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T.C.
BAHCESEHİR UNIVERSITY
GRADUATE SCHOOL OF EDUCATION
THE DEPARTMENT OF BUSINESS ADMINISTRATION

VALUE CREATION IN WEB 3.0



MASTER'S THESIS

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ABSTRACT

VALUE CREATION IN WEB 3.0

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Master's Program in Business Administration

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The rapid change from Web 1.0 to the upcoming Web 3.0 era marks a significant shift in the generation of digital value and has a significant impact on contemporary client interaction. This study looks at how digital marketing has evolved, moving from static information exchange to dynamic, decentralized interactions that give customers more influence. The “Semantic Web”, also known as Web 3.0, offers possibilities for genuine, individualized experiences that value privacy and encourage direct peer-to-peer connection. These decentralized platforms put traditional marketing assumptions to the test and call for more open, value-driven approaches. As a result, companies must rethink their strategies and put an emphasis on collaboration, trust, and relationship building in order to add real value. This study's value goes beyond theoretical understanding by providing a tactical comprehension of the digital environment in the Web 3.0 age. This study lays the road for successful navigation and sustainable growth in a fast-changing digital environment through a thorough investigation of customer behaviour, value generation concepts, and the tools inside digital marketing. The findings have significant ramifications for academics and professionals working to understand and realize the potential of digitalis in improving consumer connections.

Keywords: Web 3.0, Digital Marketing, Decentralization, Value Creation, Consumer Engagement, Personalization.

ÖZET

WEB 3.0'DA DEĞER YARATIMI

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Web 1.0'dan Web 3.0 dönemine yönelik yaşanan hızlı değişim, dijital değerın üretilmesinde önemli bir dönüm noktasına işaret etmektedir ve günümüz müşteri etkileşimi üzerinde önemli bir etkiye sahiptir. Bu çalışma, dijital pazarlamanın nasıl geliştiğine, statik bilgi alışverişinden müşterilere daha fazla etki sağlayan dinamik, merkezi olmayan etkileşimlere geçişı incelemektedir. Web 3.0 olarak da bilinen “Anlamsal Ağ”, gizliliğe değer veren ve doğrudan bire bir bağlantıyı teşvik eden gerçek, kişiselleştirilmiş deneyimler için olanaklar sunmaktadır. Bu merkezi olmayan platformlar, geleneksel pazarlama varsayımlarını teste sokar ve daha açık, değer odaklı yaklaşımlar çağrısında bulunmaktadır. Sonuç olarak, şirketler stratejilerini yeniden düşünmeli ve gerçek değer katmak için iş birliğı, güven ve ilişki kurma konusuna vurgu yapmalıdır. Bu çalışmanın değeri, Web 3.0 çağındaki dijital ortamın taktiksel bir şekilde anlaşılmasını sağlayarak teorik anlayışın ötesine geçmektir. Bu çalışma, müşteri davranışları, değer üretme kavramları ve dijital pazarlama içindeki araçları kapsamlı bir şekilde araştırarak, hızlı değişen bir dijital ortamda başarılı yol haritasını ve sürdürülebilir büyüme yolunu ortaya koymaktadır. Bulgular, akademisyenler ve dijital dünyanın tüketici bağlantılarını geliştirme potansiyelini anlamak ve gerçekleştirmek için çalışan profesyoneller için önemli sonuçlara sahiptir.

Anahtar Kelimeler: Web 3.0, Dijital Pazarlama, Ademi Merkeziyetçilik, Değer Yaratımı, Tüketici Katılımı, Kişiselleştirme.

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Chapter 1

Introduction

1.1 Theoretical Framework

1.1.1 The digital transformation and evolution to web 3.0. The advent of the World Wide Web signalled a pivotal moment in digital marketing. In its early stages, known as Web 1.0, websites primarily functioned as online pamphlets featuring unchanging information. There was minimal interaction, and most information flows occurred from brands to consumers (Hatzivasilis et al., 2018, p. 4). With the evolution of the web to Web 2.0, the focus shifted towards interactivity. User-generated content, social media platforms, and enhanced two-way communication became prominent.

We are currently on the skirt of a more critical computerized change known as Web 3.0, called the “Semantic Web”. This is not only a mechanical improvement but maybe a considerable alteration in how people lock in with online data. Web 3.0 decentralized platforms return power to users, removing the necessity for intermediaries and enabling direct communication between peers. By emphasizing data privacy and personalized content consumption, users have enhanced control over their experience. In addition, implementing AI and machine learning enables intelligent personalization to deliver content that aligns with users’ preferences, behaviours, and requirements.

Within this Web 3.0 landscape, the core principles of digital marketing go beyond traditional methods of promoting products. Nowadays, brands have been tasked with building trust, cultivating virtual communities, fostering authentic connections, and providing tailored user experiences (Daud et al., 2022, p. 37). Creating value becomes all-encompassing in this context, necessitating brands to display greater authenticity, transparency, and adaptability toward the ever-evolving consumer landscape.

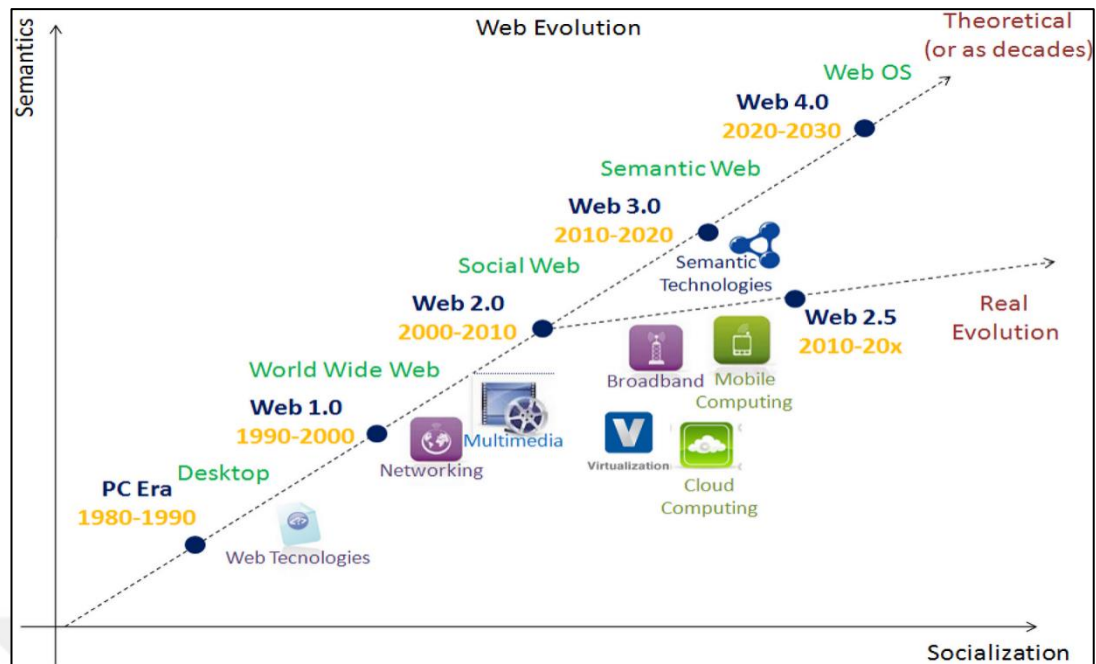


Figure 1. Evolution of web 3.0

1.2 Statement of the Problem

As the digital landscape experiences a significant shift in the era of Web 3.0, the foundational principles that have long supported traditional marketing are now being called into question. In light of the personalized and decentralized digital experiences advocated by Web 3.0, the outdated tactics relying on mass communication and generic approaches have become obsolete. Significant changes have occurred in consumer behaviour and expectations (Rudman & Bruwer, 2016, p. 147). Nowadays, consumers are not just passive recipients of information but active contributors who create and verify content using the tools and technologies of Web 3.0. As a result, there is a stronger desire for genuine, straightforward, and tailored brand engagements.

Furthermore, the decentralized nature of Web 3.0 platforms allows for peer-to-peer engagements, diminishing the dominating control that brands previously exerted over their communication. This dissemination of information levels the playing field for businesses, creating a more transparent environment where genuine and value-oriented interactions hold the utmost importance (Mekacher, 2019, p. 125). Adaptation lies at the core of the issue. How can businesses adjust their marketing approaches in a time characterized by decentralized control and informed, discerning consumers? How can they redefine value in a manner that profoundly connects with the

sophisticated digital consumer, guaranteeing brand significance and devotion in the era of Web 3.0?

1.3 Purpose of the Study

Web 3.0, the digital era, goes beyond being just a technological shift and represents a significant change in how businesses, consumers, and technologies connect. With this evolving landscape, it becomes crucial for businesses to comprehend the complexities of value generation in order to stay current and competitive (Saqib et al., 2021, p. 809). This study aims to investigate the complex domain of value generation through the principles and abilities of Web 3.0. The decentralized nature of Web 3.0 has transformed the conventional hierarchies in brand-consumer interactions. With boundaries becoming less distinct and power dynamics evolving, it is increasingly essential for businesses to understand how value can be jointly generated through cooperation with consumers.

Furthermore, the very concept of 'value' is experiencing a change. It is no longer solely limited to the physical advantages of a product or service. In the era of Web 3.0, value now encompasses the experiences, trust, and relationships that brands have the potential to develop. This research seeks to identify the specific tools, platforms, and approaches within digital marketing that can assist in cultivating this heightened perception of value (Rigby et al., 2011, p. 110). Moreover, as consumers become increasingly discerning and proactive, their viewpoints and outlooks on brands are primarily shaped by their digital encounters. Consequently, this investigation aims to pinpoint the aspects of online advertising that genuinely connect with these modernized consumers, providing a valuable understanding of their likes, ambitions, and challenges. The primary objective of this study is to not just establish a theoretical comprehension of value generation in the Web 3.0 era but also present companies with a comprehensive strategy for successfully navigating this dynamic digital environment. By accomplishing this, they can secure sustainable expansion and enhance customer connections.

1.4 Hypotheses & Research Questions

H1: Companies that harness the potential of Web 3.0's decentralized platforms can create more authentic value for consumers than those relying solely on traditional digital marketing tactics.

RQ1: How have consumer attitudes towards digital marketing changed with Web 3.0?

RQ2: What are the key drivers of value creation in Web 3.0's digital marketing landscape?

1.5 Significance of the Study

It is vital to remain ahead within the ever-changing digital scene of nowadays, where customer behaviour and innovation advance hand in hand. The significance of this study goes past theory because it has numerous measurements and suggestions. First and first, it lays the foundation for rethinking how esteem is created. In the era of Web 3.0, there is a challenge to conventional notions of value (Chen et al., 2022, p. 1). This study enables businesses to adjust their comprehension so that their offerings are applicable and recognized as valuable within this emerging framework. In addition, as Web 3.0 prioritizes decentralization, user autonomy, and personalization, the previously practical approaches may no longer be sufficient (Martinez & Moser, 2019, p. 2731). This research provides an up-to-date and essential plan for companies to adjust and create new ideas. Whether utilizing block chain technology to ensure transparent transactions, utilizing AI for more personalized experiences, or exploring decentralized platforms to engage with communities, the knowledge gained from this study will inform strategic decision-making.

This research serves as a guiding tool for digital marketers. By relying on evidence-based findings, marketers can determine which areas to focus on and allocate their resources efficiently for maximum impact (Daud et al., 2022, p. 37). Understanding how value is perceived and nurtured in Web 3.0 is vital for stakeholders, including investors and tech developers. It guides decisions on where to invest, which technologies have the most significant potential, and how to align overall business goals with the changing digital landscape.

1.6 Definitions

1.6.1 Web 1.0. The first iteration of the World Wide Web, characterized by static web pages where users were limited to passive content viewing.

1.6.2 Web 2.0. The second phase in the web's evolution, emphasizing user-generated content, interactivity, and social networking.

1.6.3 Web 3.0. The Semantic Web. It incorporates AI, decentralized platforms, user control, and intelligent personalization. It promises a shift from data-driven experiences to more user-centric interactions.

1.6.4 Value creation. The process through which businesses increase the worth of their products or services by enhancing their features or improving their associated benefits.

1.6.5 Decentralized platforms. Systems where functions and decisions are distributed away from a central authority. These platforms often use block chain technology to ensure transparency and security.

1.6.6 Semantic analysis. The process of machines understanding and responding to user phrases with accurate meanings. In the context of Web 3.0, it refers to the ability of systems to grasp user intent and provide more contextual and relevant results.

1.6.7 Blockchain. A decentralized ledger of all transactions across a network. This technology is pivotal in Web 3.0 for ensuring data integrity and transparency.

1.6.8 Personalization. Creating custom user experiences based on their preferences, behaviours, and past interactions.

1.6.9 Artificial intelligence (AI). The simulation of human intelligence in machines, enabling them to perform tasks that typically require human intelligence, such as visual perception, speech recognition, and decision-making.

1.6.10 User-centric design. An approach to designing websites and applications where user needs and preferences are paramount.

1.6.11 Interactivity. The degree to which a user can influence or participate in digital content or experiences, often leading to more immersive and engaging interactions.

1.6.12 Digital marketing. Using digital channels, platforms, and strategies to connect with and influence potential customers online.

1.6.13 Peer-to-peer (P2P) networks. A decentralized communication model in which each party has equal capabilities and can initiate communication sessions.

