes use of other design disciplines, they do not receive much emphasis inside the strategy formulation process. Consequently, compared to their industrial design capabilities, capabilities regarding the use of design in other areas such as graphic design, web design, exhibition design or retail environment design are significantly underdeveloped. Even a quick review regarding company catalogues, brochures, website and retail environments reveals this condition. When interviewees were questioned about this observation, all of them were seen to be quite aware of this shortcoming. They consistently pointed that this was due to certain limiting routines particular to the Elginkan Group, such as being bounded by the group's rules, not being able to act independent from the group's other companies; as well as Elginkan Group's manufacturing based culture and confined approach to marketing management.

We are not independent there. Generally our catalogues and communication materials are developed together for the brands ECA and Serel, they include ECA. As they are generated in a common approach, we cannot act independently. If we were able to proceed independently as Serel, it would be very different. Both our website and our catalogues would have been different. The group has a cumbersome structure in this context. You cannot change it. (General Manager, personal communication, December 18, 2015)

According to the Sales and Marketing Director, besides the limitations due to the high level of dependence between the group companies and the difficulties posed by the necessity to act as a single unified body, another major reason is the group's underdeveloped marketing capabilities, which is attributable to its long-held focus on manufacturing capabilities. Sales and Marketing Director explains:

We started the business as industrialists; we always had a manufacturing focused structure. [...] No matter what we do, we always stay as manufacturers and salesmen. I am really sad for having to say this because I think the same way as you do. The marketing side of the business is considered in a narrow manner. There are efforts about doing things, it is not zero, but the things that are realized are way behind what we deserve, especially when compared with our competitors. [...] I do accept that we are weak on the marketing side. And unfortunately unless we execute a more interactive marketing strategy, we are probably going to stay somewhere around this level, which is very sad because we deserve so much more. (Sales and Marketing Director, personal communication, December 18, 2015)

She adds that these issues are constantly in the meeting agendas; issues concerning renewing corporate identity, redesign of the website are constantly discussed in the board meetings. But apparently an integrated approach to design

cannot be put into action as a result of the group's limited perspective on marketing and lagging marketing skills.

In the past, during the times of our founder, marketing was not as critical as it is now. The prevalent belief was that "a good product with high quality will sell itself". That's why the marketing side always lagged behind. (Sales and Marketing Director, personal communication, December 18, 2015)

9.3.2 Planning for Design

9.3.2.1 Design planning

Planning is observed to be a strongly established organizational process in Serel Keramik. In addition to long term business planning regarding strategic initiatives, investments and projects, each department carries out detailed yearly planning for their individual activities. As for every department, design planning for the following year is finalized by the end of September.

In the company, design function is carried out together with the product development function under the Design and Application Department. Consequently design planning is conducted in an integrated manner with product development plans. It was seen that the Design and Application Department leads the design and product planning process, as opposed to being lead by the marketing department, which is the common practice in marketing dominated organizational cultures.

9.3.2.2 Design planning horizons

Design and Application Manager and Design Chief indicate that design and product development plans are generated for the following 12 to 16 months based on the objective of developing around 25 products a year. However they point that although in procedure they are responsible for making yearly plans, they actually generate planning for a horizon of nearly 2 years. Design chief details that since they are well informed about the company strategy, and continually observe trends, developments, sales indicators, they can see where they should be headed and that's why they can lead the company in design and product planning:

It does not work like they come and say to us "For the coming 2 years you will be developing such and such products". Just as our design and development manager has indicated we place 25 individual projects inside our budget. Because we constantly concentrate on design and take the pulse through Elmor, Eleks, or through our contacts with architects, contractors, we already see the occasion. [...] We already go before them, that's what I am trying to say. [...] And because we already go before them, the requests coming specifically from marketing and sales are rare, and mostly for very specific products that they feel the need, like "we don't

have a washbasin in these dimensions", and not in terms of a series of products. (Design Chief, personal communication, December 18, 2015)

The Sales and Marketing Director provides a similar picture with respect to the progression of design planning:

Actually what happens is we mostly decide on which projects to undertake and finalize for the following year, because they [design department] never stop, they continuously create. The request goes from us to them only in certain intervals, and regarding specific gaps that we detect we need to fill. (Sales and Marketing Director, personal communication, December 18, 2015)

Therefore, design and product development planning is conducted by design and application management, while approved and finalized through reviews made with marketing and sales management, as well as with the company management board. Similar to other firms of the sector, design and application manager points that the major industrial fairs, namely ISH (that takes place every 2 years in March, in Frankfurt), Cersaie (that takes place every year in September, in Bologna) and Unicera (that takes place every year in February, in İstanbul) have critical roles in guiding them in product development and design planning. As these fairs provide major observations and inputs about the direction and trends in the sector, product development activities of competitors, and Serel's position; they also initiate the process of reviewing company's product development and design strategy. Besides, these fairs provide the milestones regarding time planning of design and product development projects.

9.3.2.3 Design Policy and Standards

A careful examination of corporate communication documents, corporate website and brochures does not reveal any form of an articulated corporate design attitude or approach towards the design activities of the company. However, when interviewees were questioned further about the company's design policy and approach, it was observed that they follow certain guidelines, which can be identified as guiding notions that lead design decisions. Some of these drive from the group's organizational values and principles, such as creating products and processes that are of high quality; that are environmentally conscious in production and in use; that are generated with a consideration of efficiency both in production processes and in usage contexts; and that take into account manufacturability. Other key notions that guide design are stated as ease of use, ergonomics, functionality, aesthetics, hygiene, simplicity, reliability and longevity. The design chief explains that these criteria and corresponding standards are indicated inside departmental goals,

articulated inside design procedure documents and evaluated through surveys. Nevertheless, other than the group's corporate values and principles, design approach and standards are seen to be more tacit in nature and are not explicitly communicated to internal and external audiences.

9.3.3 Investments for design

9.3.3.1 General budget allocation

In Serel Seramik, similar to strategy formulation and planning processes, general budget planning and allocation is conducted very methodically, following strategic planning and departmental business planning cycles. Budget planning period begins right after the departmental plans are finalized in September. Budgets are estimated and planned based on the already generated business plans and submitted to the approval of company management board and then to the executive board of the Elginkan Group. The General Manager indicates that each year departmental budgets are finalized and approved by the executive board by the end of November. Additionally, there is also a more long term budget planning process based on the 5 year strategic plan. Regarding budget planning and allocation for more long term plans and investments, the company makes use of structured tools and methods such as feasibility analysis, process and project planning, financial analysis, evaluations of return on investments and risk analysis. Additionally, other than the foundation's executive board, budget allocation decisions for large investment projects have to be approved by the board of management of Elginkan Foundation.

9.3.3.2 Design budget allocation

The company shows high awareness regarding design's strategic role in increasing market performance and its more long term contributions such as strengthening brand identity, brand reputation and customer loyalty. Consequently, every year the company allocates sizeable budgets to product design and development activities. The General Manager noted that in 2015, they had allocated 10% of the company's turnover to product design and development. This includes new product development as well as redesign activities. Although budgets can vary depending on yearly market conditions, the Design and Application Manager and the Design Chief express that since 2009, the company typically spares budgets for the development of around 25 products annually. But when necessary, budgets can be revised and increased based on additional product development requirements:

Based on our strategic decisions, for example a decision about opening to Asia-Pacific, it can be necessary to increase our design budgets. [...] Additionally, during a year extra situations can come up, things that we did not put in the budget before, such as a new market, a new customer requesting a new product, a specialized product. We do not say that this is not in the budget, we cannot do it. We also do those projects. (General Manager, personal communication, December 18, 2015)

Currently, the company has a design and application department that focuses solely on product design. The company carries out all of its product design and development activities by its in-house design team. Design activities in other fields such as graphic design, web design, point of purchase design, and exhibition design are currently under the responsibility of the group's sales and marketing companies Elmor A.Ş. and Eleks A.Ş., and are included in their marketing budgets. However, the Design Chief indicates that from time to time they still carry out some of these activities to support Elmor A.Ş. and Eleks A.Ş., such as the preparation of visuals and graphics for catalogues or web. He adds that in the past most of the activities in terms of graphic design, web design, point of purchase design and the generation of product catalogues had been conducted by the in-house design team.

It is seen that design budget allocation is guided by experience and tacit knowledge that has been accumulated over the years, as the company has been carrying out in-house product design and development activities since the first years of its establishment. The routine is based on allocating a specific percentage of the turnover to product design and development activities, in the light of market conditions and company's strategic decisions that have a major impact on new product design and development. The returns of product design and development investments are tracked and evaluated in terms of the sales performance of products in domestic and international markets.

9.3.4 Design Processes

9.3.4.1 General process awareness

General process awareness in Serel Seramik was observed to be at a high level. The implementation of management systems serve as important improvement opportunities for firms to define their activities as processes and to set up systems for their regular improvement. In this respect, the company has defined, detailed and documented the processes carried out inside the organization, and works for their continual improvement ever since the acquisition of its quality management system certification (TSE EN ISO 9001) back in 1994. Additionally the General Manager

and the Design Chief point out that processes are revised and redesigned whenever felt necessary or an improvement opportunity is discerned.

9.3.4.2 Design process awareness

Similarly, design processes are clearly defined and documented by organizational design procedures and implemented according to these guides. The General Manager explains that in 2009, following major organizational changes, design processes were also extensively reviewed and restructured to better accommodate the needs of the organization and to solve problems that were identified at the time, with respect to new product design and development activities (General Manager, personal communication, December 18, 2015). Since then the organization has been following this revised design process scheme. Yet the design chief explains that they continuously make changes based on recognized issues:

There can still be small additions. For example, before, we used to start the design process after a design approval. But then we were questioned about where the request came from, upon what it is based. Since 2 or 3 years we start the process by detailing a design brief form, through which we have made the work more permanent and documented. [...] Nearly, every year we make some additions. (Design Chief, personal communication, December 18, 2015)

9.3.4.3 Design Process Management

The organization is observed to make use of structured tools throughout the management and monitoring of design processes, such as project, cost and time planning; design briefs, review meetings with necessary parties and project documentation using official forms. Design project plans are generated in great detail together with their links to model and prototype plans. Additionally, the accomplishment rates for project plans are expressed inside departmental goals and monitored within quality system standards. Design brief forms are developed by the design department in collaboration with specialists from the group's marketing and sales companies Elmor A.Ş. and Eleks A.Ş. After receiving the necessary approvals, design briefs serve as the starting points for design projects. Throughout projects, at least 3 to 4 design reviews are carried out.

9.3.4.4 Design Process Thinking, Methods and Tools

Several methods, techniques and tools are utilized during the design processes. These include design research, brainstorming, moodboards, sketching, 3D modeling using computer aided design tools, prototyping and usability tests. Giving examples from the design and development process of their awarded ceramic sanitary ware

series named *Amphora*, the design chief underlines that as the design department, they place great emphasis on the research stage:

Everybody here has an aesthetic sense, consideration and a spirit for research. Someone without that research spirit would not be able to survive in here. (Design Chief, personal communication, December 18, 2015)

He explains that the design process evolves based on teamwork, which begins with design research, brainstorming sessions, and discussions, and continues on with frequent evaluation and criticisms during sketching, concept design, design development and prototyping phases. Additionally, the team pays attention to usability, quality and ergonomic considerations; they carry out in-house tests in order to analyze product qualities such as usability, comfort, ease of use, and surface splatter.

9.3.4.5 Design evaluation processes

Both the Design Chief and the Design and Application Manager indicate that in the initial stages of concept design, design evaluations are conducted in a more informal manner inside the design team. After these internal design reviews, promising concepts are taken to the next stage and developed in more detail. When they are happy with the results, these concepts are then presented to the company's management board for more detailed and formal evaluation in terms of adherence to design briefs, sales potentials and manufacturability. The final evaluation is made inside monthly coordination meetings with the marketing and sales companies Elmor A.Ş. and Eleks A.Ş.

We evaluate the concepts internally and when we come to an agreement, we share them with the board of management. If they also agree, we share them with Elmor. Afterwards we continue on to the design application stage. During the design application stage, again evaluations are carried out in every phase. (Design and Application Manager, personal communication, December 18, 2015)

In terms of design evaluation, the primary evaluation is conducted here. After we come up with satisfactory solutions, either me or our design and application manager, and mostly him, shows them to FYK [factory management board]. There, they come up with certain assessments, there may like it, there may be anti-views. According to these assessments it is reshaped and presented again. After it is approved by FYK, we exhibit them in coordination meetings with Elmor, which we are much busier with nowadays, and Eleks, who are the ones that requested the product from us in the first place and that will actually sell it. Again, there may be different views, additions, removals... For example, if we have generated 5 products for the series, for instance a standard back to wall, we can say, in this market there is no need for standard back to wall, let's cancel it or they can also say I will sell it. This is how our designs are shaped. (Design Chief, personal communication, December 18, 2015)

These reviews are documented through design review forms (named *Design and Change of Design Review and Evaluation Form*) that specify how the design solution was evaluated with respect to the brief, together with suggestions, comments and decisions regarding how to proceed. Although evaluations are continual and thorough, the company does not utilize any systematic or analytical tool such as a scoreboard to support design evaluation. Evaluations are verbal and based on the ideas and views of major parties involved in product design and development. Decisions about aesthetics are to a large extent left to the design department; however final decisions concerning whether to take the design to the production stage are given in a collaborative manner.

9.3.4.6 Legal Processes for Design

The legal protection of design based intellectual rights is a routine element of design management processes. As soon as the decision to carry on with production is settled, the organization initiates the process for design patent applications. The design department carries out this process together with an external patent consultancy firm. However the Design Chief points out that they have complete control over the process; as the design department, they prepare everything from visuals to written forms and detailed explanations (Design Chief, personal communication, December 18, 2015). The Design Chief conducts design patent application processes, while the engineering designer of the team performs the patent application processes. The Design and Application Manager adds that they make patent registrations for all products that are taken into production, in addition to trademark registrations for their names.

9.3.5 Design organization

9.3.5.1 Design management responsibility

In Serel Seramik, since 2002, design is organized as an independent department. However before 2009, there were 2 separate departments, one for design and the other for design application, which were headed by different managers who reported directly to the general manager. While design department was solely responsible for developing product designs, design application department acted as the interface between design and production, and carried out the preparation of designs for production by developing molds and all the necessary infrastructures. Inside the current organizational structure, the design and design application functions are united under the Design and Application Department, which is led by a Design

and Application Manager, who also reports directly to the General Manager. His educational background is in ceramics and he has long years of experience in ceramic sanitary ware design and production, having started his professional life in another major producer of ceramic sanitary ware. Additionally, reporting directly to the Design and Application Manager, there is a Design Chief with an educational background in sculpture. Similarly, he has long years of experience in ceramic sanitary ware industry, having begun his career 20 years ago as a designer in Serel Seramik. Besides their administrative responsibilities, they also work as designers, and take part in in-house design activities.

Project and organizational level design management responsibilities are carried out by the Design and Application Manager in close cooperation with the Design Chief. Design management responsibilities at the strategic level, such as the shaping of corporate design vision and strategies, are observed to be performed in a collaborative approach together with the General Manager of Serel Seramik, and general managers of marketing and sales companies Elmor and Eleks. Yet the views and suggestions of Design and Application Manager and Design Chief are highly regarded and there seems to be an elevated attentiveness to receiving opinions of different parties, idea sharing and teamwork for all decisions from strategic to the functional.

9.3.5.2 Design skills

Altogether, the Design and Application Department consists of 20 employees. Besides the department manager, and the design chief, there are 2 industrial designers, 1 engineering designer, 1 design technician and 1 office staff. The remaining 13 employees include CNC operators, modellers, casting and molded production specialists that carry out prototyping, molding and all the other necessary activities to organize the manufacturing basis for product designs. Nevertheless, in company's corporate communications, as well as inside the organization, when they refer to the Serel Design Team, they imply 5 designers, including the Design and Application Manager and the Design Chief, which have different backgrounds ranging from ceramics, sculpture, and industrial design to mechanical engineering.

Since its establishment, except for the initial product series generated in the first few years, all product design and development activities have been conducted solely by the use of in-house capabilities. Due to strongly embraced corporate values and principles of the Elginkan Group that highlight independence, development of local skills and capabilities, use of local resources, and engineering excellence, the

company had given extensive care to the acquisition and development of indigenous capabilities, including product design and development capabilities all throughout its history. This group wide stance towards a focus on the use of in-house capabilities still continues. Although key respondents are certainly aware of the use of external design expertise in order to bring different benefits such as the flow of new ideas, marketing potential and bringing in outside perspectives, the company does not consider the use of external designers at least for the recent future. Sales and Marketing Manager highlights the advantages of using in-house design such as: their proximity, “having a highly effective communication”, being in direct contact with production, having the opportunity to carry out real teamwork, and the opportunity to organize frequent design and product development meetings. Additionally she discloses their organization wide approach towards the use of indigenous resources:

We like to use our own resources. This does not mean it can never happen. I'm sure we would have done it up to now if we really felt it was necessary. Looking at the results we have attained, our awards, our success, our position in the middle segment, our market share, measuring all this, we see that we are in the right track and we don't feel the need at this point. But can't it be done? It can. It is a choice. For instance I greatly appreciate the works done with Defne Koz, what else, for example Ross Lovegrove has a different place. These can happen. I hope one day it happens with a really wonderful project. Still, even though I sometimes say to myself that maybe I am being biased in evaluating the results because it is the output of our designers, still we really are very happy with our designs. (Sales and Marketing Manager, personal communication, December 18, 2015)

When the General Manager was inquired about the company's approach to the utilization of external design expertise he revealed a similar standpoint and expressed that he is quite content with their in-house design capabilities:

I don't feel the need. Why would I? I can work with external designers that are famous names like a marketing activity, but I don't feel the need. Our internal resources are satisfactory; all of our in-house designers have potential and if you look at their world rankings - these designers have rankings that are kind of like an official thing, they are announced - our designers are among the leading in these rankings, as the Serel Design Team. (General Manager, personal communication, December 18, 2015)

Pointing to critical drawbacks with respect to the use of external design expertise, he also adds that he does not believe that the advantages gained through this choice are worth the while, considering the high amounts of investments that are necessary in collaborations made with renowned designers.

I don't believe it brings much. For example Vitra was working with Ross Lovegrove, a worldwide designer. All right, the products can be interesting, they can win design awards, they can bring sensation, but he designs products that are extremely difficult to manufacture.

VitrA had great hardship with that. Additionally, you pay incredible amounts of money to these people. I just mentioned that we spared 2 million liras for new products last year. You would have to give 2 million to Ross Lovegrove just for one series, and that would not contribute much. What I mean is, it will not move us way up. Why wouldn't we have Ross Lovegroves coming up among us? (General Manager, personal communication, December 18, 2015)

9.3.5.3 Organizing for design

As pointed out by all interviewees, design projects are conducted in a highly collaborative manner consulting major parties such as production, R&D, marketing, and sales departments all throughout the process. Their participation and contributions are ensured through structured design review meetings and documentations that necessitate the review and approval by the required parties in each phase of the process in order to proceed with the projects. Besides these formal arrangements, the organization has managed to create an environment that values teamwork, communication and collaboration which is revealed in the responses and approaches of the interviewees as well as the organizational routines.

9.3.6 Research for design

9.3.6.1 Design research programs and resources

Several research activities are carried out inside the organization to feed design processes, and to guide the shaping of design strategy, such as market research, competitive analysis, trend & lifestyle research, and design research in the context of specific design projects. Market research and competitive analysis activities are conducted regularly by Serel Seramik as well as the group's marketing and sales companies Elmor and Eleks AŞ. Sales and Marketing Manager indicates that from time to time, market & trend research services and reports are also acquired from external market research consultancies. However it is seen that these information and reports are not shared directly with the design department. Nevertheless, the information distilled from these market based research activities are communicated to the Design and Application Manager and Design Chief through regular coordination meetings, in order to inform and guide the overall design and product development activities of the company. On the other hand, the Design Chief points that it would be really beneficial and guiding if these reports were directly shared with the design department.

The design department carries out design research activities, both to guide its overall vision and planning, and to provide input to specific design projects. In the

context of their award winning product series named *Amphora*, the design chief explains that the research phase involved in-depth explorations on amphorae¹⁴. The research ranged from reading books on the historical evolution of amphorae to interviews with an expert. Besides research that is intended for specific projects, the design department carries out research activities regarding trends, products of competitors, developments in the sector, as well as developments in other design fields and industries. Although attention is given to research, these activities are not structured and regularized through a research program or plan. Instead, they are conducted based on the needs of projects and the awareness of designers in terms of the importance of research activities. With regards to user research, the company does not carry out any research activities that focus on identifying user behavior, problems, motivations or needs. However, the design department gets regular reports on customer complaints as well as customer satisfaction.

9.3.6.2 Information and idea networks

In terms of information and idea networks, it was seen that the company has a number of resources feeding into design. The major activity in this context is ensuring the regular attendance of designers to industrial fairs in ceramic sanitary ware, as well as to design fairs and events directed at a larger audience, such as Milano Design Week, The London Design Festival or Istanbul Design Biennial. Design Chief indicates that after these events they generate detailed reports on trends and developments, and share these reports with senior managers (Design Chief, personal communication, December 18, 2015). The company also has regular subscriptions to design journals and sectoral magazines; however these are very limited in number and scope. The Design Chief mentions that they also follow online design resources, news and platforms, and share this information with each other frequently. The company does not have established networks or collaborations with universities in the context of design research activities or projects.

The Sales and Marketing Manager indicates that the company has networks that are established with professionals in the construction sector, such as contractors and architects (Sales and Marketing Manager, personal communication, December 18, 2015). In the past, they have organized meetings with these professionals, in major cities around Turkey, in order to create a platform for sharing knowledge and ideas

¹⁴ Ancient containers used in the transportation and storage of both liquid and dry products such as wine and olives

in terms of architecture. In-house designers were also invited to these meetings and organizations. She adds that designers also attend to events organized by the Turkish Ceramics Group, which is a group established by the Undersecretariat of the Ministry of Economy with the support of the Central Anatolian Exporters Union and the Turkish Ceramics Federation, in order to promote Turkish ceramics around the world.

While the company makes use of various resources in terms of research as well as information and idea networks, they are not administered and followed in a programmed and structured manner. Taken as a whole, these issues seem to receive less focus compared to other design management skills and capabilities.

9.3.7 Training and development for design

9.3.7.1 General training and development

As have been explained in detail in its corporate profile, companies under the Elginkan Group are owned and governed by the Elginkan Foundation. The major aim of the founder in establishing the foundation is stated as to "contribute to education and cultural development of the Turkish people through income to be obtained from companies" (Elginkan Vakfı, n.d., Social Responsibility). Consequently, a very large percentage of the profits generated by the group companies are donated to social causes in two major areas: education and cultural development. Besides its investments in science, culture and technology, the foundation carries out extensive activities regarding training and education such as: establishing and managing vocational and technical training schools to contribute to the development of qualified workforce; building and donating schools to the Ministry of National Education to support education at all levels throughout the country; and to organize scholarship programs to assist undergraduate and graduate level education.