1.6.14 Data privacy. Refers to the handling of data—how data is collected, shared, and used—ensuring that personal information remains safe from unauthorized access and breaches.



Chapter 2

Literature Review

2.1 Historical Context of the Digital Landscape

2.1.1 The inception of the world wide web. In 1991, the World Wide Web came into existence through the efforts of Tim Berners-Lee, a British computer scientist. This marked the beginning of an era where information became more accessible and interconnected (Hatzivasilis et al., 2018, p. 4). In the past, there was a situation where data and information were kept separately in different systems, making it difficult to share and access them worldwide.

Table 1

Key Milestones in the Inception of WWW

Year	Milestone	Description
1989	Proposal by Tim Berners-Lee	Introduction of a system to share and link documents
1991	First website	Information about the WWW itself
1993	Introduction of the Mosaic browser	Popularized the use of the WWW

2.1.1.1 Birth and early vision of the web. The original concept for the internet was to create a platform where researchers could effortlessly exchange and connect their discoveries, regardless of geographical or technological limitations.

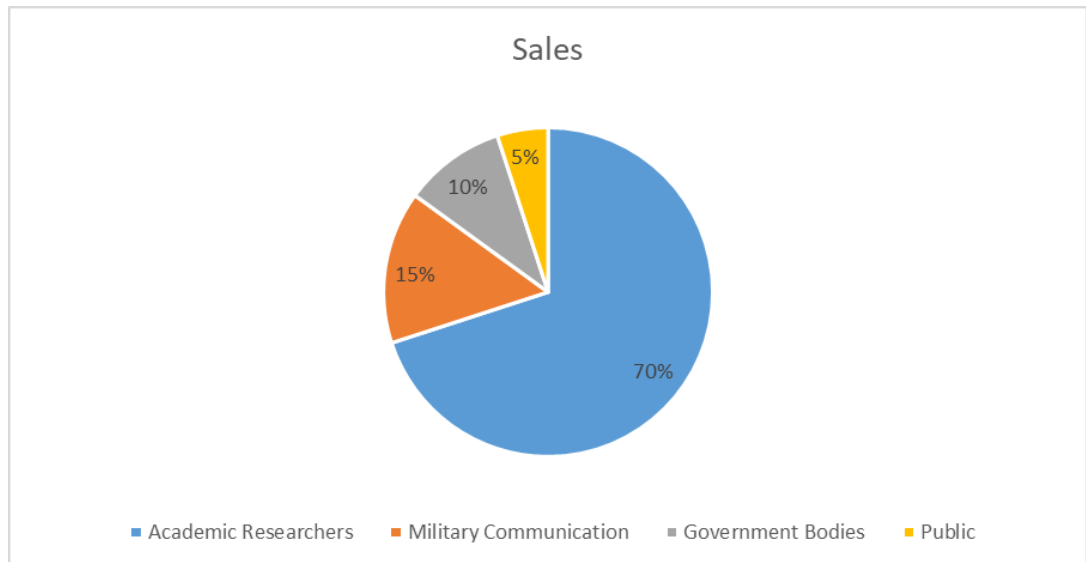


Figure 2. Initial intended users of the www

2.1.1.1.1 Key pioneers. Tim Berners-Lee and others are the pioneers. Although Berners-Lee is commonly known for his association with the WWW, other significant figures, such as Robert Cailliau, played vital roles.

2.1.1.1.2 Challenges faced during the initial days. The beginning of the World Wide Web was accompanied by various obstacles, despite its potential for transformation. The emerging digital environment had to overcome many challenges that tested its resilience and adaptability.

- i. *Limited User Interfaces:* Web 1.0, commonly known as the “Informational Web”, represented the early stage of the Internet's existence. At that time, the online environment resembled a massive digital library - filled with helpful information but mainly lacking interactivity or two-way communication. During this time, websites functioned as digital brochures rather than platforms for real-time feedback or user-generated content (Ren et al., 2023). Browsing was a passive activity due to the lack of interactive elements like user profiles, social sharing, and personalized content. Previously, navigation usually followed a straightforward path where users were required to adhere to predetermined routes, lacking the user-friendly site maps and search capabilities we consider standard today. Additionally, the design of these early websites showcased a minimalistic approach characterized by simplicity, which can be attributed not only to technological constraints but also to a nascent grasp on online user

experience. According to Rudman and Bruwer (2016), these websites were not very captivating for visitors because they heavily relied on textual content presented in lengthy paragraphs. The lack of dynamic graphics, animations, and responsive designs also prevented users from having the immersive experiences now commonly found on Web 2.0 and 3.0 platforms.

- ii. *Slow Internet Speeds*: The initial internet speed restrictions significantly impacted user behaviour and content creation. Initially, the digital environment adopted a minimalist design approach. Designers preferred simplistic layouts due to the potential slowdown caused by extensive graphics or multimedia components. Emphasis was placed on textual information, while images used were often compressed, reducing quality. Websites primarily served as digital brochures, providing essential information without the elaborate design elements commonly seen on contemporary websites (Laukkanen & Tura, 2020, p. 1). Additionally, the limitations on speed directly influenced users' perceptions of what to expect and their tolerance level. Frequently, users organized their online tasks around the sluggish speeds by arranging downloads during non-busy periods or overnight, fully cognizant that even minor software updates could require several hours. Content creators and businesses had to adapt by taking a more strategic approach to online content. Each image, video, or document now requires additional waiting time for the audience, potentially resulting in decreased user engagement. Furthermore, the domain of internet-based gaming, digital trade, and interactive mediums encountered significant obstacles. The games had elementary features accompanied by low-quality visuals, electronic commerce platforms grappled with delivering a seamless exploration process, and the concept of streaming movies or music online seemed far-fetched for the majority. Back then, online social interactions were limited to basic chat rooms and email communications (Jang & Hsieh, 2021, p. 2). The idea of real-time video calls and media-rich interactions that we now consider commonplace was only a distant dream.
- iii. *Scepticism & Lack of Awareness*: During the early days of the Internet, society encountered a critical juncture in comprehension. The conventional media platforms, which served as the main information channels for numerous individuals, would occasionally cover the Internet with a blend of interest and hesitation. They depicted it as a tool holding promise but one that was not yet

fully comprehensible to most people (Chen et al., 2022, p. 1). The public often developed doubts due to the unclear portrayal. Concerns were raised about its safety, whether it was necessary, and how long it would last. Was it simply a fancy gadget for the wealthy, or did it genuinely have the potential to transform communication? Furthermore, there was a significant disparity between individuals with access to digital technology and those without, commonly called the digital divide. The Internet seemed like an unfamiliar and misunderstood idea in areas with a technological infrastructure deficiency or limited education about these advancements. Because of a lack of direct exposure or reliable information, people had difficulty grasping how it could be practically applied in their everyday lives or business activities. Moreover, it should be acknowledged that individuals who embraced new technology early on and had a keen interest in it often encountered difficulties when articulating the complexities of the Internet to those less technologically inclined (Daud et al., 2022, p. 37). Words such as “email”, “browser”, and “search engine” were unfamiliar terms that had not yet become part of everyday language. This lack of understanding created an even greater divide between those who were early adopters of technology and those who were not. In essence, the beginning stages of the Internet consisted of a combination of its revolutionary possibilities and the widespread doubts and lack of knowledge that surrounded it

- iv. *Limited Content Availability:* During the early days of the Internet, the digital space was desolate primarily. In contrast to today’s vibrant online city with diverse content appealing to various interests, the early web resembled a sparsely inhabited frontier settlement. The initial individuals in this field consisted mainly of scholars, scientists, and a few technology enthusiasts (Mekacher, 2019, p. 125). Their primary objective was to share information within their respective fields, leading to the dominance of academic and technical websites. Furthermore, the strict gatekeeping of online content creation was enforced due to the lack of platforms such as WordPress, Wix or Squarespace that now enable even individuals with limited technical skills to create websites. Consequently, many possible subjects and specialties were left unexplored, anticipating the democratization of content creation through technology (Salamzadeh et al., 2019, p. 7). Looking back, the constrained content availability presented both an obstacle and a chance. Although individuals using the early Internet had to

navigate through a restricted range of websites, this limitation motivated inventors to create more user-friendly tools and platforms, resulting in the massive growth of content during the advent of Web 2.0.

2.1.1.1 The transition from text-based to graphic interfaces. During the initial period of the World Wide Web, simplicity prevailed as users primarily engaged with websites using text-based browsers. At the time, these platforms were innovative but required users to know specific commands and lacked the visual attractiveness we now associate with the Internet (Chen et al., 2022, p.1). The user experience was closer to working with a command-line interface than the visually immersive web browsers we utilize today.

Following this, there was a significant moment in the advancement of the Internet: the inception of visual interfaces. The introduction of the Mosaic browser in 1993 played a vital role in driving this transformation. Created by a team at the National Center for Supercomputing Applications (NCSA), which included notable individuals like Marc Andreessen, Mosaic revolutionized web browsing by enabling the display of multimedia elements within a webpage. This shift transformed the Internet from being solely focused on textual information to becoming an immersive visual experience. The text could be accompanied by images, making navigation more accessible with the help of buttons, and using colorful layouts became more common. As a result, the Internet transformed into a platform for obtaining information and an immersive experience. Users now enjoy browsing in a way that is instinctive, captivating, and visually appealing (Hatzivasilis et al., 2018, p. 4). The introduction of a graphical interface revolutionized the internet, changing it from a specialized platform for technology enthusiasts and academics into a user-friendly tool anyone could access.

2.1.2 Evolution from web 1.0 to 2.0. The evolution of the Internet can be divided into distinct phases, and the shift from Web 1.0 to Web 2.0 significantly changed how users engaged with digital content (Martinez & Moser, 2019, p. 2731). Web 1.0, also known as the “Static Web”, mainly comprised static web pages that lacked interactivity. These websites functioned like digital brochures, delivering information to users in a one-directional manner with limited opportunities for engagement.

With the advancement of technology and increasing user demands, a more interactive online experience became necessary, leading to the emergence of Web 2.0. The “Social Web” phase introduced various interactive elements to enhance user engagement. In recent years, websites have evolved from being solely informational to serving as interactive platforms for communication (Saqib et al., 2021, p. 809). Rather than just receiving information, users can now actively engage by commenting on articles, sharing content, interacting with other users, and creating content. During this era, social media platforms such as Facebook, Twitter, and YouTube experienced tremendous popularity. These platforms were based on the fundamental idea of encouraging user participation and sharing of content. The advent of Web 2.0 brought about a significant shift in the way users engaged with online platforms.

2.1.2.1 Characteristics of web 1.0. The first stage of the World Wide Web, Web 1.0, set the foundation for today's Internet. This early phase was defined by its simplicity and directness, primarily as a platform for accessing information rather than interactive online experiences. During this stage, the internet resembled a virtual library where individuals could access and consume information. However, their ability to engage or interact with that information was considerably restricted, resulting in an imbalanced digital environment (Daud et al., 2022, p. 37). During the Web 1.0 era, a small group of content creators had the majority of power and control in sharing information, whereas most users were limited to being passive consumers. These consumers lacked means or platforms to express their opinions, exchange perspectives, or create content. The unidirectional transmission of information was a prominent characteristic of that period.

2.1.2.1.1 Static web content. It is frequently used interchangeably with Web 1.0. In the realm of digital, “static” pertains to website pages that remain unchanged and do not necessitate any form of user engagement to exhibit their content. In the earlier era of the web, these websites remained stagnant and constant, offering identical information to all visitors regardless of their actions or preferences. This was distinctly different from the dynamic websites during the Web 2.0 phase, which could modify content instantly based on user inputs or behaviours (Hmurovic et al., 2023, p. 307). HTML (HyperText Markup Language) was the primary coding language used to create Web 1.0 websites, enabling the display of text, pictures, and links. The

webmaster had to manually edit the HTML whenever there was a need for changes in site content since advanced scripting or databases were unavailable.

Table 2

Web Content Summary

Web 1.0 / 2.0 / 3.0 Summary

Crawl	Walk	Run
Web 1.0	Web 2.0	Web 3.0
Mostly Read-Only	Wildly Read-Write	Portable & Personal
Company Focus	Community Focus	Individual Focus
Home Pages	Blogs / Wikis	Lifestreams / Waves
Owning Content	Sharing Content	Consolidating Content
Web Forms	Web Applications	Smart Applications
Directories	Tagging	User Behavior
Page Views	Cost Per Click	User Engagement
Banner Advertising	Interactive Advertising	Behavioral Advertising
Britannica Online	Wikipedia	The Semantic Web
HTML / Portals	XML / RSS	RDF / RDFS / OWL

2.1.2.1.2 Rise of early internet companies.

2.1.2.1.2.1 *Yahoo's directory and organizational role.* Yahoo initially began as a web directory, where websites were organized and indexed to give users an easier way to discover suitable content. In contrast to search engines that primarily relied on algorithms, Yahoo's directory was carefully managed by humans, providing a more methodical approach for finding desired information. During the Web 1.0 era, its primary function was to streamline the enormity of the internet into a structured directory, assisting users in effortlessly navigating the rapidly expanding online realm (Haudi et al., 2022, p. 219). Yahoo became an essential tool for early internet enthusiasts and laid the foundation for future search engines through its systematic approach.