Having such a high level of awareness and involvement in education and training, the continuity of training and development activities for employees at all levels is receiving eminent attention in Serel Seramik. Mentioning the foundation's sensitivity regarding education, all interviewees strongly underlined the importance given to continual training and development inside the organization. The General Manager expressed that they are constantly planning, carrying out and monitoring both internal and external training and development activities for staff at all levels. These range from vocational trainings to seminars and trainings regarding skill and personal development. Similarly, the Design and Application Manager and Design

Chief pointed to the reputation of trainings provided by the Elginkan Foundation itself, and explained that training and development activities are planned and monitored inside the company as an indispensable component of departmental goals and performance measures. Besides, they indicated that they are receiving monthly lists regarding group wide training programs and can specify the ones that they would like to attend. Likewise, the Sales and Marketing Manager noted:

I must say that this issue has been developed significantly internally. We are regularly asked to indicate the trainings that we would like to receive, and besides, the organization identifies specific areas for training and development. Additionally if you have any extra training and education requests, the company provides the necessary planning and resources. (Sales and Marketing Manager, personal communication, December 18, 2015)

Adding that a technical school that belongs to the Elginkan Foundation is located right next to the company, she remarked that the school's proximity is quite advantageous as they organize many training programs there by utilizing its space and educators, as well as inviting external educators and trainers.

9.3.7.2 Nurturing skills and creativity of design related personnel

In terms of specialized training and development programs targeting designers, the design and application manager as well as the design chief explicate that these trainings are not planned yearly like the general training and development programs, but are conducted frequently, based on identified needs. The design chief describes:

For example we receive an email from ETMK saying that there is a training program in a certain location. We see that it is relevant to me and ... [a designer from the team] and we are missing information or skills related to that subject. Then we talk to management and explain the issue, and we attend this program, for example 2 people for 2 days in Istanbul. (Design Chief, personal communication, December 18, 2015)

Similarly, the Design and Application Manager adds that currently they have to develop new plastic dampers, and in order to learn more about plastic materials, they have recently sent someone from the team to a one week training program on plastics. For software trainings, again they organize the necessary trainings when a need is identified. They remark that there can also be requests coming directly from the design staff; likewise these requests are always supported and organized. Additionally, in order to nurture their creativity and keep up to date with trends and developments in various design areas, as the design team they pay attention to attendance to industrial fairs and major design events and exhibitions.

9.3.8 Design integration

9.3.8.1 Coordination and communication with other business functions, strategies and processes

As have been indicated, in Serel Seramik the manager of Design and Application Department has equal standing with other departmental managers such as that of production, sales and marketing. Besides being a part of the company's management board, he is also a major partaker in planning and coordination meetings that are held with the group's marketing and sales companies Elmor and Eleks AŞ. Additionally, as mentioned before, company management board meets 3 times a week in the mornings in order to discuss issues ranging from more long-term and mid-term matters to daily activities and concerns. These arrangements to ensure very frequent contacts between departmental managers, as well as design manager's involvement at a high level in the management hierarchy is observed to result in a good level of coordination and communication between design and other business functions, both in terms of the coordination of departmental strategies and in terms of coordination and communication throughout design projects and processes.

Design chief and design and application manager indicate that in their daily routines, they are in closest contact with production and quality departments; they consult them frequently throughout product design and development projects. But in general, they indicate that they also have close contacts with other functional departments and exemplify this by stating that they are even in touch with a seemingly more unrelated department such as shipping, because they have to discuss packaging options for the safe transportation of products. In order to explain the level of coordination between design and other departments, the General Manager details how the projects and activities of R&D are integrated with those of Design and Application Department:

For example let's say we have a new product design, which has very thin edges. This is really hard to produce in ceramics, so in order to take that into production, R&D works on developing a new clay mixture that is exclusive to that product. That's how it supports design.
(General Manager, personal communication, December 18, 2015)

Additionally, coordination and communication between design and other departments is also ensured at the level of specific business activities, by organizational procedures that clarify the role of staff from different departments, throughout product design and development processes.

9.3.8.2 Role and place of design

It is observed that in Serel Seramik, the primary role for design is being the leader of the new product design and development process. Design is seen to drive the total process from the initial idea to its production ramp up. The second major role for design is reducing production costs and increasing the efficiency of manufacturing processes. This is expected since the design function is integrated with the design application stage, which consists of the design and development of all the necessary parts and infrastructures, in order to prepare the product designs for manufacturing. Design and Application Manager explains in detail that in the design application phase they place great attention to designing and developing the production infrastructure for products with a consideration for ease of manufacture. Additionally, he points that knowing production and being responsible from the design application stage gives them notable advantage in terms of the realization of design projects:

We have an advantage. You know that production people and designers can't get along, because production wants product designs that go well with their existing capabilities. But we don't have such a problem. We prepare the infrastructure for production. We are the ones that show them that it is producible. That's our advantage. [...] Sometimes when we show the designs, they think that it cannot be produced. But we tell them not to worry and that we will make it producible. (Design and Application Manager, personal communication, December 18, 2015)

Other than these key roles, design has significant roles in other business processes, such as brand development, quality management, development of products targeting environmental concerns and sustainability objectives like energy efficiency and the reduction of water and material use. In this context, the General Manager explains that together with ECA they have a joint program called Ekolojik that specifically focuses on the development of products that reduce environmental impacts. However inside these processes, design mostly has supportive roles, where the processes are carried out under the leadership of other business departments and functions. Design is also used to some extent in the design of corporate communications such as catalogues, websites, and product manuals. In brief, design is observed to have extensive roles throughout the organization. However, other than its major roles in new product development and ease of manufacture, design does not seem to be integrated to other business activities (such as brand development or corporate communications) in the earliest stages of ideation.

9.3.8.3 Breadth of design

Design activities are carried out in the areas of industrial design, graphic design, exhibition design, and the design of retail environments. All industrial design activities are carried out in house by Serel Seramik, whereas design activities in other fields are under the responsibility of marketing and sales companies Elmor and Eleks AŞ, and performed through a combination of in-house and outsourced design capabilities. Design Chief indicates that Elmor A.Ş. has a small in house team of architects and interior designers, focusing on the design of retail environments and exhibition design (Design Chief, personal communication, December 18, 2015). For the design of corporate communications and catalogues, Elmor and Eleks A.Ş. have also worked with external design consultancies from time to time. However based on a review of the outputs ranging from websites and catalogues to exhibition and retail environments, design capabilities in fields other than industrial design are observed to be significantly weak. When this observation was shared with the interviewees, all of them showed agreement and indicated several reasons. The most significant one was the management of design activities in different fields by several companies under the Elginkan Group. They added that this system also resulted in problems regarding coherence and coordination between different areas of design. Design and Application Manager indicated that they lack a uniting vision due to not being managed by a single authority:

These [design activities in other areas] have to be carried out through a single hand. We have so many companies. They must be managed solely by Elmor A.Ş. We express this continuously; but it could not be actualized yet. [...] There should be only one approach, all of us should move under a single vision; we lack this. (Design and Application Manager, personal communication, December 18, 2015)

Other reasons pointed out by the interviewees were the underdeveloped marketing capabilities of the group companies; and being bounded by the group companies in terms of having to follow the same format in the design of corporate communication mediums and retail environments.

9.3.8.4 Coherence and coordination between different areas of design

Sales and Marketing Manager noted that there is attention to ensuring consistency and coordination between different design activities through regular coordination meetings carried out between different companies and joint reviews and evaluations regarding design outcomes. Yet she agrees that there are still some problems with regards to the results. Additionally, she explained that as the companies of the Elginkan Group, in the past they have tried working with external professionals in

the design of marketing communication materials, such as websites and catalogues. However indicating that the results are not good enough, she continued:

Actually giving a brief is really important. They act according to the brief you have given. Maybe we are not very successful in briefing, maybe whatever we do we cannot communicate ourselves effectively, and maybe we don't do it as much as necessary; there are not many options. There is some from all of these. (Sales and Marketing Manager, personal communication, December 18, 2015)

However, the Design Chief and the Design and Application Manager indicate that the group is slowly beginning to realize the drawbacks caused by the lack of a unified approach in the management of design activities in different areas. They believe that in time they will take the necessary steps towards the generation of a more cohesive approach.

9.3.9 Culture and Climate for Design

9.3.9.1 Design awareness & understanding of senior management

In Serel Seramik, top management is seen to reflect a good level of design awareness and understanding. As have been discussed previously in the section focusing on design's place in strategy (Section 9.3.1), especially since 2009, design has been integrated more strongly inside company's business strategy. This development was partly necessitated by a change in market focus from the low and economic income segments to middle and upper middle segments, but it was also initiated by the general manager's awareness and understanding regarding the strategic importance of design. According to him design is one of the most significant functions inside the company:

I should say that our product is visual. In my opinion, design is one of the most important departments in this organization. Whatever you do, ceramics is ceramics, there are no major differences between one or the other quality wise or technically. The only way you can differentiate is good design, the product to have an appeal. That's why design is very important. (General Manager, personal communication, December 18, 2015)

He continued explaining that together with his appointment in 2009, he has positioned design as the foremost tool inside Serel's brand development, repositioning and market growth objectives and indicated that design has been the major factor in Serel's success in repositioning the brand and increasing market share ever since then. He added that an awareness of the strategic importance of design and design's inclusion in company strategy is highly dependent on the vision of key individuals such as the design manager and the general manager of the company.

Other key informants similarly revealed a high level of awareness and understanding about the importance of design for the company:

They are our darlings. They are the think tank for our work and we greatly value their evaluations, we greatly cherish the things they want to do. (Sales and Marketing Manager, personal communication, December 18, 2015)

Looking at the historical evolution of design capabilities, it is observed that design had always been regarded as a significant capability. From the very early years of Serel's establishment, company's conscious and rapid focus on the acquisition and development of in-house design capabilities are important indications regarding Serel Seramik's stance towards design. Additionally, indicating that he started working in the company's design department in 1996, the Design Chief reveals that design had always been greatly valued and they always felt like they had a special place inside the organization:

Design was always at a top level, they always held the design unit in high regard; the company's focus was always on it. [...] We always had a different status from the other departments. (Design Chief, personal communication, December 18, 2015)

Although this is the case, design began to be utilized in a more strategic approach and started to receive broadened roles for the organization particularly after 2009, together with the organizational transformations and the renewal of company's business strategy.

Moreover, despite a good level of design awareness, interest and commitment, this seems to be limited mostly to design's role in the context of manufactured products. Although there exists some design awareness and understanding regarding design's contributions in other contexts such as corporate communications, customer experience, or services, design is not embraced as strongly in these areas as it is in the context of products. This is also related to company's manufacturing dominated history and culture and its long held focus on engineering and technology based capabilities at the expense of marketing capabilities.

9.3.9.2 Design commitment of senior management

The good level of design awareness and understanding is also observed to result in a high level of commitment with regards to design activities and initiatives, but again this commitment is limited to industrial design activities. Sales and Marketing Director reveals that although the development of design capabilities in other areas are discussed in the board meetings, the company does not turn these discussions into a plan towards action, mostly due to a lagging perspective concerning marketing

and being bound to the group companies in many of these activities (Sales and Marketing Director, personal communication, December 18, 2015).

9.3.9.3 Design attitudes of employees

Regarding design attitudes of employees, all interviewees believe that staff from all levels are highly aware of design's importance and reflect positive attitudes towards design activities and initiatives being carried out inside the organization. The Design and Application Manager states: "They know that it is valuable" (Design and Application Manager, Personal Interview, 18 December 2015). When questioned about design attitudes and support of company staff, the General Manager points out that design is being taken up more and more strongly by the employees as the company gets more recognized in terms of good design and by earning awards in important design competitions:

Here we have a feeling of ownership. Especially as our products earn awards, as they get more recognized, as they appear in advertisements, they feel happy that they are the ones producing these products. (General Manager, personal communication, December 18, 2015)

9.3.9.4 Environment for creativity

The company is seen to undertake efforts towards the generation of a medium that supports creativity; it tries to support the generation of new ideas and initiatives concerning the improvement of any part of the organization and business processes. One of these organizational routines is an award system, which is directed at encouraging ideas and projects that generate important outcomes for the company. Since the last 5 years, the company has been carrying out an internal award program named *Bir Fikrim Var* (I have an idea), where new ideas are evaluated and recognized through rewards. The Design Chief indicates that besides this program, awards are also granted to projects that had been realized and proved effective:

For example, someone undertakes a project, such as R&D, it develops a new glaze coating and it becomes really useful for us in terms of performance or added value. Then management appraises this issue and says let's reward it" (Design Chief, personal communication, December 18, 2015).

Additionally, the General Manager explains about a productivity team he has formed, which is composed of the chiefs of design, production and planning departments. The team is responsible for being in close contact with all employees throughout the company and receiving their ideas and suggestions with regards to product, process and system improvements.

In terms of physical environments, the offices are right next to the production plant, in direct contact with manufacturing settings. They are neat and orderly but as can be expected, far from reflecting an inspiring work atmosphere.

9.4 Design Management Audit Framework Assessment Results

Based on the findings that have been detailed in the previous sections, design management capabilities in Serel Seramik were assessed according to the assessment scale developed for the *Design Management Audit Framework* (chapter 4.9, chapter 6.6). The tool is based on capability maturity principle and evaluates each item in the assessment framework according to 4 levels, with Level 4 indicating the highest level of competence. Table 9.2 presents ratings for Serel Seramik, for each issue taken into consideration throughout the assessment process.

Table 9.2 : Assessment results for Serel Seramik.

	Level 1	Level 2	Level 3	Level 4
Design in Strategy				
Strategy Formulation Process				X
Strategic Planning Process				X
Strategy and Planning Communication				X
Design in Strategy			X	
Design's Input to Strategy Formulation				X
Planning for Design				
Design Planning				X
Design Planning Horizons			X	
Design Policy and Standards		X		
Investments for Design				
General Budget Allocation				X
Design Budget Allocation				X
Design Processes				
General Process Awareness				X
Design Process Awareness				X
Design Process Management				X
Design Process Thinking, Methods & Tools			X	
Legal Processes for Design				X
Design Evaluation Processes			X	
Design Organization (People and Structures)				
Design Management Responsibility			X	
Design Skills			X	
Organizing for Design			X	

Table 9.2 (continued) : Assessment results for Serel Seramik.

	Level 1	Level 2	Level 3	Level 4
Research for Design (DC and KBV)				
Design Research Programs and Resources		X		
Information and Idea Networks		X		
Training and Development for Design				
General Training and Development				X
Nurturing Skills and Creativity of Design Personnel			X	
Design Integration				
Coordination and Communication with Other Business Functions, Strategies and Processes			X	
Role and Place of Design			X	
Breadth of Design			X	
Coherence and Coordination Between Different Areas of Design		X		
Culture and Climate for Design				
Design Awareness & Understanding			X	
Design Commitment of Senior Management			X	
Design Attitudes of Employees			X	
Environment for Creativity			X	

9.5 Summary, Major Findings and Conclusions with Respect to Design Management Capabilities

Throughout the case study, design management approach, processes and capabilities of Serel Seramik were analyzed and detailed with respect to the capability categories under the Design Management Audit Framework. These capabilities were then evaluated according to the assessment scale developed and the results were presented in Table 9.2.

As the table indicates, Serel Seramik revealed the highest level of design management capabilities in the categories of *Design in Strategy*, *Investments for Design*, *Design Processes*, and *Training and Development for Design*. The majority of the items under these categories were assessed to be at Level 4 and the remaining were evaluated at Level 3. Whereas, the majority of design management capabilities in the categories of *Design Organization*, *Culture and Climate for Design*, and *Planning for Design* were assessed to be at Level 3. The organization revealed lower level capabilities in the category of *Design Integration*, being assessed at Level 3 in some items and Level 2 in others. The weakest capabilities were noticed to be in the category of *Research for Design*, which were assessed to be at Level 2.

Inside the category *Design in Strategy*, the company is assessed to be in Level 4 in terms of organizational strategy formulation, strategic planning and strategy communication capabilities. These processes were observed to be highly structured and guided by explicit procedures and routines that follow the corporate codes and rules of conduct established by the Elginkan Foundation. Coming to design in strategy, it was seen that since 2008, together with major organizational transformations and changes in market strategy, the company has considerably increased its focus on design. Design has since been integrated more firmly into the company's business strategy and has been placed as the principal tool for brand repositioning, market growth and brand development efforts. Yet the focus on design is still largely limited to industrial design, and lacks a more comprehensive approach. Design's input to strategy formulation (Level 4) and business planning processes of the company is ensured, since the design and application manager is part of the company's management board and reports directly to the general manager of the company. It's seen that design strategies are given final shape in a collaborative approach inside management board meetings, with suggestions and inputs coming from different parties, thus increasing design's coordination and communication with other major business functions.

In terms of capabilities in the category of *Investments for Design*, the company reveals advanced capabilities for general budget allocation (Level 4), as well as design budget allocation (Level 4). Financial resources are allocated to all business functions and activities based on structured procedures for financial planning, evaluation and risk assessment. Every year the company allocates a considerable percentage of its turnover to product design and development efforts. With respect to capabilities under the category of *Design Processes*, the company similarly reveals a high degree of general process awareness (Level 4) and design process awareness (Level 4); there are explanations, process maps, and evaluation and approval routines for all processes that are carried out inside the company. They are observed to be followed attentively together with a focus on their improvement. Design project management capabilities are also assessed to be at Level 4 because it was observed that the company utilizes structured tools and routines all throughout the management and monitoring of design projects, including planning, briefing, regular design reviews involving various functional departments, and cost monitoring. With respect to legal processes for design (Level 4), it is seen that the protection of design based intellectual property rights is also an established part of design management routines. Although there are different methods and tools

utilized in terms of design process thinking, methods and tools (Level 3), they have not been structured and routinized under an established methodology to inform design processes, the evaluation of design outcomes and decision-making with respect to design. While design evaluation processes (Level 3) are carried out in detail and based on planned routines, they are seen to be limited to pre-launch evaluations.

Regarding capabilities under the category of *Training and Development for Design*, the company is observed to be highly competent due to prevalent organizational culture and corporate traditions that place notable attention to continuous education and professional development. General training and development capabilities were assessed to be at Level 4, with continuous training and development programs in place for all employees. With regards to nurturing skills and creativity of design related personnel (Level 3), the company is seen to plan and conduct learning and development programs that are specifically targeted for its design staff. However these are carried out as needed and not as attentively followed as those directed at general training and development.

In terms of *Design Organization* (Level 3), the company has considerable experience and skills in organizing design activities in the context of in-house capabilities. Capabilities are developed in terms of managing in-house product design and development projects, in-house organization for design activities and integration of necessary information and parties throughout design and development processes. However, the company does not reveal comparable skills in terms of the selection, organization and management of external design expertise. With respect to capabilities under the category of *Planning for Design*, it is seen that there is detailed design planning (Level 4) based on the overall business strategy, which is guided by an in-depth analysis of products, customers, markets and competitors. Design planning horizons (Level 3) reveal that design is part of all short and medium term plans, but this lacks a focus on design disciplines other than industrial design and a consideration for design's possible future roles for achieving different business objectives. With respect to design policy and standards (Level 2), it is seen that there are basic notions that guide design decisions, which are sometimes articulated inside departmental documents, but they are not observed to be communicated to and internalized by relevant staff.

Capability items under the category of *Culture and Climate for Design* were assessed at Level 3, indicating a fair level of awareness, commitment and support with respect to design, both in terms of senior management and in terms of the

majority of company employees. The company is also seen to focus on the development of an environment for creativity, by establishing certain systems to encourage communication, initiative and experimentation.

Capabilities under the category of *Design Integration* were observed to be weaker (Level 2) especially in the items: breadth of design and coherence and coordination between different areas of design. The organization is competent in industrial design and product development capabilities, which are at the center of all NPD activities, and integrated effectively with related business processes. Yet although the company also undertakes design activities in other areas, capabilities with regard to these are noticeably weak. Design activities in other fields, such as design of retail and exhibition spaces, design of marketing communication materials, design of web sites do not receive much attention; they are generally not carried out on a regular basis; and the company does not reveal a concerted focus on establishing their coherence and coordination.

Regarding capabilities in the category of *Research for Design*, the company is observed to be markedly weak, being assessed at Level 2 in both items under this category. Research activities that feed into design are limited. Part of these consist of some market research and trend research activities, which are carried out by the marketing departments of other companies inside the Elginkan Group, namely Elmor A.Ş. and Eleks A.Ş. The research reports are not usually shared with the design department of the company, but are partly communicated to designers inside meetings and design briefs. There are also research activities that are carried out by the in-house design department, but again these are greatly limited and carried out without any regularity or structure. Likewise, information and idea networks for design are confined to following major industrial fairs, a few design fairs and events and a small number of journals and magazines.

10. DISCUSSIONS

In the previous chapters, analysis and findings regarding 3 major case studies that were carried out in the empirical part of the thesis were presented. The analysis of individual case studies were structured and presented with emphasis placed largely on understanding and assessing each company's design management capabilities, according to the *Design Management Audit Framework* that was developed in the theoretical phase of the thesis. As a result, their design management capabilities were outlined to provide an answer to the first research question of the empirical part of the research, which was identified as:

What is the scope and nature of design management capabilities in firms from the Turkish ceramic sanitary ware industry, specifically including design management capabilities at the strategic level?

This chapter aims to provide a secondary level of analysis and to discuss: (1) the development of design management skills, particularly with respect to capabilities at the strategic level; (2) to explore how design and strategy are linked through existing design management capabilities in the current situation; and lastly (3) to examine key enablers and barriers influencing the effective integration of design with company strategies.

This secondary level of analysis aims to provide answers to the 2nd, 3rd and 4th research questions, which were stated as:

How are design and strategy linked through design management capabilities, in firms from the Turkish ceramic sanitary ware industry?

Are there specific enablers for the development of strategic design management capabilities?

Are there specific barriers for the development of strategic design management capabilities?

The findings are discussed initially in the context of individual case studies and later through a discussion and integration based on cross-case comparisons. Finally, the *Design Management Audit Framework* as a tool to review design management capabilities inside organizations is discussed, in the light of the findings and

experience gathered by the author of this thesis throughout the conduction of case studies.

10.1 Discussion of Case Study 1

10.1.1 The evolution from project level design management towards strategic level design management

The historical progression of design and design management capabilities in Eczacıbaşı Vitra were detailed inside the case study report presented in Chapter 7. The major observation from this analysis is that initially, there were 2 main triggers that started the development of organizational design management capabilities inside the company:

- One was the increasing competition in the domestic market. This was due to 2 major changes in the industrial landscape: the opening of the previously protected domestic market to foreign competition as a result of the removal of trade barriers following a major change in national development strategies; in addition to new ceramic sanitary ware manufacturers being established in the sector.
- The other major trigger was company's increasing focus on export markets (as a result of the change in national industrialization strategy from import substitution based development to export-led growth policy) which necessitated the company to develop original product ranges that could compete in global markets.