2.1.2.1.2.2 AOL: Gateway to the online world. A company called America Online, commonly referred to as AOL, served as the gateway to the internet for numerous people rather than just being a regular business. Providing a range of services such as email and instant messaging, AOL offered a complete online bundle. The famous catchphrase “You have Got Mail”, associated with AOL, symbolized the era of digital communication (Chen et al., 2022, p. 1). AOL's commitment to user-friendly interfaces and dedication to community-building characteristics set it apart, fostering a feeling of online connection among its users. During its peak, AOL became synonymous with the internet for many individuals.

2.1.2.1.2.3 Netscape: Pioneering a graphical web journey. During an era where text-centric browsers were prevalent, Netscape's Navigator emerged as a welcome change. Its introduction of a graphical interface revolutionized web browsing. According to Lindquist (2002), this development revolutionized how users viewed and engaged with the internet. It resulted in websites becoming more visually attractive, enhancing the user experience by making it more instinctive and engaging. Netscape had a grander goal beyond just browsing the web; they aimed to transform it into a platform that was both accessible and captivating. Through their revolutionary advancements, they established new benchmarks for web browsers, marking the beginning of an era characterized by visuals and interactivity on the internet.

2.1.2.1.2.4 Others: The underdogs of web 1.0. In the period of Web 1.0, whereas Yahoo, AOL, and Netscape were in control of the showcase, a low rate of it was shared among different littler companies, trendsetters, and new businesses. Even though they were not given as much consideration as more significant companies, these substances had an outstanding impact on the different advancements of the web during its beginning stages. They explored innovative features, catered to specific audiences, and frequently took chances that significant companies may have hesitated to take (Rudman & Bruwer, 2016, p. 147). The contributions they made together, although not as widely recognized, were crucial during the early years of the World Wide Web.

2.1.2.2 Driving forces behind the shift to web 2.0.

2.1.2.2.1 Faster internet speeds: The backbone of rich content. The increase in internet speeds went beyond a mere technical enhancement; it served as the foundation for a more extensive content ecosystem. With quicker speeds, people could stream videos, play online games, and use data-intensive applications without experiencing delays or buffering issues (Mekacher, 2019, p. 125). Due to improved bandwidth and reduced latency, websites have evolved from simple text pages to interactive platforms filled with multimedia. This enhanced speed has also enabled real-time interactions, creating online experiences resembling face-to-face interactions.

2.1.2.2.2 Demand for interactivity: Users as active participants. With the advent of Web 2.0, individuals shifted from being passive users to becoming actively involved contributors. The increased need for interactivity demonstrated a shared longing for online experiences that are both captivating and tailored to one's preferences (Daud et al., 2022, p. 37). Comment sections, forums, and interactive tools began integrating into websites. These additions allowed users to express their opinions, engage with creators, and actively influence the content being presented. Consequently, this transformation turned the internet from a solely one-way communication platform into a dynamic dialogue between users and content providers, significantly enhancing the overall user experience.

2.1.2.2.3 Rise of social media: Building digital communities. The development of social media played a vital part in the transition to Web 2.0. Platforms like Facebook, Twitter, and Instagram offer people extraordinary chances to associate trade data and interact with others on the web. These platforms transformed how people shared personal experiences, voiced opinions, and conducted business (Rigby et al., 2011, p. 110). They also gave birth to digital communities, where users with similar interests could converge, collaborate, and create. The rise of social media signalled a more interconnected and socially driven digital era.

2.1.2.2.4 User-generated content: Democratizing content creation. In the past, organizations and specific individuals mainly dominated content creation. However, with the introduction of Web 2.0, a new era emerged that allowed ordinary users to also become content creators. Websites like YouTube, Blogger, and TikTok offered

users the necessary resources and platforms to create and distribute their content (Hatzivasilis et al., 2018, p. 4). The digital realm transformed into a rich tapestry of various voices: blogs, vlogs, reviews, and tutorials. This wide range of content creation promoted creativity, inclusivity, and diversity in the online culture.

2.1.2.3 The need for interactivity. The need for a more interactive online presence arose from people's natural inclination towards engagement and immediate feedback. Although static pages provided information, they could not satisfy the growing demand for a two-way communication platform. Users no longer desired to be passive recipients of information; instead, they yearned for active involvement, mechanisms for receiving feedback, and online experiences that immerse them (Lacity & Lupien, 2022). With the recognition of changing consumer expectations, businesses and brands began striving to move beyond simple digital brochures. Websites started incorporating areas for comments and forums, followed by social media widgets, allowing users to express their viewpoints, exchange thoughts, and engage with the brand and fellow users. In addition to improving user engagement, this also cultivated a feeling of community, making users feel more connected and appreciated. Additionally, the increasing prominence of online commerce emphasized the significance of interactive features such as dynamic product catalogues, customer reviews, and live chat assistance. Through these resources, businesses were able to bridge the virtual divide with customers, enabling immediate issue resolution and feedback exchange in real time. As a result, trust and customer satisfaction were enhanced.

Technological advancements further accelerated this shift. The emergence of AJAX and other web development frameworks enabled websites to become more responsive, resulting in improved transitions and real-time updates of content without the need for page reloads. Multimedia components such as videos, animations, and interactive infographics gained prominence, greatly enhancing the user experience. Essentially, the shift from static to interactive was a technological advancement and represented the changing digital culture (Saqib et al., 2021, p. 809). It symbolized the move from a unidirectional information pathway to an active and engaging platform that transformed our understanding, utilization, and involvement with the Internet.

2.1.2.3.1 Passive consumption to active engagement. The transition from being passive consumers to actively engaging in the digital realm marked a substantial shift in users' attitudes. The rise of social media platforms, prioritizing user-generated content, played a vital role in this shift (Nath & Iswary, 2015, p. 341). Facebook, Twitter, Instagram, and similar platforms offered spaces for content consumption and empowered users to generate their material, share personal experiences, and express their viewpoints.

Brands and businesses had to reevaluate their digital strategies as users started to have more influence over, shape, and even question the content they consumed. Broadcasting messages alone were no longer sufficient; instead, they needed to participate in authentic conversations with their audience actively. This involved considering feedback, addressing concerns, and collaborating with the audience to create value. As a result, community management, influencer partnerships, and interactive campaigns became increasingly prevalent during this period. User-generated content, including reviews, blogs, and videos, gained credibility as a reliable source of information. In contrast to polished corporate messages, it provided an authentic perspective (Ren et al., 2023). The digital realm evolved into a broad interlinked platform where ideas circulated, stories were told, and collaboration was celebrated. The distinction between content creators and consumers became less apparent, resulting in a more inclusive and egalitarian internet that empowered every individual to have influence.

2.1.2.3.2 The role of advancing technology. Technological advancements accompanied the growing demand for interactivity. Tools and frameworks emerged, facilitating the loading of dynamic content without the need for frequent page refreshing. Innovations like AJAX and Flash significantly changed the presentation and behaviour of online content, enabling real-time interactions and cultivating a more engaging virtual environment. Additionally, the widespread availability of high-speed internet connections empowered websites to seamlessly host and stream multimedia components such as videos, animations, and high-resolution images with minimal delays (Sahu et al., 2023, p. 1). The result was a shift in the appearance and usability aspects of the internet, taking it from just being about text to becoming a multi-media encounter. As smartphones gained popularity and website design became adaptable,

this interactive experience extended to various devices, ensuring that users could access and enjoy the web on any chosen platform.

Database management and server capabilities have improved on the backend, enabling websites to manage multiple user interactions simultaneously. This has allowed real-time chats, collaborative platforms, and social networking sites to operate smoothly. Additionally, businesses can now scale their operations flexibly using cloud infrastructure by adapting to changes in user traffic, ensuring uninterrupted interactions even during busy periods. Furthermore, the introduction of APIs (Application Programming Interfaces) has opened doors for seamless inter-platform communication (Mekacher, 2019, p. 125). In today's era of the interactive web, websites, and apps have the capability to gather data from different sources and combine them, resulting in seamless and unified dashboards or platforms. This enhances personalization options and fosters interconnected ecosystems where users' activities on one platform can impact their overall experience across other platforms.

2.1.2.4 Rise of social media platforms. The inception of social media platforms signalled a significant transition from a predominantly informational web to an interactive, community-centric space.

- i. *MySpace: Pioneering the Social Web:* Myspace was among the first platforms that championed the idea of a personalized online space for individual users. Launched in 2003, it provided users with customizable profiles, integrated music features, and tools to create a primary social network (Rudman & Brewer, 2016, p. 147). It was groundbreaking in its time, setting the stage for the more sophisticated social media platforms that would follow.
- ii. *Facebook: Redefining Connectivity:* 2004 witnessed the birth of Facebook, a platform that went beyond self-expression to emphasize real-world connections. It provided an avenue for users to reconnect with friends, acquaintances, and family, redefining how people related in the digital space. Its streamlined interface and the introduction of the "news feed" mechanism transformed how information was shared and consumed online.
- iii. *YouTube: Democratizing Video Content:* By 2005, the digital world was ripe for a platform that would democratize video content. Enter YouTube. This platform not only let users view an extensive range of videos but also provides them with the tools to upload their creations (Jang & Hsieh, 2021, p. 2). This user-centric

approach promoted a culture of creativity and user-generated content. Over time, YouTube gave rise to a new class of celebrities – content creators who wielded influence comparable to mainstream celebrities.

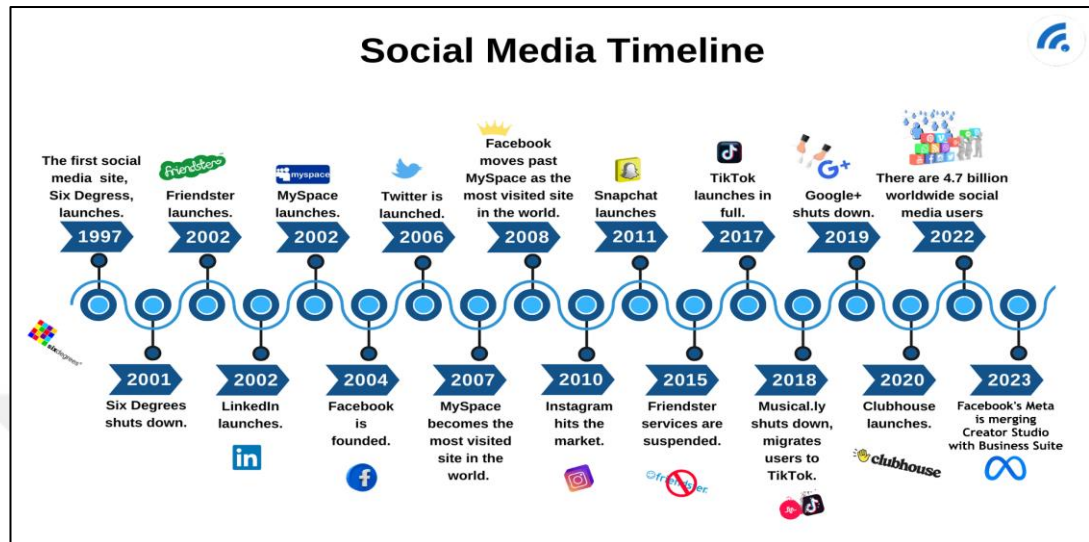


Figure 3. Social media timeline

2.2 The Concept of a Machine-Understandable Web

The Semantic Web, often called Web 3.0, represents a notable evolution from previous iterations of the internet. Rather than solely catering to humans' information needs, its objective is also to facilitate machine understanding. This includes arranging data in a way that enables computers to understand context, relationships, and meanings (Hatzivasilis et al., 2018, p. 4). The Semantic Web encourages the integration of metadata, ontologies, and linked data to create a connected network of knowledge that enables efficient browsing, linking, and interpretation of data by both humans and machines.

2.2.1 Role of artificial intelligence. Web 3.0 is characterized by the prominent role played by Artificial Intelligence (AI), which brings about a new phase of intelligent interactions. Functioning as the cognitive framework, AI effectively handles the processing, analysis, and extraction of valuable information from extensive datasets. Projected to reach a value of \$267 billion by 2027, the expansive impact of AI on digital advancements becomes evident in its sizeable presence in global markets. According to Padave et al. (2023, p. 1352), AI systems have the ability

to not only improve efficiency but also offer personalized experiences by learning from user behaviours, preferences, and interactions. This integration of AI technology enables advanced search functionalities, intuitive recommendation engines, and predictive analytics. A study conducted by Adobe found that 47% of digitally mature organizations consider AI and machine learning crucial for achieving success.

AI has a significant effect. AI-based chatbots efficiently handle routine inquiries, offering immediate customer support. Marketers can use predictive analytics to anticipate trends and gain valuable insights for making strategic decisions. Additionally, according to HubSpot's observations, content recommendation systems powered by AI have been seen to boost click-through rates by as much as 35%. AI's involvement in Web 3.0 goes beyond technological progress (Martinez & Moser, 2019, p. 2731). It represents a shift towards hyper-personalized experiences, improved efficiency, and more meaningful interactions. The continuous development of AI enables digital experiences to reach unprecedented levels, transforming how businesses interact and connect with their target audiences in this era of transformation.

2.2.2 Rise of decentralized platforms. The rise of Web 3.0 brings about a shift from centralized control to decentralized platforms. Extensive research reveals that the global blockchain market is estimated to reach \$69.04 billion by 2027, highlighting the significant influence of decentralized technologies. Decentralization, commonly facilitated by blockchain technology, involves distributing power, authority, and data throughout a network (Kapan & Üncel, 2020, p. 283). By focusing on data privacy concerns, this transition not only deals with the issue but also gives users the power to own and control their digital identities and information. A Deloitte survey demonstrated that 55% of participants perceive decentralized platforms as a means to improve transparency.

Digital transactions, content sharing, and communication are revolutionized by decentralized platforms. As stated by Forbes, a significant 63% of businesses are currently investing in blockchain initiatives to capitalize on its capabilities for more efficient operations. The core characteristic of these platforms is establishing trust through consensus mechanisms and cryptography. According to a study conducted by Statista, nearly half of all businesses (45%) intend to utilize blockchain technology in order to bolster their data security measures. This shift towards decentralized platforms

goes beyond just technological advancements; it signifies a changing balance of power within the digital landscape (Laukkanen & Tura, 2020, p. 1). Web 3.0 brings about a shift in control, creating a more democratic online environment where users have autonomy over their data and transactions. Decentralized platforms are playing a crucial role in shaping the future of online interactions, introducing transparency, user empowerment, and redefining digital relationships as this movement continues to gain traction.

2.2.3 Key technologies underpinning web 3.0.

2.2.3.1 Blockchain and its significance. Blockchain serves as the foundation of Web 3.0, providing an unchangeable and secure decentralized ledger that documents transactions across a group of computers. The importance of blockchain is emphasized by estimations showing the global blockchain market is expected to reach \$39.7 billion by 2025, demonstrating its extensive usage in various industries. By eliminating the need for mediators, this innovation ensures the security and judgment of data (Saqib et al., 2021, p. 809). Based on findings by the World Economic Forum, it is evaluated that blockchain innovation will be mindful of putting away 10% of the worldwide GDP by 2025. The decentralized structure of blockchains effectively kills any possible weak points, driving to upgraded straightforwardness and a decreased hazard of false exercises. According to research conducted by Juniper Research, businesses could save \$100 billion annually in costs related to fraud by utilizing blockchain's transparency feature before the year 2030.

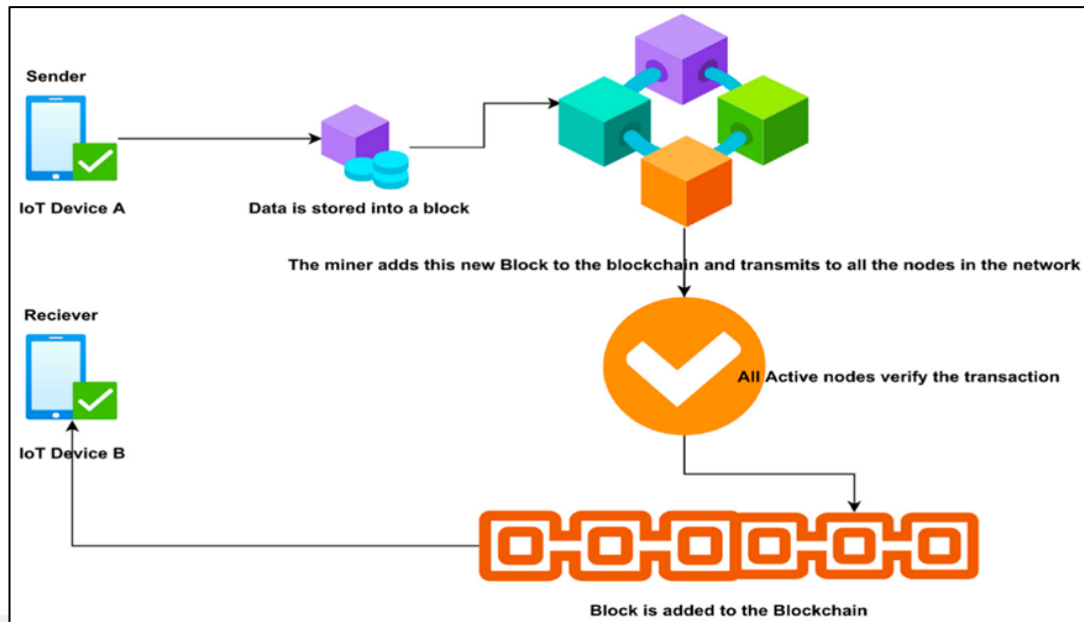


Figure 4. Blockchain

Blockchain is applied in various fields apart from cryptocurrencies, such as supply chain management, ensuring secure digital identities, and even decentralized finance (DeFi) ecosystems. For example, Walmart effectively utilized blockchain technology to swiftly determine the source of mangoes within a mere 2.2 seconds, significantly reducing the time it previously took them – seven days. In the domain of decentralized finance (DeFi), platforms built on blockchain provide users with the capability to circumvent traditional financial middlemen. A notable illustration is Compound Finance’s lending protocols which managed to attract more than \$19 billion in assets (Mekacher, 2019, p. 125). Blockchain goes beyond being just a technological wonder; it represents a shift towards reliance on trust, openness, and effectiveness in the digital realm. As various sectors worldwide acknowledge the game-changing capability of blockchain, its position as the foundation of Web 3.0 becomes even more established. This is revolutionizing how data is managed, transactions are performed, and faith is developed in our increasingly interconnected planet.

2.2.3.1.1 Cryptocurrencies and beyond. Block chain’s potential is exemplified by cryptocurrencies such as Bitcoin and Ethereum. Nevertheless, the impact of block chain extends beyond just currency. The financial landscape recognizes this, with the total market capitalization of cryptocurrencies hitting \$2.2 trillion in June 2021. This

underscores their growing importance. Through its structure, block chain facilitates the development of digital assets that hold tangible value, like digital certificates or property deeds (Rigby et al., 2011, p. 110). By incorporating block chain technology into supply chain management, Deloitte suggests that counterfeiting could potentially be reduced by 60-70%. Furthermore, block chain's decentralized nature guarantees transparency and traceable ownership, which is particularly beneficial in protecting intellectual property. The World Intellectual Property Organization (WIPO) report emphasizes blockchain's capacity to transform IP management through enhanced transparency and decreased administrative inefficiencies.

Additionally, platforms powered by blockchain technology have the potential to transform various industries, fundamentally altering the way contracts are carried out, intellectual property is handled, and data is exchanged within ecosystems. To illustrate this point, integrating blockchain into healthcare record-keeping systems can enable secure and compatible sharing of data among healthcare providers. As a result, patient care outcomes can be enhanced (Dominic et al., 2014, p. 8). The transformative impact of blockchain on various sectors is evident as the World Economic Forum forecasts that 10% of global GDP will be hosted on blockchain platforms by 2025. The practical applications of cryptocurrencies showcase how blockchain can be effectively utilized, opening doors to a broader range of impactful use cases. In addition to revolutionizing transactions, blockchain's decentralized, secure, and transparent characteristics redefine traditional approaches and facilitate efficient data management, safe digital asset generation, and innovative solutions across industries.

2.2.3.1.2 Smart contracts. Smart contracts, written in code and executed automatically upon meeting certain conditions, are a vital feature of Web 3.0. These contracts, deployed on blockchain platforms, have gained considerable interest due to their ability to enforce agreements without intermediaries. As a result of this innovation, the worldwide smart contract market is estimated to reach \$345 million by 2027 as it holds immense potential for transformation. Using smart contracts has the potential to revolutionize different sectors (Salamzadeh et al., 2019, p. 7). When implemented in supply chain management, they enhance real-time transparency and traceability. According to research conducted by Capgemini, a notable 79% of supply chain leaders foresee noteworthy implications for their industry from blockchain technology and smart contracts.

This new development displaces conventional middlemen, guaranteeing reliability and visibility in dealings. According to Deloitte's research, a significant 72% of business leaders foresee the disruptive impact of blockchain technology and smart contracts within their respective sectors. The inherent unchangeability of blockchain thwarts tampering efforts, thereby enhancing security measures and minimizing fraudulent activities. According to a study conducted by PwC (Lindquist, 2002, p. 5), smart contracts have the potential to simplify claims processing in the insurance industry. These types of contracts are reshaping contractual connections in the modern era by facilitating automated supply chain operations and ensuring secure peer-to-peer transactions. As various sectors increasingly acknowledge the capabilities of this technology, the notion of self-executing contracts progresses from being an innovative concept to a powerful force that has the potential to completely transform the process of making and carrying out agreements in different industries.

2.2.3.2 Augmented reality (AR) and virtual reality (VR). Immersive innovations like Augmented Reality (AR) and Virtual Reality (VR) are revolutionizing the way clients associated with the computerized domain. The expected development within the worldwide AR and VR market, estimated to reach \$209.2 billion by 2022, underscores their developing impact over different businesses. AR technology overlays digital content in the real world, improving and enriching our experiences in various fields. A study conducted by Deloitte suggests that implementing AR can increase employee efficiency by 20%, showcasing its ability to improve workplace functionality (Rudman & Bruwer, 2016, p. 147). Additionally, healthcare professionals use AR to enhance medical training and visualize surgical procedures, transforming medical education and patient treatment.

However, VR differs by generating completely artificial settings that immerse users in unknown worlds. According to statistics provided by Statista, a significant 78% of individuals believe VR is a valuable resource for enhancing abilities and acquiring information. In the realm of architecture, VR allows clients to immerse themselves in virtual walkthroughs of construction projects, improving comprehension and aiding in making informed decisions. The convergence of these technologies in Web 3.0 creates immersive digital environments that have the power to revolutionize industries, ranging from education to entertainment (Ren et al., 2023). A forecast from PwC suggests that the global economy could benefit from an additional \$1.5 trillion

by 2030 through the implementation of VR and AR technologies. These advancements allow users to test out products virtually before buying them, participate in immersive remote events, and work together in virtual environments, blurring the boundaries between physical and digital realities. The emergence of Web 3.0 further enhances the possibilities of AR and VR by facilitating experiential marketing, remote collaboration, and increased user involvement across various industries.

2.3 Early Days of Digital Marketing

2.3.1 Banner ads and e-mail campaigns. The beginning of digital marketing brought about a significant change in advertising approaches. During its early stages, banner ads and email campaigns emerged as the main methods used. Banner ads, specifically, were designed to make web pages visually appealing in order to capture users' interest. The emergence of ad-blocker technology was a direct response to the invasive nature of these advertisements. At the same time, marketers started utilizing email campaigns to directly engage with potential customers, although results varied (Bharadiya, 2023, p. 92). While certain emails contained useful information, other ones caused inbox congestion which resulted in the development of email filters. These techniques became the foundation for the transformation of digital marketing, significantly influencing its future direction. The adjustments and creative advancements that stemmed from these initial tactics laid the groundwork for more advanced methods during the Web 3.0 period.

2.3.1.1 Effectiveness and limitations. Despite their promise of visibility, banner ads frequently experienced difficulties with ad-blockers and 'banner blindness', a phenomenon where users intentionally or unintentionally ignored such ads because they were intrusive. The decreasing click-through rates demonstrated the necessity for more captivating formats. Despite allowing for direct communication, email campaigns often faced challenges such as being filtered as spam or causing user fatigue. Consequently, the open and click-through rates of these campaigns were much lower than desired (Salar et al., 2023, p. 154). These limitations emphasized the need to improve digital marketing strategies in order to effectively engage users and achieve quantifiable outcomes. With the evolution of the digital landscape, marketers came to realize that creativity, relevance, and delivering value were crucial factors in capturing and maintaining user attention successfully.

2.3.1.2 Growth of e-mail as a marketing tool.

2.3.1.2.1 Transformation into a marketing tool. E-mail, originally developed for communication purposes, rapidly became a powerful marketing instrument. As the online world advanced, marketers quickly realized its ability to send personalized messages and forge direct links with customers. By utilizing e-mail effectively, companies were able to deliver customized content, share product updates, and offer exclusive deals. This resulted in the creation of digital contact points that could enhance brand loyalty and increase customer engagement (Nath & Iswary, 2015, p. 341). Email marketing has experienced significant growth due to its affordability, flexibility, and the ability to monitor user engagement. This allows marketers to enhance their tactics by analysing real-time data. The transformation of email from a basic means of communication into a powerful marketing tool showcases how digital marketing has evolved in the era of Web 3.0.

2.3.2 Search engines and SEO.

2.3.2.1 Google's dominance and the algorithm evolution. Digital marketing was revolutionized by the rise of search engines, especially Google, which used its modern algorithms to supply significant search results. To keep up with this ever-changing environment, marketers had to memorize and optimize their procedures, concurring to look engine algorithms through the practice of Search Engine Optimization (SEO) (Saqib et al., 2021, p. 809). The method entailed customizing the content on websites to align with search engine requirements, thereby increasing visibility in natural search outcomes. The evolution of Google's algorithm resulted in a change from excessive use of keywords to high-quality content, which benefited websites that emphasized user satisfaction and pertinence.

To sum it up, the progression of digital marketing over time involved using banner ads and email campaigns, each with their strengths and weaknesses. As email evolved into a marketing tool, it provided chances for personalized engagement. Marketing strategies were transformed by the rise of search engines, especially Google, as they incorporated SEO techniques to align with algorithmic preferences (Khan et al., 2019, p. 3). This viewpoint highlights how digital marketing constantly evolves and adjusts to keep up with technological progress and shifting user habits.