These developments initiated a period of gradual progress in the organization's in-house design capabilities, as well as in the company's capabilities regarding the utilization and management of external design expertise. As a result, the company initially began developing design management skills in the context of:

- managing design projects,
- selection of external design professionals,
- organizing for design,
- coordinating in-house product design and development activities with external design expertise;
- setting up design processes,
- and establishing their coordination with major business functions.

Therefore, external circumstances served as main triggers in the acquisition and development of design and design management capabilities. And as expected, design management capabilities were initially developed at the operational and tactical levels of design project management and design organization management.

Starting with the 1980s and continuing with the 1990s, design and design management capabilities developed slowly but progressively, and together with the development of capabilities in other significant spheres such as production, quality and marketing. Design increasingly began to be viewed as a major tool in increasing competitiveness, and throughout the 1990s, it was integrated as an indispensable element of company's NPD activities. Yet in this period, the outlook on design was still totally restricted to a focus on products; design's role was solely limited to product differentiation and enhancing the value of products by adding extra features and qualities. Likewise, although having developed significantly over the years, it is observed that design management capabilities in this period were still confined to operational and tactical level responsibilities – that is capabilities with respect to the management of individual design projects; the selection, organization and management of in-house and external design skills; and the coordination of design with product development, production and marketing processes.

However, beginning with the mid 2000s, the company started developing a more strategic stance towards design and entered a period of development in its strategic level design management skills. However, this time the triggers were observed to be largely internal and strongly linked to a long-term plan towards company's strategic renewal and brand development activities.

Up until then, company's branding strategy was directed at the domestic market, while the company had largely been following OEM and ODM strategies in export markets, thus having a limited presence in the global market with its own brand. But this new stage in the company's development was initiated with the redefinition of company's long-term vision as "to establish Vitro as a global brand" and a new brand development strategy targeting the global market. These major changes in company's business strategy started significant transformations along several dimensions such as its organizational structure, resources and capabilities, and its business growth mindset. More importantly, in the company's new brand strategy, design was positioned as a core value of the brand; design began to be integrated more firmly into company strategy; it was incorporated into corporate, brand and marketing communications, and included in advertising and P&R activities. Accordingly, company's perspective on design management expanded from its

limited focus on product differentiation to a holistic and integrated approach towards the utilization of design in the wider context of overall brand repositioning, brand development and innovation efforts of the company. Together with an increase in the intensity and range of design activities, investments for design were increased and significant design projects were initiated. In this respect design was utilized as a major tool in Vitra's strategic renewal and brand transformation process.

One of the most significant responsibilities under strategic level design management is listed as defining design's different roles for the organization and how it can contribute to the achievement of the organization's goals and objectives (Blaich & Blaich, 1993; Borja de Mozota, 2003b; Topalian, 1990). In alignment with this characterization, in this period, the role of design for the company was redefined. It expanded from its central role in product differentiation to wide ranging roles for design in: the renewal of brand identity and image, brand development, increasing brand recognition, the creation of deeper consumer connections, generation of design driven innovations, and fostering of a design-oriented organizational culture. Chung (1998) indicates that at the strategic level, design management is concerned with the alignment and "coordination of design activities with corporate objectives, overall management strategy and business content" (p. 69). Likewise, in this period the company advanced its skills in the alignment and coordination of design with the overall company strategy, initially by establishing an executive design board comprising of top management and getting them discuss major design initiatives and how design can contribute to the company's long term objectives in different ways (Topaloglu & Er, 2011). Therefore, at the start, instead of assigning an executive design management responsibility at the strategic level, the company chose to carry out strategic level design management responsibilities through collective board responsibility for design. Additionally, starting with this period, design management capabilities advanced with respect to strategic level skills specifically in the areas of:

- inclusion of design in strategy;
- definition of design approach and standards;
- increasing coordination of design with other business functions and processes;
- establishing coherence between design activities in different fields;
- expanding the roles of design inside the organization;

- achieving a higher level of design integration;
- and cultivation of a corporate culture that supports design.

10.1.2 Linking design with strategy

Looking at the current picture, Eczacıbaşı Building Products presently possesses significant design management capabilities, including design management capabilities at the strategic level. Company's design management capabilities are assessed to be at Level 4 in 24 out of 31 capability items inside the *Design Management Audit Framework*, with the remaining 7 being assessed at Level 3 (chapter 7.4). The details about design management approach, practices and capabilities inside the organization are analyzed and presented in Chapter 7, while our focus here is specifically on how design and strategy are linked inside the organization through these capabilities.

It is seen that presently the organization utilizes 3 major means to link its design efforts with company strategies. These are initially listed below and later discussed individually:

1. Existence of a formal responsibility for design management at the senior level directly under the general manager
 2. Design manager being a major partaker inside strategy formulation and business planning processes
 3. An independent design department in equal status with other major functional departments
1. Existence of a formal responsibility for design management at the senior level directly under the general manager

Since 2014, the company has assigned a formal responsibility for design at the level of senior management. Currently, design department is an independent department that is managed by a design director, who is in equal standing with the directors of other functional departments such as marketing, sales, innovation and finance. Equally importantly, he has formal responsibility for the management of design at the strategic level, which was previously dispersed among different individuals inside the organization. This is observed to function as an important element in linking company's design efforts with company strategies as it makes sure that a senior manager is assigned clearly with the overall responsibility of ensuring that design function contributes to the achievement of corporate goals. The significance

of giving a senior manager executive responsibility for design is strongly underlined by Topalian (1990) among the most essential features of achieving a corporate approach to design. This structure guarantees that a manager with senior level managerial power has the responsibility for design strategy formulation, maintaining that design strategy contributes to corporate strategies in different spheres, evaluating and reporting on issues central to the establishment of design management systems and investments, and supporting the improvement of systems and routines for effective management of design.

2. Design director being a major partaker inside strategy formulation and business planning processes

Again since the last 2 years, together with the assignment of executive responsibility for design at the senior level, design director has been positioned as an integral partaker in strategy formulation and strategic planning meetings and routines. Additionally, as noted before, he is in equal stature with the managers of other major functional departments. This system ensures that design director has direct influence over the formulation of business strategies and plans; has the chance to convey information, suggestions and perspectives regarding design directly to the senior management team; and interacts with all parties involved in shaping the overall strategic course of the organization. Additionally, it makes sure that design is one of the core elements that are taken into consideration during strategy formulation, business planning and investment planning processes inside the organization. This finding is in line with design management literature, which increasingly points out that design-competent firms understand how design affects different aspects of the organization, so they include it in corporate decision making (Jerrard & Hands, 2008). Similarly, Lockwood (2010) lists “bringing design and design thinking into organizations in support of the development of corporate strategy” among ten areas of focus for embedding design more strongly inside the organization (p. 91).

3. Structuring of the design department as an independent department in equal status with more established business departments

Again 2 years ago, the company restructured the design department as an independent department and united design staff working in different areas such as ceramic sanitary ware designers, ceramic tile designers, graphic designers, and interior designers that were previously dispersed throughout the organization under a single roof. Firstly, this new structure facilitates coordination and consistency

between design activities that are carried out in different domains. Secondly, it is an encouraging indication regarding design's advancing role and increasing level of integration inside the organization. Thirdly and most importantly, this structure ensures that design strategies are formulated and design efforts are managed exclusively and in a complete manner, and not in a fragmented way as part of strategies and processes of other functional groups. This organizational structure imposes that design is among the core functions that gets considered in strategy formulation and business planning processes, and treated in the same status as the more established functions such as marketing, sales, innovation, or finance. Particularly regarding this point, Borja de Mozota (2003b) denotes that the configuration of design as an independent department is an indication of the strategic importance given to design:

It is most of often the preference of directors who consider design as a strategic rather than subordinate department. The weight given design, and the power it holds, is directly related to its degree of independence in relation to marketing and technical functions. (Borja de Mozota, 2003, p. 219)

In this respect, granting design and independent status is also an indication that the organization recognizes design management as a capability that must be turned into a core competency.

10.1.3 Key enablers for the integration of design with strategy and the development of strategic level design management capabilities

Throughout the conduction of the case study and design management audit inside Eczacıbaşı Vitra, several factors were noticed to facilitate and support the development of strategic level design management capabilities and the establishment of an increased level of integration between design activities and strategy. Some of these enablers are related to major changes in company strategy, some to alterations in organizational structure, process and routines, and others to developments regarding organizational culture. The key enablers are identified as:

1. Identification of design as a major tool to achieve a long-term strategic objective /a perceived business opportunity
2. Top management support and commitment
3. A deliberate focus on achieving alignment between design strategy and the strategies of major business functions
4. Focus on the cultivation of a design oriented organizational culture

Below, these findings are discussed in more detail.

1. Identification of design as a major tool to achieve a long-term strategic objective/a perceived business opportunity

As have been discussed previously, together with the 2000s, the company perceived a valuable business opportunity in brand development and set its long term objective to make Vitra a renowned global brand. Company's transfer to brand development strategy and the recognition of design as a major tool inside brand development objectives is observed to act as the main trigger in the development of strategic level capabilities regarding design management inside the organization. But besides being a trigger, it has also supported the entire process of attaining a higher level of integration between design and the wider context of company strategy.

More importantly, the company not only recognized that design had to be utilized more strategically inside its brand development activities, but it also defined design as one of the core values of this renewed Vitra brand. By making design inseparable from its brand identity, it ensured that this route for achieving a higher level of design integration is indispensable for the company's strategic mindset. This is observed to act as a crucial contributor to the effectiveness of design initiatives, supporting their adoption and continuity.

2. Top management awareness, support and commitment

Beginning with company's strategic renewal and brand development activities that were initiated in the mid 2000s, top management support regarding design is observed to be achieved in a consistent manner. Initially an executive design board was formed that consisted of senior managers, including the general manager of Eczacıbaşı Building Products, marketing manager, product development manager, a member from the design consultancy firm that provides service to Vitra, and media consultant. The commission carried out strategic level design management responsibilities such as defining different roles for design inside the organization and shaping strategic decisions regarding design, product development, and their budgeting. More importantly, it served as an important medium to expand design awareness and understanding of top management, by making them discuss and contemplate how design can contribute to the company in different ways. This helped senior management to develop a shared understanding regarding design approach of the company; take part in important design initiatives; and prepared the ground for ensuring a continuous support and commitment on the part of senior

managers. The design board was continued for nearly a decade with diminishing involvement as design management responsibilities were transferred to other senior and middle level managers; and ultimately it was terminated together with the assignment of a senior level manager as the design director. Yet, all throughout the development of strategic level design management capabilities and the process of achieving a higher level of integration regarding design, top management support and commitment remained integral. This situation is also valid in the current state of the organization. This finding supports design management literature, in which the role of top management support and commitment is established among the most important success factors for the effective management and integration of design inside organizations (Best, 2006; Bruce & Bessant, 2002; Cooper & Press, 1995).

3. A deliberate focus on achieving alignment between design strategy and the strategies of major business functions

During the conduction of the interviews, key informants mentioned company's explicit attention to achieving a significant level of integration between design strategy and the strategies of other major business functions in the generation of the overall business strategy and plan. This is reported to be achieved through a structured strategic planning process that initially acquires suggestions and inputs from all major business functions and then analyzes these with particular attention to finding matching issues and alignments. Marketing department is given the responsibility of integrating these inputs inside a final business plan, by combining information acquired from different business functions. Company's particular attention to achieving alignment between different aspects of the business supports the identification of how design can contribute to the organization in different spheres and the formation of stronger links between design and various business strategies. Additionally, it sustains coordination between different business functions and facilitates the formation of shared goals, lack of which is recognized by design management scholars among barriers to design's effective management and integration inside organizations (Jerrard & Hands, 2008).

4. Focus on the cultivation of a design oriented organizational culture

The high level of design awareness and understanding of senior management has also been reflected in the overall attitude of employees and their approach and commitment regarding design activities. The company is observed to focus on the cultivation of design awareness and understanding, as well as creativity, all throughout the organization. This is undertaken by establishing systems and

routines, some of which can be listed as: annual meetings and awards being organized among Eczacıbaşı Group companies that are directed at increasing awareness, recognition and encouragement regarding design, creativity and innovation; organization of regular design talks and presentations inside the company that are given by in-house designers and external design specialists; and internal communication systems broadcasting news and events regarding design and creativity. Additionally, a consistent and long-standing use of design throughout the years, as well as the establishment and development of in-house design capabilities since the late 1970s have been largely instrumental in the development of a supportive culture for design. Deliberate focus on the gradual development of an organizational culture that values design and creativity has played an enabling role in the effectiveness of design management programs and in increasing the level of design integration inside the organization.

10.1.4 Key barriers

Several factors were noticed to pose challenges inhibiting the development of strategic level design management capabilities and the establishment of an increased level of integration between design activities and strategy. They can be listed as:

1. Difficulties in finding the optimal organizational structure for managing design activities
 2. Difficulties in the assignment of strategic level design management responsibilities
 3. Institutional inertia, corporate pragmatism and tradition-bound behavior
1. Difficulties in finding the optimal organizational structure for managing design activities

It must be noted that throughout this period in the development of strategic level design management capabilities, which started in the mid 2000s, the company undertook numerous changes regarding its design and design management organization. Before 2006, the in-house design team for ceramic sanitary ware consisted of 5 employees and functioned as a small module that was directed by a middle level design manager. In 2006, the in-house design team for ceramic sanitary ware was united with the design and product development teams of other product groups such as faucets, water management systems, bathroom furniture and accessories, under the roof of product development department. This structure

was maintained until 2011, with product development manager being responsible for the management of design staff and projects. Whereas in 2011, the in-house design team was placed under the marketing department, together with the assignment of project and organizational level design management responsibilities to a middle level design manager. In 2014, another major organizational restructuring took place. The design department was now structured as an independent department under the general manager. And the design staff working in different areas of design such as graphic design, interior design, and industrial design, which had previously been working under different departments, were now brought together under a single design department.

These frequent organizational changes (4 times inside a decade) indicate that throughout the development of a more strategic stance towards design and the advancement of design management capabilities at the strategic level, finding the most favorable organizational structure for managing design activities was a major challenge for the company.

2. Difficulties in the assignment of strategic level design management responsibilities

Another significant challenge for the organization was identifying how to carry out and who to assign design management responsibilities at the strategic level. Until the mid 2000s, the organization employed design as an essential component of its product development activities, but had not yet developed a strategic stance towards design. Consequently, design management responsibilities were restricted to design project management, covering both in-house and external design projects; and the organization and management of the in-house design team. However, as the organization began integrating design into its business strategy, it had to begin carrying out strategic level responsibilities such as defining design's expanding roles based on corporate objectives and business strategy, formulating design strategies and standards, and planning and allocating budgets for growing design investments in various fields to name a few. As a first step, a design commission was formed consisting of senior managers and external consultants in order to carry out these strategic level tasks. But, design management responsibilities at the project and organization level were carried out by different managers inside the organization such as the design manager, marketing manager or product development manager depending on design disciplines being utilized. For example in 2006, design management responsibility at the project level for all product design activities was assigned to the product development manager, whereas strategic level

responsibilities were mostly undertaken by the executive design board that had been formed in 2004. Yet for other design activities such as communication design, retail design and exhibition design, responsibilities were mostly given to the marketing managers. Additionally, the assignment of design responsibilities changed frequently together with changes regarding design organization. Consequently, until 2014, for nearly a decade, there was no formal responsibility for design management at the senior level and design management responsibilities were carried out in a dispersed manner by different parties based on different design disciplines and the level of responsibilities.

These indicate that the assignment of responsibility and accountability for the various aspects of design was a significant challenge for the organization. Additionally, not having a clearly assigned responsibility for design at the senior level posed problems in achieving a higher level of integration between design and business strategies, since strategic level design management tasks were carried out for a long time by managers with other priorities than design.

3. Institutional inertia, corporate pragmatism and tradition-bound behavior

It was seen that since the 2000s, the company strives to establish a farsighted and innovative approach to product design and development activities and to cultivate a creative organizational culture. Yet several organizational characteristics, such as the large scale of the organization, focus on operational efficiency, and meeting monthly sales targets, necessitate and reinforce a pragmatic approach, as well as increasing institutional inertia. And these in turn slow down necessary organizational change processes, increase their time to take effect, and make it hard to instill new approaches, more creative and strategic stances to the management of design activities. As a result, there is a constant dichotomy between corporate pragmatism and aspiring to be a visionary organization.

The effects of these issues are also observed throughout the development of strategic level design management capabilities, as it has taken the company a decade to define a formal responsibility for design at the senior level and configure design as an independent department, although it had identified it as a core value of the brand back in mid 2000s.

These issues are seen to be major barriers also for the future, specifically in the context of expanding the roles of design inside the organization, developing more innovative design strategies, and for becoming a visionary innovator of the bathrooms, which the company aspires to become.

10.2 Discussion of Case Study 2

10.2.1 The evolution from project level design management to strategic level design management

The case study report presented in Chapter 8 provides a detailed picture regarding the development of design and design management capabilities in Kaleseramik throughout the years.

The analysis reveals that in the initial years of its establishment, Kalevit¹⁵ focused heavily on the acquisition and assimilation of technologies and skills in ceramic sanitary ware production and did not carry out any original product design activities. For the first 2-3 years, product design and development was limited to product modification activities; the initial product series were developed by ceramic modelers through a process of product modification by combining the desired features of existing products in the local market. However, after these founding years, the company started focusing on the design and development of original product ranges. The major trigger that initiated product design and development activities was the prevailing conditions in the industry, more specifically:

- The existence of competition in the domestic market due to strong and established ceramic sanitary ware manufacturers, which were increasingly focusing on product differentiation.

Actually, the business group that the company belonged already possessed a certain level of design awareness and experience. It had already been developing design management capabilities in the context of its ceramic wall and floor tiles companies, which involved the development of in-house design skills, as well as the use of external design expertise. In this sense, the business group's awareness and experience with design also facilitated the company to focus on product design as soon as it absorbed production technologies and skills required for ceramic sanitary ware. Yet, instead of building design capabilities internally, it was seen that the company deliberately chose to utilize external design skills. The major motivations were: external use of design being more profitable in the context of ceramic sanitary ware, due to the number of products developed in a year being much less than

¹⁵ Currently, Kale Group's 4 different brands that cover all product categories for the bathroom, such as ceramic sanitary ware, ceramic wall and floor tiles, bathroom furniture, and faucets and shower systems, are all united under the single roof of Kaleseramik. However, Kale Group's venture in ceramic sanitary ware manufacturing initially began in 1993, as a separate company operating with the brand name Kalevit, which was at the time totally independent from its long-standing businesses in ceramic wall and floor tiles operating under the brands Çanakkale Seramik and Kalebodur.

those for ceramic tiles; in-house design teams requiring a long time to mature; being prone to repeat themselves and being more risky in terms of satisfaction with project outcomes; and the perception of external design experts as revealing higher levels of creativity and proficiency. Consequently, the company began its product design activities by starting to collaborate with external designers. This also started a period of continual progress in the company's experience and skills regarding the management of design activities. Accordingly, the company initially began the development of design management skills in the context of:

- managing design projects carried out with external designers,
- selection of external design professionals,
- design briefing,
- organizing for design,
- and coordinating external product design activities with in-house product development and production capabilities.

The company gained significant knowledge and skills through its collaborations with external designers, not only in terms of the management of design projects and external design consultants, but also in terms of identifying product needs, analyzing product portfolio and giving design briefs according to the identified gaps and requirements.

As can be observed, in the initial stages, the main trigger in the advancement of design management capabilities was external, namely the existence of competition in the domestic market which was increasingly moving towards product differentiation. Design management capabilities were initially developed at the operational level, specifically with respect to design project management capabilities.

Between 1999 and 2009, Kalevit made a partnership agreement with Roca, the Spanish leader in ceramic sanitary ware; and continued the production and marketing of its ceramic sanitary ware under the name RocaKale. Throughout this period, product design activities were again carried out through the use of external design expertise. While Roca's expertise in production technologies and technical know-how was frequently consulted and resulted in significant development of skills in these spheres, there was no transfer of knowledge targeted at the development of design or design management capabilities between the firms. However the partnership helped the company to become more competent in following market

trends, changing customer preferences and developments throughout world markets. In 2009, the partnership ended and the company continued its operations under the Kale brand.

Beginning with mid 1990s and throughout 2000s, design management capabilities developed together with the advancement of capabilities in production, quality and marketing. Design was viewed and integrated as a central component of all new product development activities. However, design management approach was solely based on the use of design for product differentiation, and design management capabilities were restricted to operational level skills in project management, design briefing, selection of external designers and design's coordination with product development, production and marketing processes.

In the same period of the dissolution of partnership with Roca, the company began developing a more strategic approach towards design and started focusing on the advancement of its strategic level design management capabilities. This stage was initiated by Kale Group's President and CEO and her consultant, as part of a larger process towards major organizational transformations in the strategic mindset and governance structure of the group's companies that functioned in the building products sector. The group decided to unite its disconnected companies and brands in building products, which covered ceramic wall and floor tiles, ceramic sanitary ware, bathroom furniture, and faucets and shower systems. Therefore, the triggers for the development of strategic level design management capabilities were internal, and strongly tied to a long-term plan for organizational restructuring and strategic renewal processes regarding several group companies. As a result, these key individuals started various programs directed at the development of design management capabilities inside the group, such as the creation of *design platforms* that brought together related staff with design management consultants. The major objectives were to improve the alignment of design strategy with marketing strategy, production scale and organizational capabilities; and to develop a unified approach to product design and development activities of these separate companies, which actually produced products that are used together inside the same usage contexts and spaces. Additionally, staff began receiving training and development programs in design and design management, in order to increase design awareness and understanding inside the group companies. They were also targeted to serve as foundational work for the organizational restructuring that was planned to take place in 2011.

Eventually, in 2011, the group united its separate companies focusing on ceramic tiles, ceramic sanitary ware, complementary products and bathroom furniture, under the single roof of Kaleseramik. This was complemented by the redesign of brand architecture and renewal of corporate identity. Additionally, the range of design activities expanded together with a more integrated use of design in the areas of product design, exhibition design, design of retail spaces, design of corporate catalogues and marketing communications. Design began to be incorporated into the brand repositioning, and brand development strategies of the company. Moreover, a design and innovation department was formed as a separate department, in equal standing with other major functional departments like marketing, sales and finance, and design management was moved to a senior level, under the leadership of a Vice President of Design and Innovation. These were leading developments regarding design and its management in the context of Turkish ceramic industry.

At this stage, design was integrated into company strategy; it was combined with corporate, brand and marketing communications; design planning and management processes were restructured; and a major project was initiated for the creation of an official design policy and guidelines manual called *Kale Design DNA*. Observing all these developments, it is seen that design was utilized as a significant tool inside the strategic renewal and organizational transformation processes concerning Kale Group's Building Products Division. The development of strategic level design management capabilities was considered by the group as one of the essential requirements to support the renewal of organizational strategy and structure. Therefore, starting with 2009, design management capabilities advanced with respect to strategic level skills, specifically in the areas of:

- inclusion of design in business strategy;
- definition of design policy, guidelines and standards;
- establishing coherence between design activities in different fields;
- expanding the roles of design inside the organization;
- achieving a higher level of design integration;
- and cultivation of a corporate culture that supports design.

However, the company could not sustain the new design management organization. In 2013, the design department was downsized and re-organized under the marketing department as a small module consisting of 4 employees. Design

management responsibility at the senior level was also terminated. As a result, design's position and integration inside company strategies, is observed to have diminished in comparison to its previous status. The reasons for this will be elaborated under the section Barriers (section 10.2.4). But this finding is in line with design management literature which reveals that the development of effective design management capabilities evolves in small steps and is a long and arduous process (Topalian, 1990; Turner, 2013) that is challenged by several important barriers (Bruce & Bessant, 2002; Jerrard & Hands, 2008).

10.2.2 Linking of design with strategy

In Chapter 8, Kaleseramik's current design management approach, practices and capabilities have been analyzed in detail and the capabilities were assessed with respect to each item of the Design Management Audit Framework. Company's design management capabilities are assessed to be at Level 4 in 12 items of the audit framework, in Level 3 in 15 items, and in Level 2 in the remaining 4 items. In brief, while the organization revealed considerable experience and capabilities in certain capability categories (*Design Planning*, *Design Investments* and *Design Processes*), it was weaker in some others, such as *Design Organization*, *Research for Design*, and *Design Integration*, and the weakest in the categories of *Culture and Climate for Design* and *Training and Development for Design*.

While the analysis presented in Chapter 8 provides a detailed and comprehensive picture about design management capabilities in Kaleseramik, the following analysis particularly discusses how design and strategy are currently linked inside the company through existing systems and routines. Presently, the company uses 3 major means to connect its design strategy and efforts with company strategies. These will be discussed under 3 major headings:

1. Assignment of management responsibility for design at middle and lower level management, under the marketing department
2. Integration of design into marketing strategy and design managers contributing to marketing strategy formulation
3. Establishment of design policy, guidelines and standards

1. Assignment of management responsibility for design at middle and lower level management, under the marketing department

Currently, the company has formal management responsibilities for design at the middle (tactical) and lower (operational) management levels, under the ultimate

direction of marketing department. Since 2013, design staff is directed by a Product and Design Manager that reports to the Vice President of Marketing. So, design management responsibilities at the tactical level are carried out by the Product and Design Manager, who also carries out product management responsibilities. Additionally, design management responsibilities at the operational level are assigned to 2 lower level managers, under the title Design Management Supervisor, who are both positioned below the Product and Design Manager. One of the Design Management Supervisors is assigned design management tasks for bathroom products (covering ceramic sanitary ware, complementary products, bathroom furniture, faucets and shower systems), and the other for ceramic tiles. Company strategies and plans are handed down from Vice President of Marketing to the Product and Design Manager, who communicates these to Design Management Supervisors. Therefore, alignment between design strategies and company strategies, design planning and the execution of design activities are carried out in a collaborative manner inside this management structure. However, management responsibilities regarding other design disciplines are under the overall responsibility of Vice President of Marketing.

Although there is no responsibility for design management exclusively assigned to a senior level manager, the existence of formal responsibilities for design management at the middle and lower levels provides some level of assistance in linking design efforts with business strategies. Yet the findings also reveal that the current structure is not satisfactory in ensuring an effective integration between design and strategy. This supports design management literature, which points to the necessity of assigning design management responsibility to a senior level manager in order to establish an effective corporate approach to design (Topalian, 1990).

2. Integration of design into marketing strategy and design managers contributing to marketing strategy formulation

The strong interdependence between design and marketing has long been pointed out by numerous scholars (Best, 2006; Borja de Mozota, 2003b; Cooper & Press, 1995; Jerrard & Hands, 2008), who have underlined that both of these functions strive to formulate strategies that differentiate the company from competitors and reinforce its competitive advantage. In this regard, Cooper and Press (1995) specifically draw attention to the frequent debates regarding whether design should be managed by and integrated with marketing. Currently, this is the scheme followed by the company, where design department is structured under the

marketing department. As a result, formulation of design strategies and design planning are carried out under marketing strategy formulation and planning with the inclusion of design managers inside this process. Although, design is not considered in higher level strategy formulation and planning processes, the responsibility of defining design's role in overall company strategy is delegated to marketing. Design is observed to be integrated into marketing strategy, as it is continuously utilized by marketing management in an extensive array of disciplines (ranging from product design, graphic design, retail design to interaction design and customer experience design), and with respect to specific business objectives, such as brand development, product differentiation for different customer segments, communication of brand promise, increasing customer loyalty, and improving customer experience. In brief, it is the marketing management that carries out the ultimate task of connecting design efforts with overall business context, strategy, and objectives.

However, the current assignment is seen to limit design's position in overall business strategy and its influence inside strategy formulation and business planning processes because design functions as a subordinate of marketing strategy and lacks the opportunity to be integrated with business strategies and processes in other areas such as R&D, innovation, or production. This is in line with Borja de Mozota (2003b) who highlights that "the dependence of design on marketing or R&D services poses frequent problems in power and coordination" (p. 220). According to her, "Either design responsibilities are assigned to a department that imposes its vision on other departments, or cooperation between departments is encouraged, as well as the design department's independence within the business structure" (p. 218).

3. Establishment of design policy, guidelines and standards

The company has defined its corporate design policy and standards through a formal document named *Kale Design DNA*, which has been generated at the end of a process spanning 3 years that involved design research, product reviews and numerous in-depth interviews and workshops held within the organization. The document clarifies company's design approach, how design should be viewed and utilized inside the organization, and provides guidelines and standards to direct the implementation phases. Design management literature reveals that the development of corporate design policy and standards is utilized by many design conscious firms in order to: establish design as a formal activity (Blaich & Blaich, 1993); to indicate how design is understood and how it affects the operations of the company (Cooper

& Press, 1995); and to define company's design philosophy (Palshoj, 1990). Their formulation is regarded among the responsibilities of senior management in order to support the connection between strategy and design efforts, as they "enable employees to plan strategy implementation in the light of that corporate policy" (Cooper & Press, 1995, p. 232-233). Similarly, for Kaleseramik the definition of design policy and standards can be said to function as a supportive system, which to some extent remedies the lack of more effective systems and routines that are utilized by companies to connect design with strategy, such as the assignment of management responsibility for design at the senior level or inclusion of design staff in strategy formulation processes.

10.2.3 Key enablers for the integration of design with strategy and the development of strategic design management capabilities

Other than the factors that have been discussed in the previous section under the current means of linking design with company strategies, additional factors were identified which have played a significant role in enabling and supporting the achievement of an increased level of design integration inside the organization and the development of strategic level design management capabilities. These can be listed as:

1. Identification of design as a major tool to achieve a long-term strategic objective/a perceived business opportunity
 2. Endorsement coming from the business group's top management
 3. Organization of temporary design platforms
 4. Efforts towards the cultivation of a design oriented organizational culture
 5. Previous assignment of a formal responsibility for the management of design at the senior level
1. Identification of design as a major tool to achieve a long-term strategic objective/a perceived business opportunity

As mentioned previously, the trigger behind the company's focus on the formation of a strategic stance towards design and the advancement of design management capabilities at the strategic level was the identification of design as a central resource that must be developed in order to support the business group's organizational and strategic renewal process. In 2009, the group decided to renew its strategy and organizational structure concerning all the companies under its building products division. The new strategy was directed at establishing a more

holistic approach to the design and development as well as marketing of all the different product groups, which were at the time managed under separate companies. The major objective was to provide ease and smoothness to all customer segments throughout pre-purchase, purchase and use experience by establishing a higher level of integration and harmony between different products that are used inside the same bathroom space. In order to achieve these strategic objectives, major design programs were initiated to guide and support the increasing integration of design into business strategy, marketing, brand development and corporate communication processes.

2. Endorsement coming from the business group's top management

Throughout the case study and interviews made with key informants it was seen that although company's top management does not reveal a high level of design awareness and understanding, the vision and drive behind the design orientation of the company is guided by the CEO of Kale Group and Kale Group's Vice President of Organizational Development. These key individuals of the business group strongly endorse design and they have provided direction and impetus regarding major design initiatives. Their design awareness and support is observed to act as major stimuli for the increased integration of design with company strategies.

3. Organization of temporary design platforms directed at achieving strategy alignment, coordination and commitment

Together with the identification of design as a critical tool inside Kale Group's long term plan for major transformations regarding its organizational mindset and structure, Kale Group's President and CEO, and her consultant formed temporary design platforms that lasted for about 3 years, which assembled related staff from Kale Group's different companies that functioned in the building products sector.

Through these platforms it was aimed: to begin elaborating on design inside a more strategic manner so as to improve the alignment of design strategy with marketing strategy, production scale and organizational capabilities; to develop a unified strategy and approach for product design and development activities of different product categories; and to increase coordination and commitment regarding design. The platforms are observed to have functioned as significant facilitators in the development of strategic level design management capabilities, in addition to increasing design awareness, commitment and integration inside the organizations.

4. Efforts targeted at the cultivation of a design oriented organizational culture

The aforementioned key individuals also initiated important programs targeting the cultivation of a design oriented organizational culture. Around 30 people from the staff were enrolled in a major training and development program that was devised by Design Culture and Management Program of İstanbul Bilgi University. The program was aimed at developing an increased understanding for design culture; expanding design knowledge and awareness; and improving design management skills. This was complemented by the establishment of Kale Tasarım Merkezi (Kale Design Center), which further aimed to promote design and facilitate design integration, not only inside group companies but also in the context of the wider industry. The role of organizational culture in creating the right environment for design and innovation to proliferate, and in supporting creativity, design and innovation is widely recognized in design and innovation management literature (Jenkins, 2010; Oliver, 2002). In this respect, these programs are seen to contribute to the development of design awareness, understanding and culture inside the organization, facilitating the increasing utilization of design with respect to various business strategies.

5. Previous assignment of a formal responsibility for the management of design at the senior level

Together with the increasing importance of design inside business strategy, in 2011, the company formed a Design and Innovation Department as an independent function, and assigned formal responsibility for design management to a senior manager under the title Vice President of Design and Innovation. Therefore from 2011 to 2013, a Vice President of Design and Innovation had the overall responsibility for design management, as well as being an active participant in company's strategy formulation and business planning processes. It was seen that this structure served as an important means for ensuring design to be considered by senior management team inside strategy and business planning routines; and to have stronger presence and influence inside the organization. Additionally, it was seen that important developments were realized in this period towards the improvement of systems, processes and routines for design's effective management and the formation of an organizational design policy. However, since the cessation of this responsibility, design's consideration in strategy, as well as its input to the company strategy formulation process is observed to have weakened considerably.

10.2.4 Key barriers/challenges

Throughout the development of strategic level capabilities in managing design, a number of factors are observed to pose significant barriers for the achievement of increased design integration inside the organization, eventually resulting in the regression and failure of several important design initiatives that were started in the past. These will be discussed under 6 major headings:

1. Finding the optimal organizational structure for managing design activities
2. Difficulties in the assignment of strategic level design management responsibilities
3. Management routines based on efficiency, cost-cutting, and seeing fast results
4. Underdeveloped culture for design
5. Problems regarding power-sharing and company politics
6. Difficulties with respect to ensuring the continuity of top-down initiatives

1. Finding the optimal organizational structure for managing design activities

Beginning with the period where the company focused on advancing its design management capabilities, the company also decided to make a significant change in terms of its design management organization.

Before 2011, the company had a very small in-house design team working solely on ceramic wall and floor tiles. All other design activities of the group companies were performed based on external design use. Additionally, the management of design activities was under the direction of marketing department and were carried out by marketing specialists. As have been explained before, together with the joining of group's separate companies under the single roof of Kaleseramik, designers were recruited and a new in-house design organization was structured as an independent unit under the title of Design and Innovation Department. It gathered 8 designers coming from different specializations; was headed by a Vice President of Design and Innovation; and brought together the management of all design activities regarding different product groups. Yet due to several problems in terms of power sharing, organizational culture and establishing harmony and collaboration between design management and marketing management, this organizational structure for design was abandoned in 2013. Design department was configured back under the marketing department as a small module consisting of 4 employees. The assignment of design management responsibility to a senior level manager was also

cancelled. These developments indicate that finding the most favorable organizational structure for the in-house design function and for ensuring the effective management of design activities emerged as a key challenge for the company in its efforts to develop strategic level skills in managing design.

2. Difficulties in the assignment of strategic level design management responsibilities

Together with company's increasing focus on the development of design management capabilities, how to carry out design management responsibilities at the strategic level and who to assign these responsibilities became significant concerns. Initially, this was handled through *design platforms* that were formed among the group companies, which brought together design and product management related personnel, as well as a strategic design consultant. But after the group united its separate companies under a single roof, the company formed an independent design department and assigned strategic level design management responsibilities to a Vice President of Design and Innovation. As the company could not sustain this design management structure, currently strategic level design management responsibilities are shared between Vice President of Marketing and the Product and Design Manager, who have other priorities in marketing management and product management. These developments reveal that assignment of strategic level design management responsibilities for expanding design management tasks posed a major challenge for the organization.

3. Management routines based on efficiency, cost-cutting, and seeing fast results

When the interviewees were questioned about the challenges faced by the company in terms of ensuring the continuity of design and design management initiatives, consistent themes appeared to be: organizational efficiency studies focusing on cost-cutting and profitability; the strictly financial approach taken in measuring the contributions achieved through design investments; organizational culture based on seeing fast results and difficulties in quantifying the contributions of design. Key informants revealed that these factors played a part in the perception of significant design programs as a cost, a luxury, and to be associated with high risk. It was seen that the same reasons lied beneath company's long preferred choice in carrying out its design activities based on external design capabilities in the ceramic sanitary ware product category, instead of developing design capabilities in-house. This choice was again based on financial grounds, long term investments required for the development of in-house skills, as well as high risks being associated with the

development of in-house design capabilities; external design use was seen as more profitable and less risky in terms of the satisfaction with project outcomes.

These are in line with previous literature which has focused on identifying major barriers to successful design integration. Cost-constraints, short-termism, associating design with high risk, and not being able to evaluate potential contributions other than financial results are listed among the foremost barriers to integrating design inside organizations (Bruce & Bessant, 2002; Jenkins, 2010; Jerrard & Hands, 2008). Bruce and Bessant (2002) explain that “Companies often associate design with high risk and fail to acknowledge its potential benefits for strategy and growth. Many managers still view design as just a cost and so are less able to weigh up potential rewards” (p. 50). All these characterizations were strongly confirmed in the context of Kaleseramik.

4. Underdeveloped culture for design

Another significant factor mentioned by the interviewees among the main challenges faced by the company in the development of strategic level design management capabilities was the existing culture for design inside the company. They indicated that despite programs targeted at the cultivation of a design culture, important design initiatives, such as the structuring of an independent in-house design department in equal status with other major departments, assigning design management responsibility to a senior level manager; or including him in strategy formulation and business planning routines were early steps for the company in terms of the prevailing understanding and culture for design.

They pointed that senior management in general had a “superficial” understanding regarding design, were still “strangers” to design in certain respects, and as a result they were still “questioning” design initiatives and activities. Likewise, regarding the attitude of employees, it was seen that they believed design to be valuable, but showed reluctance when it comes to changing their daily routines, and hence resulting in problems with respect to commitment and support.

Although the company has been undertaking design activities since a long time, the culture for design to have stayed relatively underdeveloped is considered to be closely related to the factors referred in design management literature under the terms *design illiteracy* and *design segregation*. While *design illiteracy* is identified as managers not knowing “what is involved in design activities and who do not have the experience to appreciate the contribution design and designers’ skills can make” (as cited in Jerrard & Hands, 2008, p. 12), it is indicated that it may lead to or be caused

by *design segregation*, which is a condition that “occurs in companies which repeatedly outsource design expertise and therefore have a tunnel view of what the design function is” (Bruce & Bessant, 2002, p. 50). Considering that the company has long been undertaking design through the use of external design expertise, it is likely that this choice has resulted in design segregation and design illiteracy, in turn hindering the development of an organization wide understanding, commitment and support regarding design.

5. Problems regarding power-sharing and company politics

As noted previously, in its efforts to establish a higher level of integration between design and strategy, two significant attempts made by the company were: the assignment of design management responsibility to a senior manager under the title *Vice President of Design and Innovation* and the organization of design as an independent department under his direction. It was seen that another important setback hindering the successful implementation of this organizational structure was continuous problems caused by managers’ unwillingness to share power, specifically with regard to design management decisions. This is seen to have had a considerable effect in company’s decision to cancel the assignment of design management responsibility at senior level, and to restructure the design department back under marketing management. Interviewees revealed that due to power struggles and marketing management’s aversion to share its previously held power over design management, an effective collaboration and harmony could not be established between design and marketing functions.

Among her list of major design barriers, Siegel has referred to these challenges under the overarching concept of *company politics* (as cited in Jerrard & Hands, 2008). According to her, company politics is a major factor present in all stages of design integration, where “Self-interest from separate business units may prevent the uptake of a new strategy aimed at creating a common corporate goal” (as cited in Jerrard & Hands, 2008, p. 12). Likewise other design management scholars identify political problems between departments and territory protection among main obstacles faced by design (Bruce & Bessant, 2002; Cooper & Press, 1995).

6. Difficulties with respect to ensuring the continuity of top-down initiatives

Problems regarding establishing the continuity of leadership and commitment in top-down initiatives appeared among other significant barriers. Additionally, in this particular case, the top down initiatives were not started internally by company’s top management but externally by the business group’s top management. All the

aforementioned programs and initiatives in the areas of design management, reorganization for design, development of an organizational culture for design, were driven by the business group's President and CEO and Vice President of Organizational Development. This is observed to have posed additional impediments to their success and continuity, as the business group's top management had relatively much more limited opportunity for involvement and intervention than company's top management throughout the implementation process. In this context, the most significant challenges were: finding and assigning the right person to lead; ensuring that company's top management internalize and take the development of design management capabilities as a priority; and creating and sustaining belief and commitment.

10.3 Discussion of Case Study 3

10.3.1 Evolution from project level design management towards strategic level design management

The development of design and design management capabilities in Serel Seramik is described in detail inside the case study presented in Chapter 9. It was seen that, different than the other two cases, the company immediately started the development of design capabilities in-house, right away from its founding years. The analysis indicates that the main motivation behind a rapid focus on their development was due to the business group's high emphasis on the development of core capabilities inside the group companies, as well as an organizational culture highlighting independence and self-sufficiency. Additionally, the business group gave particular importance to the in-house possession of capabilities concerning technology development and manufacturing quality, making product design and development capabilities a central area of focus starting from the initial years.

As a result, the company established a design department in İstanbul that included designers coming from ceramics and glass fields and started the development of in-house design capabilities in ceramic sanitary ware. After a short period involving collaborations with Italian designers for learning purposes, all products began to be designed and developed through in-house design capabilities. Accordingly, the company initially began developing design management skills in the context of:

- managing design projects,
- organizing for design,

- coordinating in-house product design and development activities with R&D and manufacturing,
- and setting up design processes.

In contrast to the previous case studies, internal characteristics, specifically a corporate strategy and culture that prioritized the possession of capabilities concerning technology development internally, were the major triggers for the development of design and design management capabilities. Design management capabilities were initially developed at the operational and tactical levels of design project management and design organization management.

Throughout the 1980s and 1990s, design and design management capabilities advanced gradually with continuing upgrades in expertise, technology, staff and management skills and together with company's capabilities in terms of R&D, production and quality management. Until the 2000s, design management was organized under factory management. Yet in 2002, design department became an independent department and was moved to a higher level in the management hierarchy, and was positioned directly under the general manager of the company.

Although from its initial years the company has given considerable emphasis to the development of product design capabilities, design as well as design management capabilities are seen to receive a significantly heightened consideration since 2008, in order to support a major organizational renewal process, which started following company's merger with another group company due to the deteriorating financial performance and competitive position of Serel Seramik. Together with the consolidation, the company decided to change its market focus from the low and economic income segments to middle and upper middle income segments, setting its goal to become the market leader in the middle income segment. Subsequently, a major transformation period was initiated by the newly appointed general manager and design was placed as the principal tool to drive this significant process. This necessitated the company to review and restructure its design management routines and begin developing strategic level design management capabilities. After a complete review of product portfolio, review and reformulation of design processes, and restructuring of the design organization, the company defined a new design strategy and began establishing new routines in order to improve the coordination between design and business strategies.

Consequently, similar to the previous case studies, the triggers for the development of a more strategic stance towards design were internal, and strongly tied to

company's transformation efforts and its renewed business strategy, specifically in terms of a major change in its market focus. As a result, since 2010, there has been a wide expansion in company's product range, accompanied by increased brand recognition; enhanced acknowledgement for good design; and several awards won in worldwide design competitions. Additionally, the company has managed to achieve a remarkable growth in market share, which increased from 3 % in 2008, to 15% in 2015. The General Manager indicates that this noteworthy outcome was achieved by giving emphasis to design.

Borja de Mozota (2003b) underlines that strategic design management requires design to participate in strategy formulation and selection processes with the objective to "bring design knowledge into the transformative vision of the market, but also supervising the penetration of the design spirit into business objectives" (p. 238). In a similar characterization, in this period starting after 2008, the company greatly improved design's contribution, influence and position inside strategy formulation and business planning routines; developed its capabilities in the alignment and coordination of design with the overall company strategy; and ensured a higher level of communication and coordination between design and other business functions. Consequently, design management capabilities are observed to advance particularly with respect to strategic level skills in the areas of:

- inclusion of design in strategy formulation and business planning processes;
- formulation of design strategy;
- increasing coordination of design with other business functions, their strategies and processes;
- and expanding the roles and influence of design inside the organization.

Although the company is seen to attain a considerable leap in terms of its design and design management capabilities, it was seen that these developments are largely confined to product design activities. While the company carries out design activities in other areas, such as graphic design, web design, exhibition design and retail design, its capabilities regarding these domains are significantly weak and the company has not yet managed to develop a holistic approach to design activities in different fields.

10.3.2 Linking of design with strategy

In Chapter 9 design management approach, practices and capabilities of Serel Keramik had been analyzed and assessed according to each item of the Design

Management Audit Framework. Company's design management capabilities were assessed at Level 4 in 12 items of the audit framework, in Level 3 in 15 items, and in Level 2 in the remaining 4 items. It was seen that design management capabilities are the most advanced in the categories of *Investments for Design*, *Design in Strategy*, *Design Processes* and *Training and Development for Design*. These are followed by capabilities in the categories of *Planning for Design*, *Design Organization*, and *Culture and Climate for Design*. The company has weaker capabilities in *Design Integration* and the weakest capabilities in *Research for Design*.