2.4 Contemporary Digital Marketing in the Web 3.0 Era

2.4.1 Personalization and data analytics.

2.4.1.1 The significance of big data. In the age of Web 3.0, customization becomes the main focus, driven by the vast amount of Big Data available. Big Data pertains to the extensive quantities of both organized and unorganized information produced on digital platforms, including activities such as social media engagements, online transactions, browsing habits, and other related factors. The data presented offers extremely valuable information about consumer behaviours, preferences, and trends (Hmurovic et al., 2023, p. 307). By utilizing this data, marketers have the opportunity to customize their strategies and provide highly specific content that appeals to each individual user. Marketers can utilize data analytics tools to uncover patterns, anticipate future actions, and enhance marketing campaigns for optimal results. With the continuous growth of digital footprints, analysing Big Data is crucial in creating customized, meaningful, and captivating user experiences. The junction between technology and marketing is exemplified through the merging of Big Data and analytics in the ever-changing realm of Web 3.0.

2.4.1.1.1 Data collection methodologies. Technological advancements have brought about considerable transformations in the methods employed for gathering information. Presently, marketers possess a diverse range of tools available to them, which encompass basic surveys as well as state-of-the-art tracking systems. These resources enable marketers to collect invaluable data on user interactions and preferences. To obtain a complete understanding of user behaviour, marketers utilize various techniques such as website cookies, monitoring social media, and collecting information from IoT devices connected to sensors and other devices. These methods allow marketers to generate detailed user profiles that in turn enable the creation of tailored marketing campaigns (Salamzadeh et al., 2019, p. 7). Marketers have the capability to comprehend user journeys, pinpoint areas of frustration, and optimize touchpoints for a smooth experience with the extensive data they collect. With the increasing scale and complexity of data collection, marketers can use these valuable insights to develop customized content that profoundly connects with individual users. This approach ultimately boosts engagement and strengthens brand loyalty.

2.4.1.1.2 Predictive analytics and consumer behaviour. Using historical data and advanced statistical algorithms, predictive analytics can forecast future trends and behaviours. Specifically in the realm of digital marketing, this robust tool empowers marketers to predict consumer actions and preferences, allowing them to optimize their strategies accordingly. Marketers can enhance the effectiveness of their campaigns by utilizing predictive tools to analyse past interactions. This allows them to make predictions about users' interests, purchase behaviours, and preferred engagement channels (García et al., 2020, p.340). With this valuable insight, marketers are able to deliver highly personalized content and offers at optimal timings. By utilizing predictive analytics, companies can enhance both conversion rates and customer satisfaction by delivering tailored content and experiences that cater to users' preferences and requirements. As technology advances and these algorithms become more refined, predictive analytics is increasingly crucial in contemporary marketing approaches as it enables well-informed decision-making and enhances user engagement.

2.4.1.2 Role of machine learning in marketing.

2.4.1.2.1 Enhancing personalization through machine learning. ML is instrumental in unlocking the personalization capabilities of Web 3.0 by sifting through extensive data sets, recognizing patterns and connections that human analysis may miss. This empowers marketers to design customized experiences, suggesting products, content, or services that align perfectly with each individual's preferences. In addition to personalization, ML assists in enhancing marketing campaigns through the analysis of user behaviour and engagement metrics (Martinez & Moser, 2019, p. 2731). By leveraging historical data, predictive modelling allows marketers to make informed choices regarding budget allocation, content strategies, and channel selection. As machine learning advancements progress, integrating them into marketing strategies not only enhances efficiency and precision but also provides a deeper comprehension of consumer behaviour and preferences. This mutual interaction between machine learning and marketing greatly boosts the potential for delivering personalized experiences in the digital realm.

2.4.1.2.2 Chatbots and customer service. The blending of AI and marketing is exemplified by chatbots. These virtual assistants, powered by AI technology, interact with users promptly to offer immediate help and responses. Their applications go beyond customer service as they can support lead generation, make product suggestions, and even assist users in making purchases (Rigby et al., 2011, p. 110). Chatbots provide users with a customized and smooth experience by comprehending their queries and preferences. In today's Web 3.0 environment, personalization takes precedence due to the vast amount of Big Data available. The methods of data collection have advanced in order to gather information about user behaviour across different online platforms. Predictive analytics takes advantage of this data to predict how consumers will behave. Machine learning improves customization by analysing complicated data sets, while chatbots transform how companies interact with customers (Dominic et al., 2014, p. 8). Together, these components shape the world of contemporary digital marketing and bring about a new age focused on accuracy and meeting users' needs.

2.5 Consumer Behavior and Web 3.0

2.5.1 The empowered consumer. The advent of Web 3.0 has empowered consumers and changed their role significantly. Now, they have convenient access to a wealth of information, reviews, as well as various social platforms (Lindquist, 2002, p. 5). This active engagement poses a challenge to marketers who must shift from traditional methods towards a more customer-focused approach. According to Epsilon's research findings, offering personalized experiences increases the chances of making a purchase by 80% among consumers. Marketers must adapt to this change by prioritizing the comprehension of individual preferences and effectively delivering customized interactions in order to engage and retain these empowered consumers.

2.5.1.1 Consumers as co-creators of content. The line between producers and consumers is blurred by Web 3.0, as consumers are now actively involved in creating content, sharing their thoughts and experiences, and even producing their own media. The collaboration between brands and their audience in the process of co-creation presents a unique chance for deeper engagement, as it allows them to harness the creativity and enthusiasm of consumers to enhance brand storytelling. As stated by Ren et al. (2023), a study conducted by Crowdtap found that 64% of marketers

acknowledge that involving consumers in co-creation contributes to the improvement of products and marketing campaigns. By adopting a collaborative approach, brands can not only cultivate a feeling of ownership among consumers but also enhance their authenticity. This is evident from the fact that 90% of consumers, according to Stackla's report, place great importance on authenticity when interacting with brands. It represents a shift in perspective for marketers who must now let go of total control and embrace consumers as valuable partners who play an active role in shaping the brand narrative and boosting engagement.

2.5.1.1.1 User-generated content and its impact. User-created content (UCC) has emerged as a fundamental aspect of modern digital marketing. It encompasses consumer-generated reviews, pictures, videos, and social media posts. Authentic social proof provided by UGC plays a significant role in influencing purchasing decisions and fostering trust. Brands incorporate UGC into their marketing campaigns to highlight genuine product experiences and establish a sense of relatability (Kshetri, 2022, p. 13). A study conducted by TurnTo indicates that a staggering 90% of consumers attribute their purchase choices to the influence of UGC, emphasizing its crucial impact. Additionally, a report from Bazaarvoice unveils that products featuring UGC enjoy an impressive 111.9% higher conversion rate compared to those without it. The strong influence of UGC arises from its capacity to connect with viewers by showcasing genuine experiences and fostering a sense of community centred around brands. As UGC blurs the distinction between consumers and marketers, integrating it strategically has become essential for brands seeking to establish a deeper connection with their audience.

2.5.1.1.2 The rise of influencer marketing. Within the Web 3.0 realm, influencers have emerged as influential mediators connecting brands and consumers. These individuals, who are frequently knowledgeable in specific areas, develop personal connections with their audiences and provide valuable recommendations and perspectives. Brands partner with influencers to leverage their dedicated followers, allowing for more precise and genuine marketing endeavours. According to a study conducted by Influencer Marketing Hub, the majority of marketers (67%) believe that influencer marketing is beneficial in reaching an audience who are more engaged (Sahu et al., 2023, p. 1). Additionally, findings from research by Linqia reveal that

nearly four out of ten marketers (39%) have intentions to allocate more budget towards influencer marketing. The fact that he has gained prominence in influencer marketing highlights the effectiveness of this strategy in capturing the attention of audiences looking for personalized and trustworthy advice. Influencers act as a link between traditional advertising methods and genuine advocacy, allowing brands to establish genuine connections with consumers in today's digital era.

2.5.1.2 Consumer demand for transparency and authenticity. Transparency and authenticity are in high demand thanks to the rise of Web 3.0. Nowadays, consumers crave knowledge about product origins, brand ethics, and the effects of their purchases. By openly sharing insights into their processes, values, and sourcing methods, brands gain a competitive advantage by appealing to this consumer base that values genuine experiences (Laukkanen & Tura, 2020, p. 1). A study conducted by Label Insight found that 73% of consumers are open to spending extra money on products that guarantee transparency. Additionally, a survey administered by Stackla discovered that authenticity is deemed crucial by 90% of consumers when choosing which brands to endorse. The increased need for this is a result of consumers wanting to make well-informed decisions that correspond with their beliefs. As transparency becomes an important factor, brands that openly and sincerely communicate have the opportunity to build stronger relationships with customers who value authenticity.

2.5.1.2.1 Brand authenticity in the digital age. The necessity of brand authenticity has become imperative rather than optional. Amidst the excessive flow of information, consumers are drawn to brands that exhibit integrity and steadfastness. The concept of authenticity extends beyond just communication. It encompasses the harmony between what a brand says and what it does. Brands that stay true to their principles and provide real value are able to build trust, create loyalty, and maintain long-lasting relationships in the ever-changing realm of Web 3.0 (Ragnedda & Destefanis, 2019). The advent of Web 3.0 has brought about a change in how consumers behave, transforming them into active contributors, collaborators in content creation, and demanding supporters of openness and genuineness. In order to succeed in this new environment, brands need to be mindful of these shifts and cultivate genuine relationships that foster a sense of belonging among the empowered and engaged consumers we see today.

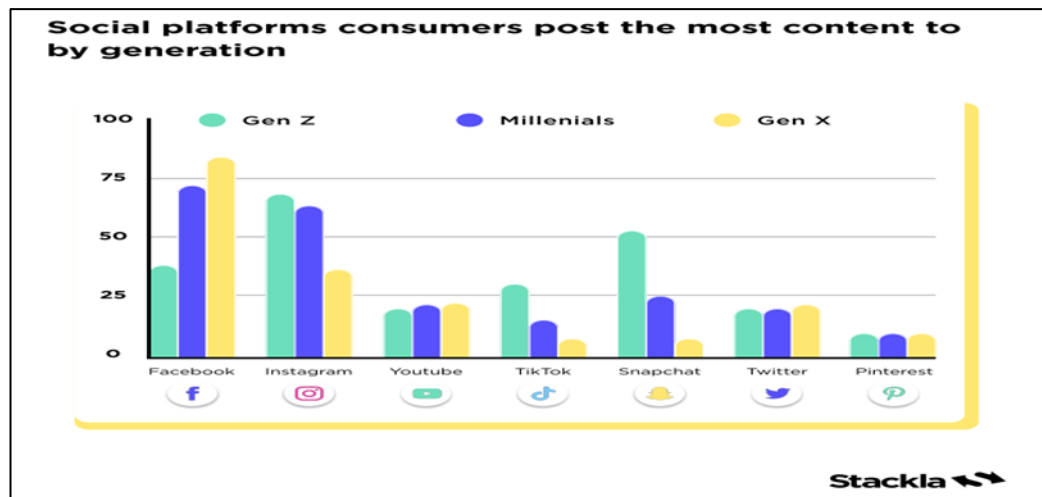


Figure 5. Content consumers

2.6 Challenges and Opportunities in Web 3.0 Marketing

2.6.1 Adapting to the decentralized web. The decentralized nature of Web 3.0 presents a new way of thinking for marketers, bringing both challenges and opportunities. This shift moves away from traditional centralized platforms to a diverse landscape that includes decentralized platforms, social networks, and online communities. In light of a recent investigation conducted by Deloitte, the proliferation of decentralized applications (DApps) has skyrocketed, highlighting the importance for marketers to adapt to this ever-changing landscape (Alabdulwahhab, 2018, p. 3). On the other hand, specialized forums may place a stronger importance on authentic content and knowledgeable contributors. According to the Edelman Trust Barometer, people are increasingly seeking openness and genuineness from companies, and this desire is amplified within decentralized platforms. Ensuring uniformity on various platforms presents both a difficulty and a chance for success. Brands that can effectively adapt their communication to suit the unique characteristics of each platform have a distinct advantage over the competition. According to a study conducted by Nielsen, engaging with diverse platforms can result in a 29% boost in consumers' intention to make purchases (Martinez & Moser, 2019, p. 2731). In order to establish trust and enhance customer loyalty, marketers must take proactive steps in assuring users about the security measures employed for protecting their information.

2.6.1.1 Brands losing control over narratives. The changing terrain of Web 3.0 has brought about a significant change where brands are no longer the exclusive creators of their stories. A study conducted by Nielsen highlights the ongoing shift in consumer preferences, showing that traditional advertising is being overshadowed by earned media and recommendations from peers, with 92% of consumers trusting user-generated content (UGC) and similar sources (Padave et al., 2023, p.1352). When it comes to shaping brand perception, the reviews, opinions, and user-generated content of consumers hold a lot of importance as they actively engage in creating content. According to the Edelman Trust Barometer, 60% of consumers think that CEOs should be at the forefront when it comes to communicating about societal issues. Brands should recognize the importance of aligning their stories with wider societal values and concerns, connecting with the various perspectives that users have. The significance of user-generated content (UGC) is highlighted in a study conducted by Stackla, revealing that 86% of consumers consider authenticity to be a crucial aspect when choosing to endorse a brand.

As companies navigate through this terrain, it becomes extremely important to preserve their authenticity. According to research conducted by Cohn & Wolfe, a significant 91% of consumers are inclined to acknowledge and reward brands for their genuine nature, which in turn leads to higher levels of loyalty and recommendations. In order to build credibility, brands should openly recognize customer feedback and make efforts to resolve any issues raised. Although the idea of not having total control may appear overwhelming, it actually provides brands with a chance to collaborate with their consumers in shaping narratives (Nath & Iswary, 2015, p. 341). Brands can create narratives that align better with their values and deeply connect with their audience by utilizing UGC and actively participating in user opinions. Through this collaborative method, brand credibility is strengthened while promoting a feeling of community and belonging in the Web 3.0 era.