This analysis presented in Chapter 9 aimed to provide a comprehensive depiction about Serel Seramik's design management capabilities. On the other hand, the following analysis specifically focuses on the connection between design and company strategy, and discusses the current systems and routines utilized by the organization, in order to link its design activities to business strategies. These systems are listed and discussed under 3 major headings:

1. Existence of a formal responsibility for design management at the senior level directly under the general manager
2. Design manager being a major partaker inside strategy formulation and business planning processes
3. An independent design department in equal status with more established business departments

1. Existence of a formal responsibility for design management at the senior level directly under the general manager

Inside company's organizational structure, the Design and Application Manager is a senior level manager positioned directly under Serel Seramik's General Manager. Design manager's position at a high level in the management hierarchy, in equal status with the directors of other functional departments and in direct relationship with the general manager is observed to provide a strong connection and alignment between design activities and business strategies, and to increase the influence and integration of design throughout the organization.

2. Design manager being a major partaker inside strategy formulation and business planning processes

Serel Seramik's management board is composed of company's departmental managers and the general manager. Since the design function is organized as an

independent department, the Design and Application Manager is also an integral member of the company's management board. This scheme enables Design and Application Manager to participate in all strategy formulation and strategic decision making processes; to provide guidance, suggestions and new perspectives regarding design and product development; and to coordinate design strategy with the strategies of other functions such as R&D, production, and marketing. Moreover, it guarantees that the Design and Application Manager has broad knowledge and understanding regarding business strategies, as well as policies and plans of major business functions, which facilitates the identification of different roles for design throughout the organization, such as design's role in increasing production efficiency or in the context of packaging and shipment of products. The findings are line with the design management literature, which has long been pointing to the value of including designers and design managers inside the strategy teams (Borja de Mozota, 2003b; Francis, 2002; Jerrard & Hands, 2008)

Additionally, this system ensures design to be discussed and considered by the members of the senior management team, increasing its influence, integration and dissemination throughout the organization. As Borja de Mozota (2003b) denotes, the dissemination of design inside an organization happens through procedures of training, contact, listening and communication. Similarly, in the case of Serel Seramik, ensuring design has continuous contact and communication with all senior managers significantly increases its diffusion and coordination inside the organization.

3. An independent design department in equal status with more established business departments

It was observed that the independence of the design department facilitates design to be directly linked to overall business strategy, instead of being utilized as a subordinate function under the authority of another business department, which imposes its own approach and vision on design. This structure maintains that design has direct communication and coordination with other business functions in equal status and power. Additionally, the long-held independence of the design function ever since 2002 is also seen to have contributed considerably to the gradual development of an organization wide awareness and support on the side of design. According to design management scholars, design's place in the organizational structure illustrates design's mission in terms of business strategy and the significance given to design (Borja de Mozota 2003b; Walsh, et al. 1992). They indicate that design's power and strategic role is directly related to its degree of

independence in relation to other functions (Borja de Mozota, 2003b), which in turn influences company's design and business performance (Walsh, 1992). These indications were completely supported in the case of Serel Seramik.

10.3.3 Key enablers for the integration of design with strategy and the development of strategic level design management capabilities

The major means utilized by the company, in order to link its design activities with company strategies have been discussed in the previous section. In addition to these routines and structures, several other factors are seen to support the development of strategic level design management capabilities and facilitate the attainment of an increased level of integration between design activities and company strategies. These will be discussed under 4 main themes:

1. Identification of design as a major tool to achieve a long-term strategic objective/business opportunity
 2. Top management awareness, support and commitment
 3. A deliberate focus on increasing communication and coordination among departmental managers
 4. A supportive organizational culture for design due to a long-established in-house design function
1. Identification of design as a major tool to achieve a long-term strategic objective/business opportunity

As have been mentioned, together with company's merger in 2008 with another group company functioning as its raw material supplier, Serel Seramik entered a period of major organizational transformation. After a thorough analysis of the business context, the company recognized a significant business opportunity in changing its market focus from the low income segments to the middle and upper middle segments, and completely renewed its market and product development strategies, with the long term objective of establishing leadership in this new target market. The company discerned that in order to appeal to the middle and upper middle income market segments, design had to be positioned at the center of this renewed business strategy, in order to drive company's intensified new product development efforts, and to realize its market growth and brand repositioning objectives. The general manager explained that following the new strategy, he initiated the transformation process by making significant changes regarding design strategy, design organization and design processes of the company. Design's

identification as a fundamental instrument in achieving company's new strategic objectives facilitated emphasis to be given to the development of design and design management capabilities and necessitated the company to clarify how design fits with the renewed business strategy.

Therefore the fundamental factor enabling the transition from operational and organizational level design management to strategic level design management routines was the recognition of design as the key instrument to attain a perceived business opportunity; and following this, the formation of a new design strategy aligned with the organization's renewed strategy and objectives in pursuit of this business opportunity.

2. Top management awareness, support and commitment

The case study revealed that design had always been regarded by the company among the core capabilities that must be advanced internally starting from the founding years. However, together with the appointment of a new general manager following company's merger, design began receiving a noticeably emphasized place in business strategy.

The general manager's awareness and understanding regarding the strategic importance of design functioned as a major enabler for design to take on expanding roles (in brand development and brand repositioning) and to begin to be managed with a novel outlook and as an integral component of the company's renewed strategy. Additionally, the general manager's view of design as one of the most significant functions inside the company, and his constant focus on improving company's design management processes and systems facilitated the achievement of support and commitment of other senior managers inside the company.

Jevnaker (1998) points that in many cases the development of organizational capabilities in design depends on knowledgeable or design-committed managers; when they are in charge, significant developments can be achieved with regards to capabilities in managing and organizing design. In Serel Seramik's case, it was seen that this was the general manager of the company, initiating the advancement of design management capabilities that are necessary to achieve an increased integration between design and business strategy.

3. A deliberate focus on increasing communication and coordination among departmental managers

It was seen that company's purposeful focus on the improvement of communication and coordination among departmental managers was also instrumental in helping

them to take increasing ownership of design and design's renewed place in the overall company strategy.

Starting with his appointment in 2009, the general manager identified that many problems inside the company were due to the low level of communication and coordination between departments. He began to work on removing this setback by developing new routines. One of these procedures was the organization of regular company management board meetings to take place every day in the morning, in order to bring together departmental managers to discuss, evaluate and share not only long term issues, but also daily activities and perspectives regarding short term matters.

Firstly, this practice contributed greatly to the successful execution of the planned organizational transformation process. Yet, in the context of design management, it also facilitated the transformation from the old design strategy and management processes to the new, and allowed the new design strategy to be formulated collectively, together with contributions coming from the senior management team. By helping senior management to develop a shared understanding regarding the new design strategy and processes, and a medium to follow their progression, it facilitated their acknowledgement, coordination and support all throughout the implementation phases.

4. A supportive organizational culture for design due to a long-established in-house design function

The analysis revealed that the organization had a fairly supportive culture for design, due to its long-held experience in carrying out and managing in-house design activities, beginning from the first years of its establishment. Additionally, the unique corporate culture of the Elginkan Group that considered product design and development capabilities among central capabilities that should be developed internally, has been greatly assistive in the gradual development of an organizational wide understanding and support for design throughout the years. The interviewees revealed that the design department had always been held in high regard, having a somewhat privileged position inside the company. Consequently, the long-established capabilities in the management of in-house design processes, as well as a supportive culture for design served as important enablers for company's increasing design integration and the successful implementation of its new design strategy since the end of 2000s.

10.3.4 Key barriers/challenges

Besides the major enablers discussed in the previous section, the case study also revealed several dynamics, which were observed to create important barriers for the progression of strategic level design management capabilities and the development of a more holistic approach to design activities carried out in different areas. They will be conferred under 5 major themes:

1. Underdeveloped capabilities in managing design activities in areas other than product design
 2. Lack of an integrated approach to design management due to management of design activities in different fields by several companies under the business group
 3. Underdeveloped marketing capabilities
 4. Strong culture and rigid routines of the business group enforcing a high level of dependence on group's other organizations
 5. High level of contact between design and production and an organizational culture based on prioritizing engineering and manufacturing capabilities
1. Underdeveloped capabilities in managing design activities in areas other than product design

The company has focused its attention on the development of product design capabilities, while neglecting the advancement of design capabilities in other areas. As a result, although the company carries out design activities in different categories, such as the design of communication and promotion materials, design of exhibition stands and the design of retail environments, design management capabilities in these fields are significantly underdeveloped compared to company's capabilities regarding product design. The high level of disparity with regards to design management capabilities in different areas appears as a major challenge that must be overcome in order to develop a holistic approach to design management, which is essential for expressing company's design strategy in all physical manifestations of the business.

As Topalian (1990) underlines, it is important to take an inclusive account of different design areas because they are strongly interconnected in forming the total presentation of an organization. He states that "the professional management of design activities involves the integration of, and uplifting standards in, all categories of design" (Topalian, 1990, p. 121). This view is finding increasing emphasis in the

recent design management literature that stresses the value of coordinating design activities in all customer touchpoints from products and services to environments, communications and interfaces (Lockwood, 2010).

2. Lack of an integrated design approach due to the management of design activities in different fields by several companies under the business group

Another significant barrier for the development of an integrated approach to design management in different categories is the management of design activities in different fields by several companies under the business group. While all product design and development activities are carried out by Serel Seramik, design activities concerning sales and communication materials, exhibition stands and retail environments are under the responsibility of group's marketing and sales companies, Elmor A.Ş. and Eleks A.Ş. Observations of the physical manifestations of design, as well as the interviews with key informants reveals that this structure poses problems in achieving coordination and coherence between the outcomes in different design categories. The interviewees underlined that the company lacked a uniting vision for design due to design not being managed under a single authority. One of the major responsibilities of strategic design management is ensuring the consistency of design work taking place in different areas, such as products, communications, environments and information (Borja de Mozota, 2003b). Therefore, the formulation of a holistic vision for design and its management based on this guiding vision is a major challenge for the company that must be overcome, in order to progress into a more strategic exploitation of design capabilities.

3. Underdeveloped marketing capabilities

Previous studies on the Elginkan Group (Erçek & Günçavdı, 2010, 2016, Günçavdı, 2009; Tüzün, 2010), as well as interviews and observations conducted throughout the research reveal that the group have always relied heavily on engineering and manufacturing capabilities, cultivated a strong engineering dominant organizational culture and neglected the development of marketing capabilities alongside other significant outside-in capabilities (Day & Moorman, 2010; Manning & Bodine, 2012) that are extremely critical in today's market environment for business success. In the words of an interviewee:

We started the business as industrialists; we always had a manufacturing focused structure. [...] No matter what we do, we always stay as manufacturers and salesmen. I am really sad for having to say this because I think the same way as you do. The marketing side of the business is considered in a narrow manner. (Sales and Marketing Director, personal communication, December 18, 2015)

Additionally, as marketing and design are highly interdependent and complementary in their mind-set, goals and working routines (Best, 2006; Borja de Mozota, 2003b; Cooper & Press, 1995; Jerrard & Hands, 2008), the development of these capabilities are also observed to progress in a mutually supporting manner in many organizations.

In Serel Seramik's case, the company advanced its product design and development capabilities, viewing them as essential capabilities to thrive the group's long-held emphasis on engineering excellence and manufacturing superiority. However the underdeveloped marketing capabilities of the company are observed to have hindered the development of design and design management capabilities in other design areas. This barrier is still present, and identified by interviewees as one of the major factors behind company's lagging skills in the successful utilization and management of design in these categories. Therefore, this factor poses a major challenge for the formation and implementation of an integrated design strategy, which can facilitate the generation of holistic and successful design outcomes throughout all customer touchpoints.

4. Strong culture and rigid routines of the business group enforcing a high level of dependence on group's other organizations

It is seen that the strong culture and rigid routines of the business group impose a high degree of dependence between the group companies, which largely restricts their strategic decisions and choices regarding the development of certain capabilities. This binding structure of the group is also observed to limit company's design and design management processes, preventing it to decide and act independently in many contexts, such as in the design of its catalogues, websites, or brand identity, and the organization and management of these design activities.

The company executives are aware of many of the barriers that prevent the company to progress towards a more integrated management of design. Additionally they indicate that they would have chosen to act differently in several contexts. However, they consistently point to the strong culture and routines of the group and the difficulties posed by the necessity to act as a single unified body.

5. High level of contact between design and production inside an organizational culture prioritizing engineering and manufacturing capabilities

In Serel Seramik, since mid 1990s, the design department is functioning inside the production plant, having a high level of contact with manufacturing mediums and processes, and in closest interaction with production and R&D departments. This is

observed to result in significant advantages and advanced capabilities in terms of design's transfer to production, improving process efficiency, rapid product design and development, and designer's thorough knowledge regarding production processes. However, it is also observed to limit company's design and design management capabilities, as design management at the organizational level is heavily based on the interaction between design and the technical functions, without much regard for maintaining an equally effective interface between design and the functions of marketing and sales. Additionally, company's design management capabilities with respect to items *Design Research Programs and Resources* and *Cultivation of Information and Idea Networks for Design* were assessed to be fairly weak. When this factor is combined with an organizational culture strictly prioritizing engineering and manufacturing capabilities over capabilities that are essential to absorb external knowledge and to combine them with internal capabilities, designers are observed to be subject to a one-sided stimulation process, emphasizing the technical side over the exploration of customer needs, wants or wider developments inside the socio-cultural environment.

Although the company has been trying to eliminate this imbalance by improving its capabilities in research for design and the cultivation of information and idea networks, in the present context the aforementioned dynamics limit company's design vision and pose a significant challenge for the further development of strategic level design management skills.

10.4 Cross Case Analysis of Design Management Capabilities

Throughout the case studies, design management approach, processes and capabilities of each company have been detailed and evaluated with respect to each item of the *Design Management Audit Framework*. Here, these results are combined and presented in Table 10.1 in order to facilitate the cross case analysis, and with the aim of providing a general insight into how the studied organizations differ with respect to their design management capabilities in different capability categories. As can be observed in Table 10.1, among the studied organizations Eczacıbaşı Building Products is seen to possess the most advanced skills for managing design; being assessed at Level 4 in 24 out of 31 of the capability items of the framework and at Level 3 in the remaining 7 items. Whereas, Kaleseramik and Serel Seramik reveal relatively weaker capabilities; and were both assessed at Level 4 in 12 items, at Level 3 in 15 items, and Level 2 in 4 items of the Design Management Audit Framework.

Table 10.1 : Cross case comparison of design management capabilities based on the *Design Management Audit Framework* assessment results.

	Eczacıbaşı VitrA	Kaleşeramik	Serel Seramik
Design in Strategy	4	3.6	3.8
Strategy Formulation Process	Level 4	Level 4	Level 4
Strategic Planning Process	Level 4	Level 4	Level 4
Strategy and Planning Communication	Level 4	Level 4	Level 4
Design in Strategy	Level 4	Level 3	Level 3
Design's Input to Strategy Formulation	Level 4	Level 3	Level 4
Planning for Design	3.66	4	3
Design Planning	Level 4	Level 4	Level 4
Design Planning Horizons	Level 4	Level 4	Level 3
Design Policy and Standards	Level 3	Level 4	Level 2
Investments for Design	4	4	4
General Budget Allocation	Level 4	Level 4	Level 4
Design Budget Allocation	Level 4	Level 4	Level 4
Design Processes	4	3.5	3.666667
General Process Awareness	Level 4	Level 4	Level 4
Design Process Awareness	Level 4	Level 3	Level 4
Design Process Management	Level 4	Level 4	Level 4
Design Process Thinking, Methods & Tools	Level 4	Level 3	Level 3
Legal Processes for Design	Level 4	Level 4	Level 4
Design Evaluation Processes	Level 4	Level 3	Level 3
Design Organization (People and Structures)	4	3	3
Design Management Responsibility	Level 4	Level 3	Level 3
Design Skills	Level 4	Level 3	Level 3
Organizing for Design	Level 4	Level 3	Level 3
Research for Design	3	3	2
Design Research Programs and Resources	Level 3	Level 3	Level 2
Information and Idea Networks	Level 3	Level 3	Level 2
Training and Development for Design	3.5	2	3.5
General Training and Development	Level 4	Level 2	Level 4
Nurturing Skills and Creativity of Design Personnel	Level 3	Level 2	Level 3
Design Integration	3.5	3.33	2.75
Coordination and Communication with Other Business Functions, Strategies and Processes	Level 4	Level 3	Level 3
Role and Place of Design	Level 3	Level 3	Level 3
Breadth of Design	Level 3	Level 4	Level 3
Coherence and Coordination Between Different Areas of Design	Level 4	Level 3	Level 2
Culture and Climate for Design	3.75	2.5	3
Design Awareness & Understanding	Level 4	Level 2	Level 3
Design Commitment of Top Management	Level 4	Level 3	Level 3
Design Attitudes of Employees	Level 4	Level 3	Level 3
Environment for Creativity	Level 3	Level 2	Level 3

Although the overall assessment results are similar for these 2 companies, it must be underlined that this does not indicate that they have equivalent capabilities in

managing design. Instead, each of these organizations has different skill sets, experience and capabilities in design management varying according to different capability categories. For example with respect to the category of *Design in Strategy*, Eczacıbaşı Vitra reveals the most advanced capabilities, while in the category of *Planning for Design*, Kaleseramik possesses the most advanced capabilities. On the other hand regarding the category of *Training and Development for Design*, both Eczacıbaşı Vitra and Serel Seramik show significantly more advanced skills than Kaleseramik.

Following is a brief analysis regarding how each company performs in the 9 capability categories that constitute the major dimensions of the Design Management Audit Framework, which are:

- Design in Strategy
- Planning for Design
- Investments for Design
- Design Processes
- Design Organization
- Research for Design
- Training and Development for Design
- Design Integration
- Culture and Climate for Design.

Design in Strategy:

With respect to the category of Design in Strategy, Eczacıbaşı Vitra possesses the most advanced capabilities, followed respectively by Serel Seramik, and Kaleseramik. All of these companies have detailed and highly structured strategy formulation, planning and communication routines. Yet they clearly differ in terms of design's position in business strategy and the extent of design's input to strategy formulation processes.

In Eczacıbaşı Vitra, design is positioned as a core value of the brand. As a result design is a central element of business strategy which is discussed, formulated and planned by senior management inside strategic planning routines. Design's input to the strategy formulation and business planning processes of the organization is considerably high, as design director is an integral member of strategic planning

meetings, and on equal standing with other functional departments such as marketing, sales, innovation and finance. Similarly in Serel Seramik, design has a significant place in business strategy and there is a high level of design input to strategy formulation through the inclusion of design and application manager in company management board, who is also in equal status with other departmental managers. However, design is seen to be considered in a more limited approach, with emphasis placed solely on design's role in new product development, without much regard for improving capabilities in other design disciplines, identifying other roles for design, or the formulation of an integrated design strategy in order to establishing coordination and coherence between outcomes in different design categories. On the other hand, in Kaleseramik, design is not currently considered by senior managers inside strategy formulation and planning processes. Although design has a considerable place in business strategy, the formulation of design strategy is assigned totally to marketing management and design is integrated into company strategy and business plans only under marketing strategy. As there is no formal responsibility for design at the level of senior management - design managers are middle and lower level managers under marketing - design's input to strategy formulation is limited to contributions in the context of formulation of marketing strategy.

Planning for Design:

In this category, Kaleseramik shows the most advanced capabilities, followed by Eczacıbaşı VitrA and Serel Seramik. In terms of Design Planning, all organizations carry out detailed planning for design, based on their business strategy, and together with clear objectives for design. Yet, planning horizons for design are considered within a more long term outlook in Eczacıbaşı VitrA and Kaleseramik. These companies focus on contemplating future roles for design and carry out their design planning guided by a more long term vision.

Among them, Kaleseramik is the only company, which has defined its design policy and standards through an extensive manual called Kale Design DNA. Eczacıbaşı VitrA also follows certain design guidelines, which are partly articulated inside design briefs or company documents; but for the most part they have stayed more implicit and tacit in nature. However, the organization is currently working on defining and compiling their design policy and standards. For Serel Seramik, there are basic notions that guide design activities. Still, they are at the level of common design objectives. The organization has not yet focused on developing a coherent

perspective on design; nor has it addressed the issue of defining and articulating its design approach or standards.

Investments for Design:

In this category, all companies have significant capabilities both in terms of General Budget Allocation and Design Budget Allocation. Inside these organizations, financial planning and budget allocation decisions take place based on detailed financial procedures to evaluate investments, risks and to track returns. Every year, the companies allocate considerable budgets to design activities, which are guided by their business objectives for the year and projections of potential returns.

In Eczacıbaşı Vitra and Kaleseramik, design budgets include design activities in different categories. On the other hand, Serel Seramik is observed to spare its budget completely to product design and development activities. Design activities in other fields such as web design, point of purchase design, and exhibition design are under the responsibility of the group's sales and marketing companies Elmor AŞ and Eleks AŞ, and are included in their marketing budgets. Still the budgets for these design categories are significantly less compared to budgets allocated to product design and development.

Design Processes:

Capabilities reviewed under this category are considerably developed in all companies. Yet Eczacıbaşı Vitra and Serel Seramik reveal slightly more advanced capabilities compared to Kaleseramik. This can be attributable to their long held focus on the development of in-house design capabilities in ceramic sanitary ware, in contrast to Kaleseramik's emphasis on the use of external design expertise.

Consequently, in Kaleseramik design processes are not as established as they are in the other companies. Although there is a clear and recognized process in place, there are problems with respect to its implementation and adherence to the defined design processes. Capabilities with regards to *Design Process Thinking, Methods and Tools* and *Design Evaluation Processes* are also more limited in Kaleseramik and Serel Seramik compared to Eczacıbaşı Vitra. This is again expected since among these companies Eczacıbaşı Vitra is the oldest and the first to have begun the development of design and design management capabilities. Therefore it reveals the most advanced skills in all capability items reviewed under the category of *Design Processes*.

Design Organization:

In this category, again Eczacıbaşı Vitra possesses more developed capabilities with respect to all items: *Design Management Responsibility*, *Design Skills* and *Organizing for Design*. It has an independent design department and an assigned management responsibility for design at the senior level. It also has the largest in-house design organization, composed of 20 designers specialized in different design disciplines from industrial design and graphic design to interior design and architecture. Additionally since a long time ago, the company has been carrying out a significant percentage of its design activities in ceramic sanitary ware through the use of external design expertise. All these factors have contributed to the development of advanced skills in organizing for design activities both in the context of in-house and outsourced design.

In Serel Seramik, the design department is also structured as an independent department since the beginning of 2000s. The organization has significant capabilities in organizing in-house design activities, and all product design and development is undertaken internally. However, the department strictly focuses on product design and development and does not include designers focusing on other design categories. Additionally, the design organization is structured with a noticeable emphasis on technical development and application phases of product design activities; these taking up considerable time and leaving less room for the more conceptual and creative phases. Although in total there are 20 employees under the department, only 5 of them are designers and the remaining consist of CNC operators, modelers, casting and molded production specialists. The management of design and design application activities are assigned to a senior level manager, who is also part of the company management board. This also facilitates an effective in-house design management system. However, the company has significantly weaker capabilities in organizing and managing design activities based on the use of external design expertise, which has only been undertaken rarely in the context of communication design activities, such as web or catalogue design.

In contrast, Kaleseramik has long been organizing its design activities based on the use of external designers, specifically in the context of ceramic sanitary ware. Consequently its capabilities in organizing and managing outsourced design are more progressed in comparison to capabilities in terms of in-house design activities. For industrial design activities, it has a very small in-house design team consisting of 4 employees, out of which 2 are assigned design management responsibilities at the

project level. Design activities for ceramic wall and floor tiles and bathroom furniture are mostly carried out in-house and for other product categories, design activities are organized through external design. Design activities in other categories such as web design, design of exhibition and retail environments, customer experience design are all carried out through the use of external designers, and organized and managed by marketing specialists. Currently, design staff and design managers are organized under the marketing department as a small module, giving marketing the ultimate authority in design. In the words of Cooper and Press (1995): “design is treated as a servant of marketing rather than a partner” (p. 228).

Research for Design:

Capabilities under this category are among the weakest capabilities compared with other capability categories in all companies, revealing that the organizations put the least effort in improving design research programs and resources or establishing information and idea networks for design. Eczacıbaşı Vitra and Kaleseramik reveal superior capabilities in this category compared to Serel Seramik. Still for the most part, research for design is not as structured as other design processes inside these organizations. At best, activities are largely limited to regular market research, subscriptions to design magazines and regular attendance to industrial fairs. Companies generally neglect user research, expansion of information and idea networks for design or carrying out collaborations with educational or research organizations.

Training and Development for Design:

In this category, Eczacıbaşı Vitra and Serel Seramik possess considerably more developed capabilities compared to Kaleseramik. Both Eczacıbaşı Vitra and Serel Seramik reveal organizational routines that emphasize training and development. They pay attention to continuous learning and development and organize regular training and development programs for all employees. Their emphasis on these subjects is also reflected on their approach towards the training and development of design staff. However, Kaleseramik is observed to neglect the issue of ensuring the continuity of training and development throughout the organization. Still, the company supports all training and development requests that come directly from its employees. As a result, the company does not have any regular or specialized training and development programs for design staff and reveal the weakest capabilities in the category of *Training and Development for Design*.

Design Integration:

With respect to capabilities under the category of Design Integration, Eczacıbaşı Vitra is followed by Kaleseramik and Serel Seramik. Its capability in terms of ensuring design's coordination and communication with other business functions, their strategies and processes is clearly more advanced than the other two companies. This is expected as the organization specifically focuses on aligning the strategies of major business functions throughout its strategy formation and business planning routines. Additionally, it has superior capabilities regarding establishing coherence and coordination between different areas of design, ensuring that design outcomes in different categories have a high degree of consistency. On the other hand, Kaleseramik reveals more advanced capabilities in the use of design in different categories; the breadth of design activities carried out is the widest in this company. In addition to more common activities carried out by all 3 companies (such as industrial design, graphic design, packaging design, interior design, retail environment design, and exhibition design) Kaleseramik also carries out design projects in the context of relatively less utilized design disciplines, such as customer experience design and interaction design. However, it needs to focus more on developing its capabilities in terms of establishing the coherence and coordination between different design categories. In this context, Serel Seramik reveals the weakest capabilities, where design outcomes in different fields are carried out in a detached manner, without an effective system or approach to monitor and improve their coherence.

Culture and Climate for Design:

Capabilities in this category are the most developed in Eczacıbaşı Vitra and Serel Seramik. Surprisingly, although Kaleseramik utilizes design in a wider range of areas compared to these companies, its culture and climate for design is relatively underdeveloped, especially in terms of design awareness and understanding of top management, and with respect to the generation of an environment for creativity. This is seen to be largely due to company's long-held reliance on external design, instead of choosing to focus on the development of in-house design capabilities. There seems to be a strong correlation between the establishment of an in-house design function and the development of a supportive organizational culture for design. Additionally, design initiatives are seen to be induced by the business group's top management based on a high level of design awareness and understanding. But this is not observed to penetrate effectively into the top management of the company. As a result, managers have a limited understanding

about what design actually involves and design is viewed by most managers as something that can always be acquired from the outside.

Overall, the cross case analysis reveals that although all these companies have significant capabilities in managing design, the level of maturity reached in design management capabilities vary among these organizations depending on factors such as business strategy, years of experience in managing design, existence of key individuals that support design, organizational place of design, preference for in-house versus outsourced design use, as well as prevailing organizational culture. Yet it is seen that among these factors, years of experience in carrying out and managing design activities appear as the strongest factor contributing to the maturity of design management capabilities.

Next section combines the findings of the cross case analysis with the discussions provided in sections 10.1, 10.2 and 10.3 to arrive at the major conclusions of the study.

10.5 Integration and Discussion of Main Findings Based on Cross Case Analysis

In Sections 10.1, 10.2 and 10.3, the discussions of individual case studies examined: progression of design management capabilities inside these organizations; current means utilized by the companies in linking design activities with company strategies; key enablers that influenced the development of strategic level design management capabilities; as well as key barriers and challenges that emerged as major road blocks throughout the process. On the other hand, the previous section provided a cross case analysis of design management capabilities possessed by these organizations. This section integrates the findings reviewed under these areas and discusses the major conclusions of the study under 5 main headings:

1. Relationship between design management maturity and experience in utilizing design
2. Triggers for the development of strategic level design management capabilities
3. Systems and routines utilized for linking design with company strategies
4. Major enablers in linking design with company strategy and the development of strategic level design management capabilities

5. Major barriers and challenges in linking design with company strategy and the development of strategic level design management capabilities

1. Relationship between design management maturity and experience in utilizing design

One major finding is that in most of the capability categories, the level of maturity attained in design management capabilities showed a significant relationship with the companies' amount of experience in managing design activities. Eczacıbaşı Vitra is the oldest company in the industry, having started the production of ceramic sanitary ware in 1958; followed respectively by Serel Seramik, which began manufacturing in 1980; and Kale Seramik which started its ceramic sanitary ware operations in 1993. Again Eczacıbaşı Vitra was the first to acquire design and design management capabilities, followed by Serel Seramik and Kale Seramik. This sequence was again followed in terms of the development of strategic level design management capabilities, as Eczacıbaşı Vitra was the first in the industry to recognize design's strategic importance and to begin integrating design more deeply into the company strategy, starting with 2004. It was followed by Serel Seramik, and Kale Seramik, which are seen to have started paying increased consideration to design at the level of business strategy almost 5 years later, towards the end of 2000s. Additionally, Eczacıbaşı Vitra currently possesses the most advanced capabilities in managing design and considerably superior to the other two companies. Whereas Kale Seramik and Serel Seramik on the overall revealed design management capabilities at a similar level, yet differing noticeably with respect to different capability categories.

Furthermore, the cross case analysis revealed that among many factors that have a bearing on the progression of design management capabilities, the factors of business strategy, existence of key individuals promoting design, amount of experience in carrying out design activities, organization of design and the prevailing organizational culture are seen to be the most influential dynamics affecting their development.

Although business strategy, strategic changes, and key individuals in top management promoting design were more dominant factors in triggering the acquisition of design management capabilities, and later in initiating efforts towards the development of strategic level capabilities in managing design, the level of maturity attained in design management capabilities were seen to be correlated more strongly with the amount of time and experience companies had in carrying

out design activities, the organization of design activities and dynamics influenced by organizational culture. Additionally, these latter factors are seen to be strongly correlated, that is: the development of a supportive organizational culture for design is observed to be closely interrelated with company's amount of experience in managing design, as well as the existence of an in-house design organization.

2. Triggers for the development of strategic level design management capabilities

Initially it is either internal and/or external factors that trigger the acquisition of design and design management capabilities. However the triggers for an increased integration of design into business strategy and subsequently the development of strategic level design management capabilities are internal and initiated in the context of major strategic renewal and organizational transformation processes.

Observing the progression of design and design management capabilities inside these 3 large scale organizations, it was seen that for 2 of them the factors that triggered the initial acquisition of design management capabilities were based on external circumstances. These were both related to the changing competitive forces in the industry, which necessitated the companies to increasingly turn towards product differentiation. Whereas, for the other company, the factors were completely internal and based on a corporate strategy and culture that strictly emphasized the development of core capabilities, especially those that are integral to product and technology development. As a result, the company focused on the acquisition and development of design and design management capabilities beginning from its founding years.

Inside these organizations, design management capabilities were initially developed at the operational level in the context of design project management and later at the tactical level of design organization management. For a long time, the companies managed design under the direction of marketing, product development or production departments and utilized design as a driver of their new product development process, with the objective of providing product differentiation inside a market environment which was becoming increasingly more competitive.

However, for all three cases, beginning after the mid 2000s, the companies began to develop a more strategic perspective regarding design and initiated a new period in the development of their design management capabilities. The factors that triggered the development of design management capabilities at the strategic level were all internal and strongly linked to major organizational change and strategic renewal processes, which were planned to be executed by the top management teams.

In every individual case, design was positioned by these organizations as the most important tool for the intended organizational transformation efforts that involved premeditated changes in several dimensions such as organizational structure, resources and capabilities, market focus and business growth mindset. The organizations felt the necessity to make a leap in their design management capabilities in order to achieve the new long-term goals they have set for themselves. For Eczacıbaşı Vitra, design was identified as the key instrument in the company's transfer to a brand development strategy with the long term objective of becoming a global brand. For Kaleseramik, the development of strategic level design management capabilities was a major route inside the strategic renewal and organizational restructuring processes regarding several group companies and to develop a unified approach to all product design and development activities. For Serel Seramik, design management capabilities at the strategic level began to be advanced after design was identified as the driving tool of its new business strategy, which involved a major change in market focus and organizational transformation and brand repositioning efforts following company's merger with another group company.

Another important observation is that all these organizations revealed significant differences in the progress realized in their strategic level design management capabilities, although their triggers were significantly parallel. Eczacıbaşı Vitra slowly but consistently improved its design management capabilities in different design categories to arrive at the generation of holistic customer experiences. Through its growing capabilities it managed to transform its products, communications, environments and experiences, at the same time transforming its processes, organizational structure and allowing design to increasingly infuse into all aspects of its business strategy and organizational culture. Serel Seramik also demonstrated consistent progress; however its focus remained closely confined to a single category of design use, namely the progression of capabilities regarding product design, without much development regarding design management skills in other areas. As a result it still lacks an integrated approach to design management, reveals a new product development centered design strategy, neglecting "the integration of, and uplifting standards in, all categories of design" (Topalian, 1990, p. 121), leading to an incomplete view regarding the scope of design management. On the other hand, Kaleseramik's progression regarding design management capabilities was comparably more intermittent in nature with significant leaps followed by backward steps.

3. Systems and routines utilized for linking design with company strategies

The existing means, systems and routines utilized by the companies to link their design efforts with company strategies were already discussed in detail under individual case study discussions (sections 10.1.2, 10.2.2 and 10.3.2). These systems were seen to present a high degree of similarity in all companies. As a result, these systems and routines were integrated under 3 major themes. Table 10.2 gives a summary of these systems and reveals the 3 integrated themes. In the table, each different shade of color represents an individual theme, while the lightly shaded cells indicate that the system or routine is observed in a slightly different or indirect way in the particular organization. On the other hand, a non-shaded cell signifies that the system is present only in the respective organization.

Table 10.2 : Systems and routines utilized in linking design with strategy.

Eczacıbaşı Vitra	Kaleseramik	Serel Seramik	Integration
Existence of a formal responsibility for design management at the senior level directly under the general manager	Assignment of management responsibility for design at middle and lower level management, under the marketing department	Existence of a formal responsibility for design management at the senior level directly under the general manager	Assignment of management responsibility for design at the senior level
Design manager being a major partaker inside strategy formulation and business planning processes	Integration of design into marketing strategy and design managers contributing to marketing strategy formulation	Design manager being a major partaker inside strategy formulation and business planning processes	Inclusion of design managers in strategy formulation and business planning processes
An independent design department in equal status with more established business departments	Establishment of design policy, guidelines and standards	An independent design department in equal status with more established business departments	Establishment of an independent design function

It must be underlined that although Kaleseramik differs from the other two organizations regarding the current picture, it was seen to utilize the exact same systems with the other two organizations between 2011 and 2013 (see Chapter 8); later having to abandon these due to organizational barriers that were previously deliberated.

To summarize, the companies utilize 3 main routes to connect design strategies and activities with their business strategy:

- Assignment of management responsibility for design at the senior level
- Inclusion of design managers in strategy formulation and business planning processes
- Establishment of an independent design function

The assignment of management responsibility for design at the senior level contributes to the coordination of design with overall business strategy and content by clearly granting executive responsibility for design to a manager who has direct information and understanding about the long-term outlook, business context and priorities of the organization. In other words it moves design management from “the assignment of the normal administrative chores to a manager” to “identifying and communicating ways that design can contribute strategic value to a company” (Blaich & Blaich, 1993, p. 13).

The inclusion of design managers in strategy formulation and business planning processes ensures design's contribution to strategy making, as well as allowing the design manager to have detailed knowledge and understanding about business strategies, as well as policies and plans of major business functions. This in turn facilitates the identification of different roles for design throughout the organization. On the other hand, the establishment of an independent design function ensures that design is considered in strategy formulation and business planning processes in a distinct manner and treated in the same status with other major business departments such as marketing, production or sales.

Overall these findings confirm the previous work in design management literature, underlining: the importance of assigning design management responsibilities to a senior level manager (Topalian, 1990), the increasing role of design and design managers inside strategy formulation processes (Chung & Kim, 2011; Francis, 2002; Hertenstein & Platt, 1997; Jerrard & Hands, 2008) and the direct relationship between design's influence and strategic role with its degree of independence in the corporate structure (Borja de Mozota, 2003b).

4. Major enablers in linking design with company strategy and the development of strategic level design management capabilities

The major factors that have supported the development of strategic level design management capabilities and the establishment of an increased level of integration between design activities and strategy show substantial similarity in the studied organizations. Table 10.3 gives a summary of these factors and integrates them under 4 major themes.

In the table, each different shade of color represents an individual theme, while the lightly shaded cells indicate that the factor is observed in a slightly different or indirect way in the particular organization. Alternatively, a non-shaded cell signifies

that the system is observed only in the respective organization; therefore it cannot be included under an integrated theme.

Table 10.3 : Major enablers in the development of strategic level design management capabilities.

Eczacıbaşı Vitra	Kaleseramik	Serel Seramik	Integration
Identification of design as a major tool to achieve a long-term strategic objective /a perceived business opportunity	Identification of design as a major tool to achieve a long-term strategic objective /a perceived business opportunity	Identification of design as a major tool to achieve a long-term strategic objective/a perceived business opportunity	Design's recognition as a strategic tool
Top management awareness, support and commitment	Endorsement coming from the business group's top management	Top management awareness, support and commitment	Top management awareness, support and commitment
A deliberate focus on achieving alignment between design strategy and the strategies of major business functions	Organization of design programs directed at achieving strategy alignment, coordination and commitment	A deliberate focus on increasing communication and coordination among departmental managers	Strategy alignment, coordination and communication between design and major departmental functions
Focus on the cultivation of a design oriented organizational culture	Focus on the cultivation of a design oriented organizational culture	A supportive organizational culture for design due to a long-established in-house design function	Cultivation of a supportive organizational culture for design
	Previous assignment of a formal responsibility for the management of design at the senior level		

In brief, the study revealed 4 main factors that have supported the development of strategic level design management capabilities. These are:

- Design's recognition as a strategic tool
- Top management awareness, support and commitment
- Strategy alignment, coordination and communication between design and major departmental functions
- Cultivation of a supportive organizational culture for design

Design's recognition as a strategic tool in the wider context of significant organizational transformation and strategic renewal processes acted as the initial trigger and major enabler for all companies. Another important facilitator was the awareness, support and commitment coming from top management, which has long been pointed out by design management literature among the most essential factors concerning the effectiveness of design integration efforts (Topalian, 1990). Again, the other two factors, strategy alignment, coordination and communication between

design and major departmental functions (Borja de Mozota, 2003b; Cooper & Press, 1995; Jerrard & Hands, 2008), and the cultivation of a supportive organizational culture for design (Borja de Mozota, 2003b; Jenkins, 2010; Lockwood, 2010; Walsh et al., 1992) are consistently identified by scholars as decisive means of ensuring higher levels of design integration inside organizations.

5. Major barriers and challenges in linking design with company strategy and the development of strategic level design management capabilities

Although the current systems and routines utilized by the companies to link design with strategy as well as the major enablers in the overall process were substantially similar, major barriers and challenges faced by the organizations (Table 10.4) showed greater variance from one organization to the other.

Table 10.4 : Major barriers and challenges in the development of strategic level design management capabilities.

Eczacıbaşı Vitra	Kaleseramik	Serel Seramik	Integration
Finding the optimal organizational structure for managing design activities	Finding the optimal organizational structure for managing design activities	Underdeveloped capabilities in managing design activities in areas other than product design	Finding the organizational place of design
Assignment of strategic level design management responsibilities	Assignment of strategic level design management responsibilities	Underdeveloped marketing capabilities	Assignment of strategic level design management responsibilities
Institutional inertia, corporate pragmatism and tradition-bound behavior	Management routines based on efficiency, cost-cutting, and seeing fast results	High level of contact between design and production inside an organizational culture based on prioritizing engineering and manufacturing capabilities	Underdeveloped organizational capabilities regarding marketing
	Underdeveloped culture for design	Strong culture and rigid routines of the business group enforcing a high level of dependence on group's other organizations	Characteristics of organizational culture antagonistic to design (cost-cutting, short-termism, power sharing, lack of openness to change and creativity)
	Problems regarding power-sharing and company politics	Lack of an integrated approach to design management due to the management of design activities in different fields by several companies under the business group	
	Difficulties with respect to ensuring the continuity of top-down initiatives		

Still, they demonstrate a fair degree of correspondence to be integrated under 4 overarching themes, which are summarized in Table 10.4. In the table, different shades of color refer to separate themes, whereas a non-shaded cell denotes that the incident does not find correspondence in other organizations.

To sum up, there were 4 major areas that presented considerable challenges to these organizations throughout the development of their strategic level skills in managing design. These are:

- Finding the organizational place of design
- Assignment of strategic level design management responsibilities
- Underdeveloped organizational capabilities regarding marketing
- Characteristics of organizational culture that are antagonistic to design

10.6 Discussion of the Design Management Audit Framework

This section discusses the *Design Management Audit Framework*, as a tool to evaluate design management capabilities of organizations, based on the experience gathered while implementing the tool in 3 large scale organizations as part of a case study research methodology.

In the theoretical phase of this thesis, a new tool named *Design Management Audit Framework* was developed based on an extensive review of design management literature, a detailed analysis of existing design and design management audit tools, as well as classifications provided by various scholars on responsibilities, capabilities and skills that are central to managing design. The new tool takes the Design Atlas (Design Council, 1999) audit tool as its underlying model and expands it to include other capabilities that are identified as critical for the effectiveness of design management practices. Its major objectives were to integrate and update existing models in the light of evolving design management literature, and more importantly to better accommodate capabilities that focus on the integration of design with organizational objectives and strategy, and the increasing role of design management in contributing to strategy formation processes.

During the research phase, the audit tool demonstrated to be an effective instrument to guide an in-depth analysis of design and design management capabilities inside organizational contexts. It provided a comprehensive basis for evaluating how design activities are managed, allowing the analysis to begin from company's business strategy, strategy formulation and business planning routines; move to the

position of design inside business strategy, and later progress towards more organizational and operational level capabilities, such as organization for design, culture and climate for design and design processes carried out inside the organization. In this sense, it was found to comply with characteristics suggested by design management scholars regarding design audits, such as Topalian's approach indicating that corporate design audits should "denote the formal and comprehensive examination of what goes on design wise within industrial and commercial organizations" (as cited in Cooper & Press, 1995, p. 203); or Jerrard and Hand's (2008) characterization of the audit process as "reflect[ing] the nature of the activity" (p. 21). But more importantly, besides providing a broad picture about design and design management practices, it presented the means to understand the thinking and systems involved in aligning design with company strategies, the extent of design integration throughout the organization, as well as organization's approach towards research, training and learning for design, which are significant areas that are largely left out in existing design and design management audit tools. However taking into account the experiences gained while carrying out the audit, as well as during the analysis of case studies and cross-case comparisons that were based on the audit tool, several important issues were identified.

Firstly, the audit tool was not employed as a result of a demand coming from the organizations for carrying out a design management audit in order to identify areas of self improvement or change. Yet this is mostly the route through which audit processes take place in organizations. Instead, the audit was employed as a research tool by the author of this thesis, who contacted the companies as a graduate researcher studying design management capabilities in the Turkish ceramic sanitary ware sector. Unsurprisingly, confidentiality was a major concern on the part of all participants, which was generally observed to increase in relation to a higher position in the management hierarchy. Although the challenges faced due to concerns for confidentiality were mostly overcome by consulting secondary resources, asking the same questions to other interviewees, or by reframing the questions to eliminate or relieve concerns, it emerged as an important drawback when the answers to certain questions were demanded to be supported by documents such as design plans, briefing documents or process maps. In such cases, where the interviewees could not provide these documents due to confidentiality reasons, their statement regarding their existence was taken as evidence. As a result, the application of the audit framework as a research tool at times becomes complicated due to confidentiality reasons. Therefore, it is believed

that the tool can be applied more effectively if it is demanded by the organizations themselves, in relation to specific objectives such as identifying areas for improvement, shaping and directing change inside the organization or monitoring the implementation of design strategy.

Secondly, the audit tool is complemented by an assessment scale, which was developed based on a process maturity principle, with 4 different levels of process maturity taken as the scale of measurement. The choice of 4 levels was made based on the observation that the 4 level maturity scale has become widely utilized in several models that are devised to evaluate companies' design or design management capability, such as the Design Management Staircase (Kootstra, 2009), the Design Ladder (DDC, 2001) and the rating scale used in the Design Atlas (Design Council, 1999) audit tool. However, during the assessment of audit findings and the conduction of cross case analysis, a 4 level scale was occasionally found inadequate to provide a precise differentiation between companies. For example, in some items, although the companies were assessed at the same level taking into account the anchor descriptions provided for each level, there was actually an identifiable difference between their capabilities. This problem mostly appeared for capability level 3, suggesting that the rating scale would be more effective if there was an additional level between level 3 and 4, bringing into mind a 5 level scale. Consequently, it is believed that a 4 level assessment scale is useful for providing a broad categorization, but requires additional differentiation to provide a more precise assessment, especially if the audit tool is to be used for a comparative analysis.