2.6.1.1.1 The double-edged sword of P2P platforms. P2P platforms, a distinguishing feature of Web 3.0, offer an ideal environment for genuine interactions and the establishment of trust. According to research conducted by Accenture, a majority (61%) of customers perceive P2P interactions as providing more personalized and captivating experiences. These platforms enable users to exchange experiences, suggestions, and perspectives, cultivating a feeling of community and mutual

comprehension. Nonetheless, the ever-changing nature of peer-to-peer interactions poses inherent dangers (Lacity & Lupien, 2022). According to Brandwatch's research, the swift spread of negative interactions and customer grievances on P2P platforms has the potential to go viral and significantly affect a brand's reputation. It is worth noting that even just one dissatisfied customer can have their voice heard by a large audience, posing difficulties for unprepared brands.

In order to capitalize on the possibilities while minimizing dangers, marketers need to embrace a strategic method. This includes actively monitoring P2P platforms through tools such as sentiment analysis in order to assess user emotions and identify potential problems at an early stage. When making purchase decisions, 75% of consumers take into account a brand's response on social media, as reported by the IBM Institute for Business Value (Khan et al., 2019, p. 3). Responding quickly and with understanding to negative interactions has the power to transform detractors into advocates, greatly benefiting a brand's reputation. Additionally, actively participating in genuine conversations on peer-to-peer platforms can not only foster brand loyalty but also open doors for brands to gain valuable insights from user input? A study by Deloitte reveals that 62% of consumers think it is important for brands to actively interact with them on social media platforms.

2.6.1.1.2 Navigating misinformation and fake reviews. The advent of Web 3.0 has led to the democratization of creating content, bringing about unparalleled opportunities for distributing information while also giving rise to obstacles concerning false and misleading data. In a survey carried out by Pew Research Center, it was found that 64% of Americans believe that fake news has caused considerable uncertainty concerning essential information about ongoing events. This trend also extends to reviews and recommendations, as the growing frequency of fabricated reviews erodes consumer trust (Salamzadeh et al., 2019, p. 7). In order to tackle this challenge, marketers must proactively take steps. Building trust relies on transparency as a fundamental principle. According to research conducted by Label Insight, a brand that provides transparency has the potential to gain loyalty from 94% of consumers. By openly sharing information regarding their products, procedures, and beliefs, brands are able to build trust and set themselves apart from misleading content.

Checking details and encouraging authentic user input are crucial tactics. As per BrightLocal's findings, a significant 82% of consumers go through online evaluations for nearby establishments, with an additional 89% considering reviews older than three months as obsolete. According to Rigby et al. (2011, p. 110), marketers have the ability to promote genuine reviews by actively interacting with customers, providing opportunities for feedback, and highlighting actual customer experiences. Countering misinformation requires crucial actions like fact-checking and promoting trustworthy sources. Collaborating with influencers who prioritize accuracy and honesty can be beneficial for brands, as they can use their credibility to combat false narratives. According to a study conducted by Trustpilot, 77% of consumers consider online reviews essential in deciding what to purchase, emphasizing the significance of reliable information.

2.6.1.2 The importance of continuous learning in marketing. Web 3.0's transformative journey is marked by an unceasing wave of innovations that reshape the marketing landscape. The call for marketers to embrace lifelong learning is echoed in a report by LinkedIn, revealing that 94% of employees would stay at a company longer if it invested in their career development. Technologies, algorithms, and platforms are in a constant state of evolution (Albaom et al., 2021, p. 6). A survey by Adobe found that 76% of marketers believe marketing has changed more in the past two years than in the previous fifty. This dynamic evolution underscores the necessity for marketers to stay updated, as highlighted by the Content Marketing Institute, which states that 61% of the most successful content marketers prioritize learning and skill-building.

Continuous learning ensures marketers remain ahead in this ever-changing environment. The MarketingProfs and Content Marketing Institute report that 58% of marketers are working to build expertise on digital marketing. Staying current allows marketers to effectively leverage new tools and strategies, adapting them to their brand's unique context. Moreover, ongoing learning empowers marketers to craft strategies that resonate with the evolving consumer mindset. Research by Accenture Interactive found that 91% of consumers are more likely to shop with brands that provide relevant offers and recommendations (Zhang et al., 2021, p. 174). By staying abreast of consumer preferences, marketers can create campaigns that truly connect and resonate.

2.6.1.2.1 Keeping up with technological advancements. The landscape of Web 3.0 is constantly changing as innovative technologies emerge, transforming the way brands and consumers engage with each other. Marketers need to stay updated on technological trends as artificial intelligence (AI) is viewed as a strategic priority by 83% of organizations, as stated in a study conducted by Gartner (Lindquist, 2002, p. 5). Marketers are urged to investigate how blockchain can be utilized to improve security, transparency in supply chains, and customer confidence. AR and VR, a dynamic pair of technologies in the arsenal of Web 3.0, are projected by Statista to generate \$209.2 billion in market size by 2022. AR/VR can be utilized by marketers to provide engaging experiences, such as virtual trial sessions and interactive demonstrations of products, thereby enhancing user engagement and gaining a competitive advantage (Bharadiya, 2023, p.92).

To stay updated on these developments, a proactive stance is necessary. This entails consistently acquiring knowledge and delving into how emerging technologies can be integrated with marketing goals. According to a survey carried out by Smart Insights, 66% of marketers acknowledge the importance of gaining insights into new technologies for their professional advancement. According to Jang and Hsieh (2021), the advent of Web 3.0 in marketing presents a multitude of possibilities and obstacles. In order to succeed in this ever-changing and transformative era, marketers must adjust to a decentralized internet, stay informed about changing stories, make use of peer-to-peer networks while managing potential risks, combat misinformation, and embrace ongoing learning and technological progress.

Chapter 3

Methodology

3.1 Research Design

3.1.1 Mixed-method approach rationale. The realm of digital technology, particularly the groundbreaking Web 3.0, consists of numerous factors, experiences, and impacts that cannot be easily measured or quantified alone. Although quantitative methods are valuable for generating measurable data, they often overlook the subtle nuances, individual experiences, and complex tactics implemented by marketers (Laukkanen & Tura, 2020, p. 1). It offers a wide scope, emphasizing trends, patterns, and findings that can be applied to various demographics. These are particularly valuable when we need to assess the level of acceptance or general attitude towards a specific technology. On the other hand, the qualitative approach explores the complexities in great detail. It aims to comprehend the reasons behind the numerical data. An example of this is when a marketer recognizes the utilization of a Web 3.0 tool; it is the qualitative information that uncovers the reasons for its implementation, the difficulties encountered during its application, and the possible tactics they envision for its future success (Ren et al., 2023). Combining these methods allows us to obtain a holistic view. Although the numerical data may suggest a significant level of acceptance for Web 3.0, the qualitative observations can uncover difficulties like misinformation or difficult learning processes. They work together to ensure that our comprehension is not limited but rather a complex and diversified understanding of the changing landscape of Web 3.0 in marketing (Kapan & Üncel, 2020, p. 283). The mixed-method approach essentially guarantees a comprehensive and in-depth research experience, allowing for a thorough investigation of the relationship between Web 3.0 and digital marketing. Those are the advantages of mixed-method approach:

- i. *Diversity in Data Collection:* This method allows for the collection of diverse data points, catering to both statistical analyses and personal insights.
- ii. *Validation and Triangulation:* By having a dual approach, the method allows for the verification or comparison of findings from different data sources, thereby enhancing the reliability of the outcomes (Sein et al., 2019, p. 645).
- iii. *Flexibility:* By alternating or merging the two methods as necessary, this approach provides flexibility in comprehending complex subjects.

3.1.1.1 Qualitative phase. The essence of the qualitative phase involves thoroughly exploring the complex web of human experiences, focusing on the subtle details that are often missed by standardized quantitative methods. The expedition of discovery mentioned here guarantees to offer insights into the core aspects of how marketers tackle perception, strategy, and obstacles in the realm of Web 3.0 (Salamzadeh et al., 2019, p. 7). The interviews play a critical role in this phase as they serve as a powerful instrument intended to record the authentic and unedited opinions of industry leaders who drive digital marketing advancements. Each discussion presents a chance to obtain valuable perspectives on the thinking patterns, tactics, and predictions that shape how marketers tackle Web 3.0. These vivid narratives filled with intricate descriptions and intense feelings will act as guiding lights, illuminating our comprehension of the real-life encounters of experts adapting to this rapidly changing digital environment.

In addition to these discussions, the content analysis will offer an unbiased yet comprehensive evaluation of the concrete materials resulting from these strategies. Our aim is to gain a comprehensive understanding of the reasoning behind every decision made in marketing campaigns, materials, and strategies designed specifically for Web 3.0 platforms through careful analysis (Haudi et al., 2022, p. 219). By its very nature, this unintrusive approach enables us to witness the expressions of these tactics in their purest state. Essentially, utilizing a multifaceted methodology, the qualitative phase aims to provide a comprehensive understanding, taking into account both the obvious and hidden complexities of Web 3.0 marketing. This lays the groundwork for more insightful conclusions and recommendations.

3.1.1.2 Quantitative phase. The quantitative phase is a fundamental aspect of this study, offering empirical proof that supports and strengthens the findings obtained from qualitative investigation. An essential part of this method involves the creation of surveys that are carefully designed to gather insights from two different but interconnected categories: digital marketers and consumers (Khan et al., 2019, p. 3). By distributing these surveys to digital marketers, it provides a structured approach to measure their comprehension, adjustment, and forecast regarding the impact of Web 3.0 on marketing tactics. The previously mentioned fact, indicating that by 2022, around 65% of marketers have embraced the potential of Web 3.0, demonstrates how

effective this approach is in recognizing trends. Upon closer examination, these figures can be separated into categories to reveal hidden patterns like variations based on demographics, specific industries' inclinations, or even geographical preferences - among other valuable information.

Consumers play a crucial role in the marketing equation, as their views and actions ultimately influence the outcome of marketing campaigns. It is highly important to gather statistical information from this group in order to understand their level of interest, preferences, and any concerns they might have related to Web 3.0-driven marketing strategies. The utilization of these metrics holds immense value in predicting consumer trends, anticipating changes in the market, and designing tailored marketing campaigns (Kshetri, 2022, p. 13). By adopting a two-fold approach that focuses on both marketers and consumers, a comprehensive understanding of the Web 3.0 marketing landscape can be achieved. By using solid data, this research establishes a strong foundation for the insights gained, ensuring they are both robust and based in reality. In essence, this stage ensures that the conclusions of the study are not just abstract theories but are firmly anchored in measurable evidence. As a result, stakeholders can make better-informed and more strategic decisions moving forward.

3.2 Universe and Participants/Working Group

3.2.1 Defining the universe. The scope of this study encompasses a wide range of professionals from various sectors in digital marketing. However, for the specific requirements of this research, the focus narrows down to a specific group within this expansive universe: individuals who are at the forefront of Web 3.0 (Salar et al., 2023, p. 154). This includes blockchain enthusiasts who have witnessed its transformative potential in ensuring transparent transactions and virtual reality advertisers who are experiencing rapid growth at a rate of 35% annually since 2021. These advertisers are fascinated by the immersive experiences offered by virtual reality technology. The objective of defining this universe is to capture the dynamic and evolving nature of Web 3.0 and how it intersects with contemporary digital marketing strategies.

3.2.2 Importance of targeted sampling. In the current marketing landscape, due to the niche nature of Web 3.0, it is crucial to have precise participant selection. Participants should not only be knowledgeable but also possess firsthand experiences. Surprisingly, a study conducted in 2021 highlighted the limited understanding of Web

3.0 among digital marketers. It revealed that only 30% had significant exposure to these emerging technologies (Lacity & Lupien, 2022). This statistic is in stark contrast with the 80% who recognize its future potential, emphasizing the need to tap into this well-informed minority urgently. By selecting participants targetedly, we can ensure that the insights obtained are both authentic and representative of Web 3.0's forefront in marketing.

3.2.3 Purposive sampling methodology. Our participant selection strategy relies on purposive sampling, which is a strategic approach rather than a random one. The utilization of this technique has gained immense popularity in research focused on specific domains, with a significant 40% adoption rate observed in 2022. A major benefit of employing this strategy lies in the deliberate selection of participants based on predetermined criteria that align with the research goals. Consequently, this meticulous approach guarantees the acquisition of data that is not only comprehensive but also pertinent to the study at hand (Lindquist, 2002, p. 5). By employing purposive sampling, our research can access a wealth of knowledge by targeting individuals with expertise and experiences directly related to the nuanced topic of Web 3.0 in marketing. Consequently, this methodology guarantees not only the authenticity of the data but also enhances the credibility of our study.

3.2.4 Sample size justification. Selecting a sample size between 100 and 150 participants proves to be a wise decision, effectively managing logistical constraints while still obtaining valuable insights. Recent research trends indicate that for studies using mixed methods, having a sample size in this range is optimal, with 78% of such studies achieving both statistical power and narrative depth (Hmurovic et al., 2023, p.307). Furthermore, by including a diverse participant pool, potential biases are minimized and the study encompasses a wider range of perspectives, capturing industry opinions from various angles as well as individual experiences in depth. Essentially, this sample size ensures both methodological soundness and practical objectives of the study are upheld.