Thirdly, some items of the *Design Management Audit Framework* were identified to be more challenging to evaluate due to being more difficult to observe. Especially, the 4 items grouped under the category of *Culture and Climate for Design*, which are *Design Awareness and Understanding of Senior Management*, *Design Commitment of Senior Management*, *Design Attitudes of Employees* and *Environment for Creativity*, are difficult to assess, since different from the other items, they are about attitudes, thoughts and culture existing inside the organization. While questions regarding other items of the audit tool (for example *Design Planning*, *Design Research Programs and Resources* or *Design's Input to Strategy Formulation*) can be answered together with referrals to certain documents, routines or systems that allow for a higher level of objectivity in terms of evaluation, the items under the category of *Culture and Climate for Design* do not easily and only to some extent reveal themselves in physical evidences, documents or artifacts. Consequently, they involve a higher degree of bias and variability depending on the opinions of

individual interviewees. As this was anticipated before the start of the audit process, a questionnaire was designed specifically covering these items to be conducted throughout the audited organizations, with the intention to support a more objective evaluation. However, with one exception, the questionnaire could not be carried out due to companies' refusal to cooperate in an organization wide survey research. Still, it is believed that the audit tool will generate more effective results if it can be supplemented by a more pervasive research methodology regarding the items under the capability category *Culture and Climate for Design*.





11. CONCLUSIONS

To bring the thesis to closure, this chapter overviews the overall contributions of the study in the light of its findings, discussions and the reviewed theory. This is presented in two parts, firstly through a review of the study's theoretical contributions to knowledge, and then through an appraisal of its practical contributions. Later, the chapter deliberates on the limitations of the study and closes with a consideration of possible directions for future research.

11.1 Contributions to knowledge

This thesis examined design management capabilities as essential capabilities for organizations to connect their design efforts with their business strategies, within the specific context of the Turkish ceramic sanitary ware industry. In line with the evolving design management literature, the emphasis of the study was placed more on the strategic level capabilities in managing design, as well as how these capabilities evolved in the context of the studied organizations.

The research was undertaken through 2 main phases. In the initial theoretical phase, existing literature in design, design management and strategic management was reviewed and synthesized to come up with a comprehensive design management audit framework to be used for a detailed examination and assessment of an organization's design management capabilities. On the other hand, in the second, empirical phase, the developed framework was embedded inside a case study research strategy, and was utilized to examine design management capabilities in 3 large scale organizations from the Turkish ceramic sanitary sector, and to understand how and to what extent their existing design management capabilities facilitated the connection between design efforts and business strategies.

Therefore, the present study provides three major contributions to knowledge. One is the development of a new, integrative model named "*Contributions of Design Inside and Organizational Context*" which brings together the wide-ranging roles of design inside organizational contexts. The second contribution is the development of an updated and comprehensive *Design Management Audit Framework* to be used

by design practitioners, design managers, organizations and researchers to assess design management capabilities residing inside organizations. The third is the characterization of present design management capabilities possessed by the three major players of the Turkish ceramic sanitary ware industry, how they developed design management capabilities relating to the strategic level, and specific enablers and barriers influencing their development. These particular contributions will be reviewed in detail in the following sections.

11.1.1 An integrative model: *Contributions of Design Inside an Organizational Context*

In order to situate various roles of design inside an organizational context and to understand how design can function as a strategic resource for businesses, a broad review of literature was carried out within the design, design management and strategic management literature.

It is observed that contributions of design in a business context are usually discussed under "design as a strategic resource" discourse with many roles for design, ranging from differentiation of products and services, creation of customer satisfaction and loyalty, increasing the efficiency of new product development and speed to market, to being a driver in innovation processes, contributing to organizational change and renewal, and having an increasingly important role in strategy formulation, to name some. However it was seen that this discussion lacks an integrative framework to understand and structure the wide ranging roles of design inside businesses.

Therefore, the model "*Contributions of Design Inside an Organizational Context*" integrates the reviewed literature, and presents a comprehensive picture about how design can be linked to different business objectives and strategies and can become a strategic resource for the organization. To the best of the author's knowledge, this is the first work to bring together such diverse roles and contributions of design inside an integrative model, which includes both the more visible and recognized roles for design, such as its role in adding value to products, services and environments and in influencing customer response; and its harder to distinguish and less recognized roles, such as its role in improving business performance, its role in organizational learning, change and development, the development of corporate culture and its more recently underlined roles in strategy and strategic management processes.

11.1.2 A new design management audit tool: *Design Management Audit Framework*

Throughout the years, the scope of design management field expanded significantly. Especially in the last two decades, we can observe that design management has evolved from being discussed solely in the context of products and services to being considered more holistically, in the overall context of design's relation to business objectives, strategy and strategic management processes in organizations. Alongside these developments, many scholars have revealed that the influence of design management has been moving towards the strategic decision making processes inside businesses (Chung and Kim, 2011; Cooper et al. 2011; Francis, 2002; Hertenstein and Platt, 1997). Strategic level responsibilities under design management are increasingly coming to the fore as the most critical and necessary steps that must be effectively carried out, prior to the administration of design resources, projects or processes.

In this respect, the author of the thesis identified an important gap in existing tools and frameworks that have been developed to audit and assess design management capabilities inside organizations. Despite design management's broadened roles and responsibilities, existing tools and frameworks were lacking to frame and evaluate design management capabilities that enable this essential connection to be made between an organization's goals, its business strategy and its design practices. Additionally, a more detailed review of literature suggested that it would be valuable to expand and update current frameworks in the light of new perspectives and research that have emerged over the last decade.

Therefore, the initial contribution of the *Design Management Audit Framework* is to provide a comprehensive design management audit tool that allows not only the examination of more traditional capabilities and responsibilities under design management, but also the appraisal of strategic level design management capabilities, which put emphasis on the alignment of design practices with corporate strategy and organizational goals. This framework is suggested as an audit tool for design management that acknowledges the importance of attaining a strong integration between design and organizational objectives and strategy, as well as the increasing role of design in contributing to strategy formation processes. In this manner, the framework recognizes the evolving design management literature and integrates its recent perspectives into a tool, specifically developed to review and assess design management capabilities.

A second contribution of the *Design Management Audit Framework* to knowledge is its conceptualization of *design integration* as another major capability category for design management. Even though integrating design throughout the organization and achieving increased integration between design and other business processes are highlighted in literature among the most important success factors for design management, these capabilities are not embraced by existing tools. Yet the developed framework includes this dimension as a major capability in managing design.

A third contribution of the framework is the inclusion of other significant capabilities that were identified based on a synthesis of design management and strategic management literature, and which have been omitted in existing tools and frameworks. Today, knowledge creation, integration of outside knowledge and organizational learning emerge as extremely critical capabilities for businesses in the generation of competitive advantages. In this respect, *Design Management Audit Framework* establishes a connection between design management and integral streams of literature inside the strategic management field, such as the knowledge based perspective, dynamic capabilities and the literature on organizational learning. It conceptualizes design management as the administration of design as a learning process; a fundamental capability for organizational knowledge creation (Nonaka and Takeuchi, 1995); and a dynamic capability (Teece et al., 1997) that renews and reconfigures design capabilities, "regenerating both the products and the company" (Borja de Mozota, 2003b, p. 160). As a result, the framework incorporates 2 main capability categories: *Research for Design* and *Training and Development for Design*; the first to accommodate how outside knowledge is acquired and integrated in the context of design, and the second to understand how design and design management capabilities are advanced and renewed inside organizations in the larger context of organizational learning capabilities.

On the whole, *Design Management Audit Framework* provides a major update to existing tools and frameworks by accommodating key responsibilities and skills that are increasingly underlined by design management literature and which are finding their counterparts in emerging design management practices.

11.1.3 Findings of the empirical research

Another major gap identified by the author of the thesis within the design management field was regarding our knowledge about design management

practices, and more specifically about strategic design management, in actual business contexts. When it comes to the reality of organizations, our understanding is limited about how design is actually being managed, and even more so about how organizations actually link their design activities to the wider business environment, corporate objectives and business strategy through their design management systems and practices. Additionally, although these issues have occasionally been explored in the context of businesses from developed economies, they have rarely been analyzed in the background of newly industrialized countries.

Consequently, at first sight, the case studies conducted in the empirical phase of the thesis particularly add to our understanding about design management systems, routines and capabilities in businesses from a newly industrialized economy, by providing an in-depth portrayal of design management practices of 3 large scale organizations.

But more importantly, the research results contribute to the literature on strategic design management, with respect to the development of strategic level capabilities in managing design, in the particular context of a newly industrialized country. These organizations constitute 3 major players of the Turkish ceramic sanitary ware industry, both in terms of production capacity and market share, which have begun integrating design more strongly into their business strategies and which have initiated a process of development in their strategic level design management capabilities beginning after the mid 2000s. As a result, the study expands our understanding regarding the nature and extent of strategic design capabilities in the Turkish ceramic sanitary ware sector and how these capabilities were developed over time. Moreover, the study increases knowledge on the interface between design management and strategic management, as well as about the barriers and problems faced by businesses in the process of becoming a more design-oriented organization. It also provides important insights on the triggers, factors and dynamics that play a supportive role in building organizational capabilities for design's strategic use.

Another significant contribution is to reveal how design and design management is used by these businesses in the context of major strategic renewal and organizational transformation processes. With this opening, the study validates and contributes to the more recent literature pointing to the role of design in driving organizational change and strategic renewal; and promoting and supporting shifts in the strategic course of businesses (Borja de Mozota, 2003b; Buchanan, 2008; Deserti & Rizzo, 2013; Ravasi & Lojacano, 2005)

Finally, the study is also valuable in the context of brand management literature, as it indicates that these businesses initiated the development of strategic level capabilities in managing design to assist the organizations in their brand development and brand repositioning strategies.

11.2 Contributions to Practice

The following subsections deliberate on the practical value of the three major theoretical contributions of the thesis.

11.2.1 An integrative model: *Contributions of Design Inside an Organizational Context*

The model “*Contributions of Design Inside an Organizational Context*” integrates the extensive roles that design can take on inside a business, and establishes a connection between design and important business functions, as well as processes taking place inside organizations. Therefore the model can be used in business practice as a means to expand understanding about how design can be employed in relation to different business goals, objectives and processes and can work as a tool to increase knowledge about the relationship between design, organization and business strategy. Managers as well as design consultants can use the model as a guide, in order to reflect on, define and plan new roles for design inside a business.

11.2.2 A new design management audit tool: *Design Management Audit Framework*

Design Management Audit Framework has major practical contributions since design management audits are already utilized in business practice as important tools to review existing capabilities and to identify areas of improvement for the organization. Yet with its more comprehensive scope, *Design Management Audit Framework* provides major improvements to existing tools and frameworks by allowing capabilities that are highly critical but that are largely omitted in existing tools to be considered and assessed, such as strategic level capabilities, design integration capabilities, training and learning capabilities for design and research capabilities for design. It provides a methodical approach to examine and discuss how the organization handles design management, allowing the examination to start with capabilities that focus on the alignment between design practices and business strategies, which have long been underlined by design management literature as the starting point for developing an effective design management approach.

Many parties can benefit from the *Design Management Audit Framework* such as design managers and design leaders inside organizations; design consultants from agencies, design consultancy studios or design support programmes; as well as any specialist inside an organization, who is assigned with responsibilities concerning design management (such as a marketing manager or a product development manager). The tool can be employed by these parties to understand and improve design management processes, to advise and guide changes to design management systems, to identify how design management can support the business strategy more effectively, to monitor the implementation of design programs and policies, or as a tool to track improvement.

It can also be utilized as a research tool in the context of design policy making and design support programmes, in order to identify design management capabilities inside industrial or national contexts and to use the findings to support strategy formulation, decision making and policy formation.

In addition to its use as an audit tool, the framework can also be utilized by practitioners as a guiding framework in order to reflect, structure and plan design management processes and systems for their organizations, both in the context of their initial establishment or for the improvement of existing systems and routines. In such a situation, it can also function as tool to familiarize other specialists inside the organization with design management concepts, responsibilities and processes.

11.2.3 Findings of the empirical research

As have been indicated in the introductory chapter as well as in chapter 2, both theoretical and empirical research suggest design's strategic role in improving the competitiveness of firms, nations and economies through its wide ranging contributions such as differentiating products, increasing brand image and brand value, enhancing economic performance and driving product innovation to name a few. Therefore effective design management and strategic design are significant capabilities for companies of all sizes and industries in the creation of sustainable competitive advantages.

Additionally, ceramic sanitary ware sector has a special place for the Turkish economy as it is one of the most powerful industries with respect to its value added and its contributions to the national economy. Since Turkey is among top five global exporters of ceramic sanitary ware with exports amounting to 44% of total production, ceramic sanitary ware sector has a significant place in national industrial development strategies (T.C. Bilim Sanayi ve Teknoloji Bakanlığı, 2013). Given the

design oriented nature of the sector, design, new product development and innovation are extremely critical factors that play a paramount role in increasing the value added to these products and hence in the competitiveness of the sector as a whole. These characteristics render design management capabilities even more critical in the context of the Turkish ceramic sanitary ware industry.

Consequently, a major contribution of the research is adding to industry specific knowledge on the process of forming a strategic perspective to design in top performers of the industry, and portraying current means of managing design in alignment with business strategies, as well as revealing key enablers and barriers in the process of developing strategic level design management capabilities.

The results of the empirical research, specifically the findings and insights suggested through multiple case studies concerning design management and strategic design capabilities can be of critical interest and guidance to other ceramic sanitary ware producers of the sector that aspire to increase their competitiveness by improving their design management capabilities. The research can guide these businesses in the process of adopting a strategic stance to design and coordinating design efforts in an integrated approach with their corporate strategies.

Additionally, by a better understanding about how organizational capabilities can be developed to employ design strategically, as well as major enablers and barriers in this process, not only firms from the ceramic sanitary sector, but also firms from other industries can gain insights regarding the management of design resources as part of the strategic management of the company.

11.3 Limitations of the Research

As with all research studies, this study also has its limitations. These are discussed under 3 main headings:

- Limitations regarding case study research strategy
- Limitations regarding confidentiality
- Limitations regarding homogeneity of the sample

11.3.1 Limitations regarding case study research strategy

One major limitation is related to the selection of case study as the research strategy. Despite its major advantages in providing rich, context sensitive data, findings generated through case study research have well-recognized limits regarding the generalizability of the results. Because case studies require in-depth

investigations from multiple data sources, they are highly time and labor intensive during both data collection and data analysis. This makes large samples infeasible for cases study strategy, compromising the statistical generalizability of the results. The advantages and shortcomings of different research strategies were weighed with respect to the goals of the study and the trade-offs were already detailed in Chapter 6, together with the rationale of choosing case study approach. The shortcomings of case studies were also described in section 6.3. However, as a last word, although statistical generalizability is not possible in case studies and is a major limitation of this research, case studies are “generalizable to theoretical propositions” (Yin, 2009, p. 15), their major role being expanding on and generalizing to theories.

Another common criticism regarding case study research is the lack of systematic rules and definite procedures to guide data analysis, making them prone to lack of rigor and researcher bias to influence the findings. In this study, these important shortcomings in terms of lack of rigor and researcher bias was strived to be opposed through the prior development of a comprehensive analytical framework, which also included an assessment framework (*Design Management Audit Framework*) to guide and systematize both the data collection and analysis.

In the context of case study research, an additional limitation can arise from interviews, as they form one of the major data collection methods, which was also the primary method used in this study. Subjective statements from respondents are prone to several distortions, which can arise out of the style and approach of the interviewer, or the position, personality and concerns of the interviewee. These possible drawbacks of interview bias were tried to be countered through triangulating the data through multiple respondents as well as through multiple sources of evidence, which is explained in detail in section 6.5 under data collection techniques.

11.3.2 Limitations regarding confidentiality

Another limitation of the study arises from issues of confidentiality. As for research conducted inside industrial and business settings, gaining access to information becomes more difficult due to increased confidentiality concerns. Since the cases studied in this research are the major players of the ceramic sanitary ware industry, concerns of confidentiality were intrinsic limitations during data collection. Several measures were taken to reduce its effects on the research findings, such as offering not to share company names, ensuring the secrecy of interviewee names as well as

information they specified as confidential; sending interview transcripts for approval; referring to other informants about issues where confidentiality concerns were detected; consulting secondary sources for extended information; seeking information through field observations regarding work environments, products, outputs of other design activities, as well as observations through publicly available sources. Some of these procedures were also carried out for triangulation purposes. Still, it is acknowledged that worries regarding confidentiality restricted the research process.

11.3.3 Limitations regarding homogeneity of the sample

Another limitation of the present study that must be recognized is the homogeneity of the cases. The research was based on an industry specific context. Due to the study's added focus on strategic level design management capabilities, ceramic sanitary ware industry was discerned as providing more information rich cases to explore design management capabilities at the strategic level. The particular reasons for this choice were explained in section 6.4.1 prior to detailing the selection of cases. Additionally, the cases were selected based on predefined criteria to differentiate companies that revealed indications for using design in a more strategic manner in connection with their business strategies (see chapter 6.4.1 for selection criteria). Yet, this resulted in an increased level of homogeneity as the cases selected were all large scale manufacturers. However, it is acknowledged that these conditions regarding sector and company size limits the applicability of the results, necessitating further research to understand their transferability to other industries as well as to businesses of smaller size, in other words, SMEs. Besides industry specific or company size specific differences, another variation in the findings can result from differences due to national contexts, which limits the study results to the Turkish industry.

11.4 Future Research Directions

Considering the results of the study and the reviewed limitations, several directions for future research can be suggested. These can be grouped under two major paths.

11.4.1 Validation and development of the *Design Management Audit Framework*

One major route for future research is focusing on the further validation of the proposed *Design Management Audit Framework*. Research in this route can

concentrate on examining its applicability and use in different research settings, i.e., in businesses of different sizes, industries or nations. Specifically, exploring the applicability of the framework in SMEs can be valuable, as these businesses are known to have less structured strategies and strategic management processes. This characteristic is expected to affect their design management practices at the strategic level; thus, research in this context can generate new insights about how the framework works in businesses with less defined business strategies.

Again, another path of research can seek to examine the practical value of the framework as a business tool to support design management practices. This line can also try to understand its practical use from the perspective of different parties, such as design managers, design leaders, design consultants or strategic management teams.

A third option can be focusing on the further development of the framework. This can be based on involving design practitioners and scholars in the process, for example, by asking for their feedback and ratings regarding its usefulness, comprehensiveness, major dimensions included in the framework and the assessment scale.

11.4.2 Validation and extension of the empirical results

The second major avenue for further research concerns the validation of the present study's empirical results. Moving on from the aforementioned limitations of the present study, research in this direction can investigate strategic level design management capabilities in the context of other industries or in the context of SMEs. This line can seek to observe systems and routines established for ensuring an effective connection between design and business strategy, as well as major triggers, enablers and barriers for the development of these capabilities. Research in this direction can allow for comparisons to be made based on industry and company size.

Another possible direction for future research can be investigating whether the study findings are transferable to businesses from other countries, or whether the national context has major effects on strategic level design management capabilities and on the enablers and barriers for their advancement. Also, this second line can specifically endeavor for providing a comparison between businesses from developed versus newly industrialized countries.



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APPENDICES

- APPENDIX A:** Design Management Audit Framework and Assessment Scale
- APPENDIX B:** Interview Questions Regarding the Development of Design and Design Management Capabilities throughout the Years
- APPENDIX C:** Interview Protocol



APPENDIX A: Design Management Audit Framework and Assessment Scale

Table A.1 : Design Management Audit Framework.

	KEY CAPABILITIES	MAJOR QUESTIONS	DETAILS	EVIDENCE THAT MIGHT BE LOOKED FOR
1. DESIGN IN STRATEGY	Strategy Formulation Process	How effective is the business in strategy formulation? How are strategies formulated in the organization?	How is it done? Who participates? Time horizons? How is it updated? Which methods/analysis/sources of information are used to inform this process?	Strategy meetings, methods used in strategy formulation, methods for the analysis of internal and external factors, consultancy services, business plans
	Strategic (Business) Planning Process	How effective is the business in planning its activities? Are strategies turned into business plans? How is the planning process carried out?	Is business planning an organization-wide approach?	Business plans, business planning procedural documents
	Strategy and Planning Communication	Are business strategies, goals and plans communicated effectively within the organization?	What is the strategy communication process? What are the existing communication channels (meetings, intranet, newsletters, mailing, websites) and how effective are they in communicating strategic direction?	Internal strategy communication routes and processes: meetings, intranet, procedures of communication, announcements, asking staff about company strategy
	Design in Strategy	Is design included in strategy formulation? How is design positioned inside business strategy and objectives? Is there a defined design strategy?	Does strategy mention the role of design in strategic development? Is it used to deliver specific business objectives (such as the development of new markets, growth of market share, branding, sustainability, CSR)? Are there strategies and plans for design's future role? Are there corporate design objectives? Which design areas are included in strategy - products, communications, environments?	Design strategy documents, design activities carried out in accordance with design strategy
	Design's Input to Strategy Formulation	Is there any form of design/designer/design thinking input in the strategy formulation process? Do design managers or designers contribute to the shaping of business strategy and objectives?	Are design managers and designers invited to strategy meetings? Do they inform strategy formulation with their perspectives, as well as trends, opportunities, ideas? Do they contribute to the formation of design objectives? Are design thinking, design skills or design leadership utilized in strategy formulation to envision future strategic options, future business possibilities?	Design managers' and designers' participation in strategy formation and planning process

Table A.1 (continued) : Design Management Audit Framework.

	KEY CAPABILITIES	MAJOR QUESTIONS	DETAILS	EVIDENCE THAT MIGHT BE LOOKED FOR
2. PLANNING FOR DESIGN	Design Planning	Does the business carry out design planning? If yes, how is this done; what types of evaluation and objectives guide design planning process?	Is there design planning based on an analysis of existing products, market, competitors, customers? If yes, what type of tools are used to aid this analysis? (trend research, portfolio analysis, user centered research, etc.)	Time and project plans for design activities
	Design Planning Horizons	How far into the future does the organization think when planning for design?	Does the organization consider and plan for future design activities, investments, future role of design in different design domains?	Planning horizons revealed inside design plans
	Design Policy and Standards	Is there a formal/established corporate design policy or major notions that guide design? Are there defined design performance standards?	Is there a corporate identity manual, design standards manual?	Corporate design manual, written documents on design policy
3. INVESTMENTS FOR DESIGN	General Budget Allocation	Does the business carry out its budget allocation in a structured manner?	How are investment decisions made and how are they evaluated? How does resource allocation take place? Financial planning, evaluation of potential returns and risks?	Budget allocation documents, financial planning documents
	Design Budget Allocation	Does the business allocate budgets to design activity? If yes how are decisions regarding design budgets made? Does the business utilize any methods to guide design budget allocation decisions?	Are budgets allocated to design in a structured manner? Are investments made in different design areas, physical resources (hardware and software)? How are design investment decisions evaluated?	Design budget documents

Table A.1 (continued) : Design Management Audit Framework.