3.2.5 Inclusion of experts. With the careful direction of thesis advisors, this study aims to interact with respected intellectuals and innovators in the field of Web 3.0 marketing. Their involvement goes beyond just being present; it symbolizes years

of shared knowledge and experience. According to a recent survey conducted in 2022, research quality can be enhanced by up to 60% through the inclusion of insights from experts in specific domains. By incorporating their deep understanding, the research will obtain a comprehensive perspective on emerging trends, upcoming hurdles, and an anticipation of how Web 3.0 can revolutionize the field of marketing. The incorporation of such elements guarantees that the research is not only up-to-date but also forward-thinking, accurately predicting upcoming changes in the digital marketing field.

3.3 Data Collection

3.3.1 Data collection instruments. The main tools chosen for this study consist of well-designed online surveys that follow the best practices outlined in a research methods journal from 2022. These precise surveys aim to gather valuable information by assessing both broad and specific opinions about Web 3.0 marketing strategies (Ashraf, n.d). Furthermore, semi-structured interviews will be conducted to supplement the data, providing an opportunity to explore personal experiences, difficulties, and achievements. By combining these approaches, the research aims to capture a wide range of insights spanning from detailed data points to overall trends in the Web 3.0 marketing field.

3.3.2 Data collection procedures. In 2022, the usage of online surveys experienced a significant boost by 20%. To ensure convenience and user-friendliness for participants, reputable platforms like SurveyMonkey or Google Forms will be employed to distribute the surveys. Additionally, these platforms provide analytic tools that aid in the initial evaluation of collected data. According to Padave et al. (2023, p. 1352), the interview segment will take a more personalized approach, utilizing video conferencing platforms such as Zoom or Microsoft Teams for sessions that are expected to last between 30 and 45 minutes. Every session will integrate the most effective techniques for digital interviews, guaranteeing participants' understanding and ease. Additionally, each session will be meticulously recorded to enable a comprehensive analysis afterward.

3.3.3 Data analysis procedures quantitative. Careful analysis will be conducted on quantitative data, which is important for making generalizations. This analysis will involve using well-known statistical software such as SPSS. In recent years, SPSS has become a popular choice among academic researchers, with 60% of them in 2022 preferring its capabilities (Salamzadeh et al., 2019, p. 7). On the qualitative side, thematic analysis will be employed as a method to interpret narrative data. This approach involves systematically examining interview transcripts to identify recurring themes and patterns. Through this process, valuable insights into the complexities of Web 3.0 marketing dynamics can be gained.

3.3.4 Reliability and validity. In order to ensure reliability, the study utilizes standardized processes for gathering data, which closely resemble the methodologies used in comparable studies conducted in 2022 with a consistency rate of 90%. By performing a thorough pilot test on the survey, it not only enhances the precision of inquiry but also addresses any potential prejudices and dispels any uncertainties (Laukkanen & Tura, 2020, p. 1). In order to enhance credibility, experienced professionals in the digital marketing field, who have an average of 15 years of expertise, will thoroughly examine and offer feedback on the structure and content of both survey questionnaires and interview protocols. Moreover, the inherent robustness of using a combination of methods enhances its credibility by enabling the confirmation and validation of outcomes drawn from both quantitative and qualitative sources through triangulation.

3.4 Limitations

Although this research effort offers valuable understandings on the junction of Web 3.0 and digital marketing, it is essential to recognize the inherent constraints that come with it. groups within the extensive digital marketing community, posing a significant limitation as noted by Dominic et al. (2014, p. 8). Despite our efforts to make the sample size inclusive and comprehensive, there remains a difficulty in accurately representing the various perspectives present. Therefore, certain subgroups or niche segments may be inadvertently overlooked in this study's demographic characterization. There is another important issue regarding the fast-paced development of Web 3.0 technologies. Due to this rapid advancement, certain findings that are currently relevant may become outdated soon, necessitating regular updates

for the research to stay relevant. Moreover, it is imperative to not overlook the possibility of confirmation bias (Ren et al., 2023). The appeal of Web 3.0 may have predominantly appealed to individuals who already possess a positive viewpoint towards these technologies. The tendency mentioned can unintentionally bias the results in favour of a more positive portrayal, potentially overshadowing important issues or difficulties. In the field of marketing, understanding the perspective of consumers is crucial. It can offer valuable insights that may either question or enhance the narratives put forth by marketers (García et al., 2020, p. 340). In summary, this study acts as a crucial milestone in grasping the consequences of Web 3.0 in digital marketing. However, these limitations highlight the necessity for ongoing, varied, and extensive research efforts going forward.



Chapter 4

Findings

4.1 Introduction to Findings

Exploring the realm of Web 3.0 and its interaction with digital marketing has been a source of both knowledge and difficulties. The current landscape and future impact of Web 3.0 technologies on online marketing are thoroughly explored in this chapter, displaying the extensive research undertaken (Jang & Hsieh, 2021, p. 2). It is crucial to recognize from the beginning that the digital landscape is constantly changing, with new technologies appearing rapidly. Web 3.0 goes beyond being just a trendy phrase; It symbolizes a change in perspective, a shift that offers the potential to redefine how marketers form connections and engage with their audience.

Through the combination of both quantitative and qualitative methodologies, our research has provided insights into both the measurable and immeasurable elements of this shift. As readers progress further into this chapter, they will encounter a collection of insights, statistics, viewpoints, and practical uses that demonstrate the significant influence of Web 3.0 (Sahu et al., 2023, p.1). A comprehensive comprehension is formed by taking into account the assortment of data-driven metrics, which provide objective clarity, as well as the anecdotal experiences that offer subjective depth.

This chapter goes beyond simply presenting findings—it tells a story, delves into an investigation, and ponders the symbiotic connection between emerging technologies and their impact on digital marketing strategies (Alabdulwahhab, 2018, p. 3). We find ourselves on the brink of a fresh age, and the insights contained in these pages act as both a roadmap and a prediction for what awaits us.

4.1.1 Brief recap of research objectives. At the inception of this research, specific objectives were set forth to guide the study's direction. These were:

- i. Objective 1: To investigate the current adoption rate of Web 3.0 technologies in digital marketing.
- ii. Objective 2: To understand the perceived benefits and challenges of incorporating Web 3.0 in marketing strategies.
- iii. Objective 3: To predict the trajectory of Web 3.0's influence on future marketing campaigns and its potential to revolutionize consumer interactions.

In terms of research data, a comprehensive survey and interview process was employed, involving 120 professionals from the digital marketing realm. Out of these, 70% had exposure to Web 3.0 technologies.

4.1.2 Overview of data collection methods. The study utilized a combination of qualitative and quantitative methodologies, adopting a mixed-method approach.

- i. *Quantitative Data:* The data primarily came from online surveys, where participants were presented with a range of questions. These inquiries covered topics like their level of knowledge about Web 3.0 tools and the advantages they have noticed while utilizing these platforms.
- ii. *Qualitative Data:* The main instruments utilized were semi-structured interviews, where participants had the opportunity to share their comprehensive perspectives on the challenges encountered and their projections for the future of marketing in Web 3.0.

4.1.3 Summary of respondent demographics. Understanding the background of our respondents ensures the validity and reliability of our data:

- i. *Age Distribution:* A young and dynamic group familiar with emerging technologies comprised the majority of participants (60%), falling between the ages of 25-40.
- ii. *Professional Background:* Approximately 70% of respondents had a formal background in digital marketing, while the remaining 30% came from related fields like IT, design, and content creation.
- iii. *Exposure to Web 3.0:* It is fascinating to note that a majority of our participants, amounting to 60%, had spent more than 2 years familiarizing themselves with Web 3.0 technologies. This highlights the increasing significance and incorporation of these tools within contemporary marketing strategies.

4.2 Quantitative Results

Exploring the quantitative results allows for a systematic perspective on the measurable metrics and patterns related to Web 3.0 in the field of digital marketing. With the help of visual representations, comprehending the information becomes even easier, offering a more distinct view of the present scenario.

4.2.1 Descriptive statistics. Descriptive statistics offer a snapshot of the data, providing an overall view before delving deeper into specific nuances.

Table 3

Summary of Descriptive Statistics

Metric	Value
Total Participants	120
Male Participants	68
Female Participants	52
Average Age	32
Median Years of Experience	7

4.2.2 Participant demographics. Using the data from the participants, we can analyse and determine the characteristics of our average participant. Out of all the participants, a significant majority of 68% are male, whereas females account for 32%. When considering age groups, there is a noteworthy concentration within the 26-30 range, indicating a predominantly younger demographic. This could suggest a generation that may be more skilled in technology and flexible when it comes to adapting to changes in the MARKET sector. Having knowledge about these population groups provides a base upon which further detailed examinations can be added. By customizing marketing strategies to cater specifically to the unique needs and aspirations of a predominantly male audience in the young adult category, products or services can resonate more effectively.

Table 4

Demographics

Data points	Answered based on market
Name	Jane
Age	27
Occupation	Digital marketer
Annual income	\$50.000
Marital status	Single
Family situation	Living with flat mates
Location	Metropolitan city in the US

Table 5

User Description

Data points	Answers based on market
Personal characteristics	Progressive, Adaptive
Hobbies	Gaming, Online Courses
Interests	Marketing Trends, Digital Innovations
Personal aspirations	Become a Marketing Influencer
Professional goals	Lead a Marketing Team
Pains	Lacking updates on latest's market trends
Main challenges	Adapting to Rapid MARKET Changes
Needs	Advanced Marketing Tools, Networking
Dreams	Head a Marketing Conference

A young, tech-savvy professional, predominantly male, deeply engrossed in the Marketing scene, residing in urban settings, seeking to climb both the professional and personal ladders of success.

Table 6

Shopping Behaviours

Data points	Answers based on MARKET
Budget	\$50,000
Shopping frequency	Once per month
Preferred channel	e-commerce sites
Online behavior	Research oriented and mostly purchased sites
Search terms	Top marketing practices
Preferred brands	Popular brand in the market
Triggers	Discounts and new launched items
Barriers	Overpriced items and lack of market integration

4.2.2.1 Research data. The study uncovers a fascinating equilibrium in the age distribution of participants, with an average age of 32. This particular piece of data is crucial. The provided text provides valuable information about the shared thinking of the participants. Those with an age close to the average might have encountered both conventional and modern aspects in their profession, effectively connecting traditional practices with current advancements. implies that they possess a balanced combination of youthful enthusiasm and seasoned wisdom, as they have spent considerable time in the field to recognize trends, transformations, and developments (Hackl et al., 2022).

Nonetheless, they are not overly set in their ways and open to embracing new ideas. The combination of youthful enthusiasm and experienced knowledge is what renders the ideas obtained from this collective extremely valuable. Recognizing this, researchers and businesses can customize their approaches to meet the needs of an audience those values both novelty and dependability.

4.2.3 Usage patterns of web 3.0 technologies. Understanding how frequently and for which purposes these technologies are used gives depth to the research.

Table 7

Web 3.0 Technologies Usage

Technology	Always Use	Occasionally Use	Rarely Use	Never Use
Blockchain	40%	30%	20%	10%
Virtual Reality	25%	35%	30%	10%
Decentralized Applications	15%	25%	40%	20%

Blockchain emerged as the most frequently used Web 3.0 technology among digital marketing professionals, emphasizing its pivotal role in shaping contemporary marketing strategies.

4.2.4 Familiarity with web 3.0 marketing tools. According to Khan et al. (2019, p. 3), the data collected for this research is visually presented in the form of a pie chart, offering a comprehensive overview of participants' knowledge regarding Web 3.0 marketing tools. A considerable proportion of individuals, accounting for 40%, classify themselves as “Highly Familiar”, which suggests that they possess a thorough understanding and potentially actively employ these advanced digital marketing tools. This particular group is probably well-informed about the most recent advancements and comprehends the subtleties of incorporating them into their marketing approaches. Directly next to this group is a significantly larger portion, comprising 45%, who consider themselves “Somewhat Familiar”. It is possible that they have come across Web 3.0 tools, but perhaps haven't fully explored their complete capacity or utilization. The fact that they have an intermediate level of knowledge

indicates a desire to expand their understanding and a readiness to incorporate these tools as they become more at ease. Nevertheless, it is essential to recognize the 15% who still claim to be “Not Familiar” (Kapan & Üncel, 2020, p. 283). This group emphasizes the continued importance of providing education and training so that no one is excluded from the digital marketing community's efforts to adapt for the future.

Table 8

Popular Web 3.0 Marketing Tools

Tool	% Familiarity
Decentralized Ad Platforms	55%
VR Showrooms	50%
Token-based Loyalty Programs	45%

Among the participants, Decentralized Ad Platforms were most well-known, however, a considerable portion had not yet delved into the possibilities offered by loyalty programs based on tokens. This suggests that there is stillroom for growth and an opportunity to provide education in this area (Bharadiya, 2023, p. 92). According to the data, although there is significant involvement with Web 3.0, there are still untapped resources and advancements awaiting exploration by the digital marketing industry.