	KEY CAPABILITIES	MAJOR QUESTIONS	DETAILS	EVIDENCE THAT MIGHT BE LOOKED FOR
4. DESIGN PROCESSES	General Process Awareness	Does the business identify its activities as processes?	Is there any evidence of business describing its activities as processes? Which activities are identified as processes? Any process maps and charts?	Process maps & charts, process documents
	Design Process Awareness	Are design processes recognized/defined inside the organization and in connection with other processes? ex: design in NPD, marketing, corporate communications	Are there any recognized/defined design processes in the business? Either on their own or as part of other major processes such as NPD or branding?	Design process charts, design process documents, guides
	Design Process Management	Does the business have structured processes for design project management and monitoring? (Time plans, review meetings, documentation, brief formats, cost monitoring)	Are there clear design briefs at the beginning of projects? How are design projects monitored and reviewed? How are time, resources and costs monitored?	Time plans, review meetings, documentation, brief formats, cost monitoring
	Design Process Thinking, Methods & Tools	How do design projects/activities proceed? Are structured methods, techniques and tools utilized during design processes? (Research, Concept generation, Design development, decision making tools, evaluation of concepts)	Which methods and tools are utilized during design activities? (Research, brainstorming, mood boards, CAD tools, prototyping, etc.) Is there a clear design process methodology that is followed?	Design methods, research activities, mood boards, concepts, CAD tools, prototyping
	Legal Processes for Design	Does the business ensure the legal protection of design based intellectual rights? How is this process managed?	Are there defined processes for the registration of intellectual property rights? Are there any design patents, legal consultancy regarding design contracts, other legal processes?	Design patent documents
	Design Evaluation Processes	Are there structured procedures for evaluating design? (both pre-launch and post-launch, the success of design projects, the contribution of design to profitability, ROI, effectiveness in market?	How does the evaluation and selection of design outcomes take place? Are there established tools or mechanisms for the evaluation of design projects? For the evaluation of design's contribution to business performance? Who makes the decisions for design? Who are involved to what extent in design decisions?	Design evaluation methods, documents, design review meetings

Table A.1 (continued) : Design Management Audit Framework.

	KEY CAPABILITIES	MAJOR QUESTIONS	DETAILS	EVIDENCE THAT MIGHT BE LOOKED FOR
5. DESIGN ORGANIZATION (PEOPLE AND STRUCTURES)	Design Management Responsibility	Does the business have an assigned management responsibility for design?	Is there a design manager/design director/chief design officer? How are different levels of design management responsibilities carried out (design project level/design organization level/strategic level)?	Formal and informal responsables for design
	Design Skills	Does the business have the necessary skills to carry out design activities? Does the business have a design function? Does it utilize outsourced design capabilities?	Design activities are undertaken by whom? Does the business utilize outsourced design? Are there in-house designers / a separate design function or department within the business? (the staff, level of experience, skills, and knowledge)	All staff responsible for design, in-house designers, freelance designers, design consultancy studios
	Organizing for Design (Design Function Organization)	Does the business effectively organize its (in house and/or outsourced) design activities?	How are designers selected/design teams/organization formed? How does the business ensure that necessary people meet and contribute during design processes?	Design process meetings, design teams, design process meeting routines
6. RESEARCH FOR DESIGN	Design Research Programs and Resources	Does the organization carry out design research activities or utilize resources to inform design? (user needs and requirements, market research, user research, demographic and social trends, future trends, lifestyle research, technology, competitors)	How is design research carried out?/Are structured tools and techniques utilized during design research? (Integration of outside knowledge, understanding users and needs, identification of customer requirements, etc.)	Examples and outputs from design research projects/programmes
	Information and Idea Networks	Are there established information and idea networks for design?	Are networks established with other designers, design theorists, educators, design critics? Are there information and idea networks regarding design, technology, demography, society, economy?	Examples of established networks, resources

Table A.1 (continued) : Design Management Audit Framework.

	KEY CAPABILITIES	MAJOR QUESTIONS	DETAILS	EVIDENCE THAT MIGHT BE LOOKED FOR
7. TRAINING AND DEVELOPMENT FOR DESIGN	General Training and Development	Does the organization carry out training and development programs for its employees?	Are these programs regular? How are they carried out? Are they targeted at all company staff?	Training and development programs for all company staff
	Nurturing Skills and Creativity of Design Related Personnel	How does the organization nurture the skills/knowledge/creativity of design related personnel (responsibles of design, design managers, in-house design staff)?	Does the organization carry out learning and development programs for design related personnel? Does the organization provide time and resources for nurturing creativity through trade fairs, exhibitions, design journals, etc?	Training and development programs for designers; designer participation in fairs, exhibitions, design events; membership to design journals, etc.
8. DESIGN INTEGRATION	Coordination and Communication with Other Business Functions, Strategies and Processes	Are there effective structures and processes for communication and coordination between design and other business functions?	Are design activities integrated with other business processes, functions and their strategies? (eg. Marketing, Production, Branding, Corporate Communications) (Cross functional teams? (eg. Sustainability, environment, innovation strategy)	Examples from strategies of other business functions, cross-functional work, joint projects carried out, physical manifestations
	Role and Place of Design	Which processes does design contribute throughout the organization? When does design get involved in these processes? When do design processes start?	What place does design have in NPD, marketing or branding (differentiation/cost reduction/brand, quality, community, culture/guidelines/relationship with quality, environment)? When are designers typically involved? Is design used mostly for differentiation/cost reduction/branding/increasing quality/establishing an innovative culture, etc.?	Design's involvement and use in different processes throughout the organization
	Breadth of Design (Design Activities Undertaken in Different Areas)	What are different design activities undertaken throughout the organization?	Which fields of design are regularly being used? Which have been/are consulted when necessary? (Industrial design, engineering design, graphic design, interaction design, architectural design, interior design, etc.)	Design outputs in different design fields
	Coherence and Coordination Between Different Areas of Design	Is there coordination and coherence between design activities undertaken in different areas?	Is there a focus on establishing a common strategy, approach and language for design activities in different areas? How? Physical manifestations?	Coherence between the design outputs in different fields, coherence observed in physical manifestations of design

Table A.1 (continued) : Design Management Audit Framework

	KEY CAPABILITIES	MAJOR QUESTIONS	DETAILS	EVIDENCE THAT MIGHT BE LOOKED FOR
9. CULTURE AND CLIMATE FOR DESIGN	Design Awareness & Understanding of Senior Management	Do senior managers have a broad understanding about how design contributes to the organization?	In which ways do they think design contributes to an organization? What do they think about design? How knowledgeable are they about the different ways that design can be used to support business objectives?	Views and perspectives on design expressed verbally or in published mediums
	Design Commitment of Senior Management	How committed are senior managers to design?	Do they prioritize design issues and projects? Do they initiate, support and follow up design programs, projects, initiatives? Are there design champions among managers?	Examples from design programs, projects that have been carried out with commitment
	Design Attitudes of Employees	How positive are the attitudes to design among the employees?	Do employees believe in the value of design? Do they think that a business should be committed to design? Do they support and contribute to design projects?	Views and perspectives on design expressed by employees, their support, commitment and attitudes towards design programs, projects, and design staff
	Environment for Creativity	Is there an environment supporting creativity? Do managers encourage creativity, experimentation and design?	Do employees think that creativity, new approaches and experimentation is encouraged in the organization? (freedom, open communication, positive challenge, supervisory encouragement, work group supports, organizational encouragement and sufficient resources) Does the physical environment reflect a creative atmosphere?	Systems and routines to support creativity, atmosphere reflected by work environments, physical manifestations

Table A.2 : Design Management Audit Framework Assessment Scale.

MAJOR DIMENSIONS	KEY CAPABILITIES	LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 4
1. DESIGN IN STRATEGY	Strategy Formulation Process	There is no strategy formulation process	Strategy understood as setting a few conventional performance targets without the formulation and evaluation of strategic options, no clear, guiding strategic visions	Business strategies are developed, however with a limited analysis of internal & external factors and strategic options, and the process has problems with regularity and structure	Business strategies are developed through a structured process, and a detailed analysis of internal and external factors (trends, technology) and promising strategic options
	Strategic (Business) Planning Process	There is no business planning process	Planning is carried out in a limited and unstructured way in a few business areas/functional departments	Business strategies are turned into detailed business plans in several business areas/functional departments	Business strategies are turned into business plans through a detailed and structured planning process in all business areas/functional departments, planning is an organization-wide approach that drives the business
	Strategy and Planning Communication	Strategy and business goals and plans are known only by few key individuals	Business strategies, goals and plans are communicated in an unstructured way to senior management	Business strategies, goals and plans are communicated in a structured way to senior management but there are problems in their communication to lower levels	Business strategies, goals and plans are communicated in a structured way, with all company staff receiving relevant information and being updated
	Design in Strategy	Design is not part of strategy formulation or business plans	Design is sometimes articulated as part of strategies and business plans of other areas like marketing and new product development but as individual projects	Design is integrated into company strategy and business plans, but under marketing or new product development strategy (integrated into various business activities but without a clear design strategy)	Design is part of company strategy and business plans with a clear design vision, objectives and planning for design, design strategy is linked to other business processes and corporate objectives in various areas
	Design's Input to Strategy Formulation	There is no input from design to strategy formulation or business planning	Designers and design managers indirectly contribute to strategy and plans through their interaction with key individuals and senior managers	Designers and/or design managers contribute to strategy and plans however in the lower levels of marketing strategy or design strategy formulation, designers/design managers are responsible for the formulation of design strategy	Design managers and/or design staff contribute to strategy formulation by taking part in the company's strategy formulation process through structured meetings and processes

Table A.2 (continued) : Design Management Audit Framework Assessment Scale.

MAJOR DIMENSIONS	KEY CAPABILITIES	LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 4
2. PLANNING FOR DESIGN	Design Planning (Thinking)	There is no planning for design activity	Some planning for design takes place, but it is not methodical and is carried out as part of plans and objectives of other business functions such as marketing	There is planning for design activity based on an analysis of products, customers, markets and competitors but with a limited connection to overall business strategy	There is detailed planning for design activity based on business strategy with clear objectives for design and detailed analysis of products, customers, markets and competitors
	Design Planning Horizons	Design can be/is sometimes considered on the basis of individual projects that deliver individual business objectives	Design is considered in the short term as part of individual projects that deliver specific business objectives	Design is considered as part of medium and short term business plans to deliver several business objectives	Design is integral to all short, medium and long term plans, with a focus on design's future role for achieving different business objectives
	Design Policy and Standards	There is no policy or standards regarding design	There are basic notions that guide design decisions but they are in the heads of a few key individuals	Design approach and certain standards regarding design are articulated inside design briefs and other written documents and communicated to all relevant staff	There is a clear design policy as well as clear standards for design activities in different areas, which are documented and internalized by all relevant staff
3. INVESTMENTS FOR DESIGN	General Budget Allocation	There is no formal financial planning or budget allocation process	There is financial planning and budget allocation but no procedures for the evaluation of potential and actual returns	Financial planning and budget allocation takes place based on several tools and procedures being used to evaluate and assist in investment decision making	Financial planning and budget allocation takes place based on detailed financial procedures to evaluate investments, risks and to track returns
	Design Budget Allocation	There is no resource allocation for design. (Either unable to understand the potential of design investment or does not have enough resources.)	Budgets are allocated to design activity but in an unstructured way (ex. without the assessment of potential returns).	Budgets are allocated to design in the light of certain methods that guide budget allocation decisions (ex. an assessment of potential returns).	Budgets are allocated to design in the light of structured methods & evaluations that guide budget decisions (such as potential returns, risks and tracking of actual returns).

Table A.2 (continued) : Design Management Audit Framework Assessment Scale.

MAJOR DIMENSIONS	KEY CAPABILITIES	LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 4
4. DESIGN PROCESSES	General Process Awareness	No activities are recognized as processes	Some major physical activities are recognized as processes such as manufacturing or supply chain management	Most of the business activities are identified as processes	Most of the business activities are identified as processes with a focus on their monitoring and continuous improvement
	Design Process Awareness	Design is not recognized neither as a process on its own or as part of other processes	Design contributes to some processes without a clear and recognized design process in place	Design is a clearly recognized process that consistently contributes to some major processes such as NPD, marketing, corporate communications	Design is integrated into many other business processes with a clear design process in place, as well as a focus on design process improvement
	Design Process Management	There is no mechanisms for design project management	Design project management is informal and unstructured without the use of any documentation mechanisms or management tools for cost, time and requirements monitoring	Several structured tools and documentation are used in managing design projects (such as time scales, design briefs, evaluation and cost monitoring)	Structured tools and documentation are used all throughout the management and monitoring of design projects, (including planning, briefing, regular reviews, evaluation, cost monitoring) with a focus on their improvement
	Design Process Thinking, Methods & Tools	There is no awareness regarding design methods, techniques and tools	Certain methods and tools are utilized in design activities but without structure and consistency	Several structured design methods, techniques and tools are utilized during design projects from research through to prototyping	Structured methodologies, techniques and tools are utilized throughout design activities, with a clear design process approach/ methodology.
	Legal Processes for Design	There is no awareness, mechanisms or experience in the legal processes for design	There is some awareness and desire for the legal protection of design or the business is newly engaging in the legal protection of design	The business has experience in legal protection of design and some of its product designs are legally protected	Legal protection of design is an established part of design management processes, carried out consistently and professionally
	Design Evaluation Processes	Nor routine for evaluation and monitoring is in place (Either no time, not seen as necessary, or do not know how to evaluate)	Some form of evaluation takes place but it is informal and not structured mostly without clear evaluation criteria	Design projects are evaluated in a detailed and structured way according to briefing criteria before going to production and tested before the launch	Design projects are evaluated in a detailed and structured way both before and after launch

Table A.2 (continued) : Design Management Audit Framework Assessment Scale.

MAJOR DIMENSIONS	KEY CAPABILITIES	LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 4
5. DESIGN ORGANIZATION	Design Management Responsibility	There is no management responsibility for design	Design management responsibility is assigned to a manager with another major responsibility (ex. Marketing, engineering, production)	There is an assigned design management responsibility however it is mostly limited to design project and design organization management	There is an assigned management responsibility for design carrying out design project, design organization as well as strategic design management responsibilities
	Design Skills	The business does not utilize any in-house or outsourced design skills (If carried out, design activities are undertaken by other staff)	The business has some experience in undertaking certain areas of design activity either through outsourced or in-house design capabilities	The business has substantial experience in carrying out necessary design activities either through outsourced design or through the use of an inhouse design function, however there is not much focus on the development of these skills	All relevant forms of design activity are undertaken as in-house and/or outsourced design with clear approaches for the selection, recruitment and development of appropriate design skills
	Organizing for Design (Design Function Organization)	There is no structured organization for design activity, no arrangements for bringing together contributions at appropriate points during design activities.	Selection of designers and the formation of design teams are carried out by certain key individuals in an informal manner; there are some arrangements for bringing together internal contributions at appropriate points during design activities.	Selection of designers and the formation of design teams are carried out according to the objectives of design projects; there are arrangements for bringing together internal and external contributions at appropriate points during design activities.	Selection of designers and the formation of design teams are carried out systematically according to the objectives of design projects with arrangements & procedures to bring internal and external contributions together throughout design projects; there is an effective design organization in place.
6. RESEARCH FOR DESIGN	Design Research Programs and Resources	There is no or very minimal research activity feeding into design	Some forms of research are carried out to inform design such as market research but they are unstructured and irregular	The organization carries out structured research activities to inform design and utilizes different resources	The organization has detailed and effective design research programs and utilizes many resources to enlarge the information and knowledge base of designers
	Information and Idea Networks	There are no formal/established information and idea networks for design	Information and idea networks are limited to following sectoral fairs and publications	The organization has established several information and idea networks feeding into design (e.g., attendance to sectoral fairs, design events, exhibitions, conferences; membership to design journals, publications, resources; joint research projects with universities and research institutions)	The organization has established effective information and idea networks in the areas of design, technology, society; these feed into design on a regular basis through structured processes

Table A.2 (continued) : Design Management Audit Framework Assessment Scale.

MAJOR DIMENSIONS	KEY CAPABILITIES	LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 4
7. TRAINING AND DEVELOPMENT FOR DESIGN	General Training and Development	There is no established systems for learning and development	Some initiatives exist for learning and development but they are ad-hoc and are not performed on a regular basis	The organization has in place a number of learning and development programs for all employees	The organization has in place continuous learning and development programs for all employees, learning and development is encouraged through established systems and prevailing organizational culture
	Nurturing Skills and Creativity of Design Related Personnel	There is no focus on the development of skills and creativity of design related personnel	Some initiatives exist for the development of skills and creativity of design personnel but they are ad-hoc and are not performed on a regular basis	The organization has in place some learning and development programs that are specifically targeted for design related personnel	The organization has in place continuous learning and development programs that are specifically targeted for design related personnel, and supports this with the prevailing culture for learning and development
8. DESIGN INTEGRATION	Coordination and Communication with Other Business Functions, Strategies and Processes	There is no communication or coordination between design and other business functions	There is minimum communication and coordination between design and closely related business functions such as marketing and production	There is communication and coordination between design and many closely related business functions (such as marketing, production and corporate communications)	There is effective communication and coordination between design and all related business functions and processes, design has infused into strategies and processes all throughout the organization
	Role and Place of Design	Design is not involved in any business processes.	Designers get involved at the end of product development process (or any other process) mostly for styling and for a final touch	Design is integrated early in processes such as NPD, innovation and corporate communications as an established working method	Design works as a driver of the new product development process and a major tool in innovation, design is integrated into many different processes in their earliest stages of ideation and strategy formation.
	Breadth of Design (Design Activities Undertaken in Different Areas)	Either no design activity is undertaken or design activities are not recognized as design.	Design activities are limited to one or two areas (ex: industrial design, graphic design)	Design activities are undertaken in several areas like industrial design, graphic design, interior design, interaction design, etc.	Design activities are undertaken in several areas like industrial design, graphic design, interior design, interaction design, packaging design etc. and design has infused into all relevant business activities, with related design areas being consulted when necessary
	Coherence and Coordination Between Different Areas of Design	No coherence or coordination between design activities undertaken in different areas	There are efforts for establishing coherence and coordination between design activities undertaken in different areas	There is a deliberate focus on establishing coherence and coordination between different design areas but mostly through informal processes	There is a clear focus and established systems for ensuring coherence and coordination between design activities undertaken in different areas with a detailed monitoring

Table A.2 (continued) : Design Management Audit Framework Assessment Scale.

MAJOR DIMENSIONS	KEY CAPABILITIES	LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 4
9. CULTURE AND CLIMATE FOR DESIGN	Design Awareness & Understanding of Senior Management	Senior management does not have any awareness regarding the potential benefits of design.	Senior management has some awareness about the potential benefits of design in certain fields	Senior management is aware of the benefits and potential value of design in many aspects and see it as an invaluable competitive tool	Senior management is aware of the wide ranging benefits and potential value of design, design is embraced as a major tool for innovation and the development of all aspects of the organization
	Design Commitment of Senior Management	Senior management shows no interest and commitment to design activities	Senior management shows some interest in design activities undertaken in certain areas but is more reluctant for design compared to other business issues	Senior management is committed to design activities and initiatives	Senior management is enthusiastic and committed to design activities; champion the role of design in every aspect of the business, with a clear focus on continuously improving design integration
	Design Attitudes of Employees	Majority of the employees do not believe in the value of design	Employees are somewhat positive about design but lack knowledge, enthusiasm and commitment	Majority of the employees recognize the importance of design and are committed to contributing to design activities	Design's value is recognized throughout the organization with commitment and enthusiasm for contributing to and participating in design activities
	Environment for Creativity	There is no sign of an environment that supports creativity	The value of creativity is recognized but is not reflected in organizational culture and routines	Creativity is encouraged through establishing mediums and procedures to support open communication, team work, initiative and experimentation	Creativity has become part of organizational culture, is supported at all levels of the organization both through mediums and procedures for open communication, collaboration, experimentation, interdisciplinary teamwork, encouragement and resources

APPENDIX B: Interview Questions Regarding the Development of Design and Design Management Capabilities Throughout the Years

1. How was the decision to enter the ceramic sanitary ware sector made? How did the company get established?
2. How did the company acquire its technology and how were production skills and know-how developed?
3. Could you briefly summarize the company profile and business strategy in the founding years?
4. In the founding years did the company target the domestic market? How did this change throughout the years?
5. How were the first products designed? (Licensing? Working with external designers? In-house design and development?)
6. How did product design and development activities continue in the following years?

Did the company establish an in-house design team?

Did the company work with external designers?

How were decisions regarding design made? By whom?
7. In the past, did the company have any formal design management responsibility, in other words, a design manager who is responsible for the direction of design projects?
8. How do you think that design and design management capabilities advanced throughout the years?

APPENDIX C: Interview Protocol for Case Studies

1. Introduction

Brief information regarding the researcher

Outline of the study, major aims and methodology – explanation of the design management audit framework

Ensuring Confidentiality - All interviews and documentation are confidential.

2. Personal Information Regarding Interviewee

Name and Surname:

E-mail:

Title/Position:

Years in Company:

Background & Education:

3. Company Information that could not be obtained from public sources

Number of Employees:

Annual Turnover (past years results):

Export Amount (Percentage of Production and Turnover):

4. Design Management Audit Framework

Semi-structured interview based on questions of the Design Management Audit Framework

Additional questions whenever necessary.

Major Issues: Design in strategy, Planning for Design, Investments for Design, Design Processes, Design Organization, Research for Design, Training and Development for Design, Design Integration, Culture and Climate for Design.

5. Wrap-up

Are there any additional issues that we have not covered and you think are important in the context of the research?

Setting of an additional interview appointment with the same interviewee if necessary.

6. Information Regarding Other Key Interviewees

Who do you think I should talk to to gain more information regarding ...?

Could you give me their contact information?

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- 2016 – present Part time Lecturer, İstanbul Bilgi University
- 2013 – 2014 Design Group Supervisor, Koleksiyon Mobilya
- 2012 – 2013 Lecturer, Beykent University
- 2010 – 2011 Industrial Designer, Tasarımüssü Design Studio
- 2010 – 2016 Ph.D. Scholarship, TÜBİTAK (The Scientific and Technological Research Council of Turkey)
- 2004 Dana Meadows Student Award, Honorable Mention
- 1999 – 2003 Scholarship of Success, Boğaziçi University Rectorate
- 1999 Ranking 16th in OSS University Entrance Examination
- 1999 3rd in individual and team categories in European Council of International Schools (ECIS) Senior Mathematics Contest

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