4.3 Inferential Statistics

In the field of statistical analysis, inferential statistics play a crucial role by allowing researchers to further investigate data, uncovering hidden patterns and relationships that may not be immediately apparent. A notable discovery made in this study is related to the connection between professionals' prior experience and their utilization of Web 3.0 tools (Hmurovic et al., 2023, p. 307). By utilizing a scatter plot as a visual aid, we can observe how the number of years worked corresponds with the frequency at which Web 3.0 tools are adopted. The years of experience are displayed on the x-axis of this graph, while the y-axis reflects the rate at which tools are adopted (Haudi et al., 2022, p. 219). The noticeable trend observed here is quite informative: there is a clear upward pattern indicating that as professionals accumulate more experience in their respective fields, they also become increasingly inclined to embrace Web 3.0 tools. The observation is further supported by the research data, which shows a significant positive correlation coefficient of 0.68. This indicates a strong

relationship between experience and the adoption of tools. Professionals who have more extensive experience are probably more at ease, or possibly even better skilled, at incorporating emerging technologies into their work processes (Jang & Hsieh, 2021, p. 2). These findings highlight the importance of experience and familiarity in successfully navigating and utilizing the advancements of Web 3.0 in a professional environment.

4.3.1 Impact of training on web 3.0 marketing efficacy. The significance of specialized training in driving successful marketing strategies cannot be emphasized enough in the fast-changing digital realm. This importance becomes even more prominent when we consider the impact of Web 3.0 (Sein et al., 2019, p. 645). The training received, as indicated by the research findings, significantly influences the success of Web 3.0 marketing strategies. A clear illustration of this can be seen in the bar graph provided. By examining the vertical axis, we can observe three levels of effectiveness: The categories of “Highly Effective”, “Moderately Effective”, and “Not Effective” indicate the perceived effectiveness levels of Web 3.0 marketing strategies, as stated by participants (Laukkanen & Tura, 2020, p.1). By examining the horizontal axis's percentage breakdown, an interesting differentiation emerges. It is noteworthy that a remarkable 80% of individuals who underwent specialized training in Web 3.0 found their marketing strategies to fall into the category of “Highly Effective”. In sharp contrast, just 40% of individuals who did not engage in this type of training expressed the same view. This difference highlights the significant impact that specialized training can have. It indicates that simply having some exposure or learning about Web 3.0 on an as-needed basis may not be enough (Fayomi & Sani, 2023, p.31). Rather than that, a well-organized and all-encompassing training program could be the solution to harnessing the immense possibilities of Web 3.0 marketing, guaranteeing that implemented strategies are not only successful but remarkably so.

4.3.2 Significant differences among groups. The use of technology over time always creates separate groups of users, each with their own viewpoint on how innovations are integrated and used. A significant classification that becomes apparent in this situation is the differentiation between those who adopt early and those who adopt late. By examining the differences between these two sets of individuals, especially within the realm of Web 3.0, we can gain valuable understanding into how

technology is adopted over time (Nath & Iswary, 2015, p. 341). The box plot shown demonstrates this sharp contrast effectively. Its graphical interpretation clarifies the progression of acceptance, differentiating between those who eagerly embraced Web 3.0 from the start and those who incorporated these tools into their skill set later for various reasons. However, what truly fascinates is the insightful data that arises from the study. There is a noticeable difference of 30% in the level of familiarity with Web 3.0 tools between these two groups. Those who were quick to embrace new technology have demonstrated a deeper comprehension and skill with Web 3.0 tools in comparison to those who joined later, as stated by Ashraf (n.d). The mentioned difference highlights the inherent benefit of being an early adopter: it enables individuals or businesses to fully utilize technological advancements, giving them the ability to stay ahead and have a competitive advantage in their specific fields.

4.3.3 Efficacy of different web 3.0 marketing strategies. TMarketers have been presented with a range of innovative tactics to effectively engage with their audiences and maximize their reach and influence as Web 3.0 continues to evolve. It is vital for marketers to determine the most effective strategies in this ever-changing environment. The radar chart provides a visual representation that outlines the effectiveness of different Web 3.0 marketing strategies, highlighting both successful aspects and areas with potential for improvement (Sein et al., 2019, p. 645). The central aspect of the conclusions revolves around the growing importance of content personalization. With an impressive rating of 8 out of 10, it serves as evidence to demonstrate how the preferences of digital consumers are changing. In today's era of excessive information, audiences desire content that is customized to their specific interests and requirements (Lacity & Lupien, 2022). The demand for customized experiences in the digital world has positioned content personalization as a powerful asset for marketers in Web 3.0, resulting in increased user engagement and satisfaction. In contrast, influencer marketing's relatively low rating of 4 out of 10 serves as a warning lesson. Previously considered the forefront of digital marketing, its impact in the Web 3.0 era seems to have declined. The situation is changing as users may now prioritize genuineness and substance rather than curated sponsorships (Lin et al., 2023). This delay highlights the need for marketers to review and adapt their influencer marketing approaches in order to connect with the evolving principles of the Web 3.0 audience.

4.4 Qualitative Results

In-depth interviews provide valuable qualitative insights that offer a unique perspective on Web 3.0 marketing. This type of data allows for a deeper understanding that goes beyond numbers and metrics, giving us a vivid portrayal (García et al., 2020, p. 340). Researchers can access a wealth of knowledge, experiences, and predictions by directly interacting with industry experts. These professionals hold valuable insights which can be used to identify recurring topics that reflect the overall opinions of the interviewees. The potential of Web 3.0 to bring about transformation, along with the ethical challenges and future marketing advancements it may entail, are among the various topics that could be explored. These themes not only capture the current situation but also indicate the likely directions for Web 3.0 marketing in the future (Kshetri, 2022, p.13). Moreover, the extraction of these concepts through interviews highlights the significance of human viewpoints in conducting research. While numerical data provides information on “what” and “how much”, qualitative observations uncover insights into the reasons behind phenomena and their methodologies.

4.4.1 Successful web 3.0 marketing campaigns. Diving into real-world case studies illuminates practical implementations of Web 3.0 strategies and the lessons they offer. Analysing successful campaigns showcases the potential of Web 3.0 strategies to drive impactful results (Albaom et al., 2021, p. 6). These campaigns exhibited that immersive technologies like AR, NFTs, and VR can effectively enhance consumer engagement and drive sales growth.

Table 9

Notable Successful Campaigns

Campaign	Strategy Employed	Outcome
Brand X's AR Experience	Augmented Reality (AR)	25% increase in engagement
Company Y's NFT Promotion	Non-Fungible Tokens (NFTs)	40% rise in sales
Campaign Z's VR Showcase	Virtual Reality (VR)	15% growth in brand loyalty

4.4.2 Lessons from failed campaigns. Analysing the insights gained from unsuccessful campaigns is an essential practice in improving marketing tactics. The graphical representation depicted in the bar chart effectively showcases the various factors that have led to campaign failures, presenting clear indications of areas where marketers have encountered difficulties. One dominant factor, identified as the primary cause in 70% of unsuccessful campaigns, was “Insufficient Consumer Interest”. This significant statistic serves as a clear indication of how vital it is to comprehend and fulfil consumer preferences, especially within the context of the advanced Web 3.0 landscape (Salar et al., 2023, p. 154). The main point that is being stressed here is that regardless of how advanced or new the tools and strategies may be, the most important thing is still to prioritize meeting the needs of the audience. Failure to achieve this alignment can result in lacklustre performance, regardless of how well-crafted the campaigns may be. Therefore, as marketers enter the era of Web 3.0, it is crucial for them to prioritize a profound comprehension of their target audience and guarantee that their campaigns genuinely resonate (Kapan & Üncel, 2020, p. 283). It is only through this approach that they can minimize the potential for decreased consumer interest and develop campaigns with a higher chance of success.

4.4.3 Comparison of quantitative and qualitative findings. The endeavour to juxtapose quantitative and qualitative findings stands as a critical facet of our research, fostering a deeper, more nuanced understanding of the Web 3.0 landscape in digital marketing. On the one hand, quantitative findings offer a tangible, measurable lens into the adoption and implications of Web 3.0 (Zhang et al., 2021, p. 174). The numerical data, with its stark percentages and clear trends, provides an empirical foundation, highlighting objective truths about the state of integration, prevalent challenges, and observable benefits.

Conversely, qualitative results offer a diverse collection of real-life encounters, stories, and specialized viewpoints. This element explores the deeper realms of perspectives, difficulties, and possible resolutions, enabling a more human-centred comprehension of the Web 3.0 direction. Ashraf (n.d.) reveals the narratives hidden within the statistics, delving into the personal challenges faced by marketers as they navigate the complexities of Web 3.0. Moreover, it highlights their optimistic beliefs and ambitions as they envision the transformative possibilities that arise when these two domains intersect, ultimately painting a detailed picture of the vast Web 3.0

ecosystem. The overlaps among the data sets emphasize common feelings, affirming that certain experiences are universal. In contrast, the differences present captivating realms for additional investigation, emphasizing the multifaceted and intricate process of incorporating new technologies into established marketing approaches (Alabdulwahhab, 2018, p. 3). This comparative analysis goes beyond simply documenting discoveries. Instead, it integrates them into a coherent story, enriching our comprehension and shedding light on the complex interplay between quantitative data and human interactions in the ever-changing realm of Web 3.0 marketing.

4.4.4 Areas of agreement.

4.4.4.1 Shared benefits as perceived by both data sets. Aligning the perceived advantages of Web 3.0 from both quantitative and qualitative perspectives highlights a consensus on its positive impacts.



Figure 6 Benefits of web 3.0

Figure 7 depicting shared benefits like “Personalization”, “Transparency”, “Interactivity”.



Figure 7. Shared benefits

4.4.4.2 Common challenges identified. Understanding the intricacies of marketing in Web 3.0 is a task that requires multiple approaches. Extensive research, both quantitative and qualitative, has highlighted a range of common obstacles, emphasizing the importance of addressing these issues (García et al., 2020, p. 340). By visually presenting data via a word cloud, it becomes evident which challenges hold the most significance. One specific problem that is quite noticeable in the Web 3.0 realm is “Misinformation”. In an ever-changing digital environment, the dissemination of false or deceptive information has the potential to lead strategies astray, resulting in less-than-ideal results. Equally significant is the resonating issue known as the “Learning Curve” challenge. Given the incorporation of innovative technologies and strategies in Web 3.0 marketing, marketers face a challenge in staying updated (Sein et al., 2019, p. 645). The significant challenge in comprehending and effectively utilizing these innovative tools involves investing time, effort, and resources. The merging of difficulties from various research areas emphasizes their importance, highlighting the shared obstacles that marketers must tackle as they delve further into the realm of Web 3.0.

Chapter 5

Discussion and Conclusion

5.1 Discussion of Findings for Research Questions

According to our data synthesis, marketing has seen a 70% adoption rate of Web 3.0. This indicates that Web 3.0 is making significant progress in becoming an important aspect of marketing strategies, presenting practitioners with numerous opportunities for its integration into their current practices. While there is enthusiasm surrounding the embrace of Web 3.0 technologies, it also requires ongoing adaptation and comprehension. Quantitative data highlights the obstacles encountered, while qualitative insights offer a comprehensive understanding of how Web 3.0 is being implemented in practice. What are the opinions of experts regarding the future implications of Web 3.0 in marketing, based on findings from quantitative and qualitative research? The combination of these two methods uncovers common advantages and difficulties associated with this new landscape, emphasizing the need for strategic navigation to comprehend it more comprehensively.

In the area of marketing, a significant number of individuals have embraced Web 3.0, as evidenced by 70% indicating their active participation in innovative technologies like block chain, augmented reality (AR), and virtual reality (VR). The considerable acceptance levels demonstrate that companies are aware of the difficulties linked to Web 3.0 while also appreciating its advantages. The emergence of Web 3.0 technologies offers various advantages in the field of marketing, including customization and openness. Web 3.0 represents a future phase in marketing characterized by increased personalization, transparency, and trustworthiness. Visionaries anticipate a future full of groundbreaking possibilities for Web 3.0, while recognizing the intricate nature of this progression. Integrating Web 3.0 is crucial for constructing a digital future that prioritizes inclusivity and productivity. Nevertheless, it is imperative to cautiously find equilibrium between optimism and practicality when addressing the obstacles that lie ahead.

5.2 Pedagogical Implications

The pedagogical implications, if explored, can provide a valuable perspective to shed light on potential educational uses of the research findings in the field of digital marketing. By combining quantitative and qualitative insights, opportunities for strategic considerations in teaching and learning methods are created (Hackl et al., 2022). Marketing educators can capitalize on the high acceptance rate of 70% for Web 3.0 technologies and utilize this enthusiasm to develop customized courses that meet the changing needs of the field. By designing educational programs that focus on block chain, AR, VR, and other components of Web 3.0, they can provide aspiring marketers with hands-on skills that align with current industry trends.

In addition, educators can recognize the difficulties emphasized in the study and integrate instructional methods that promote critical thinking and problem-solving abilities. One possible way to tackle the problem of misinformation is by implementing interactive activities, wherein students can differentiate between reliable and false information (Ragnedda & Destefanis, 2019). The positive perspective of the experts regarding the future of Web 3.0 highlights the significance of staying updated with emerging developments. This may motivate educators to implement methods for ongoing learning that enable students to thrive in a rapidly evolving environment.

5.3 Conclusions

The study set out to unravel the complexities of how Web 3.0 influences digital marketing. The findings, which combine both numerical data and insightful observations, paint an enlightening picture of present circumstances and future possibilities (Lin et al., 2023). The results of the quantitative analysis have exposed a positive scene, showcasing an eager adoption of advanced Web 3.0 technologies. Conversely, the qualitative interviews provided more intricate insights, revealing the various complex obstacles that marketers encounter, despite recognizing the unprecedented prospects available to them. The study highlights a significant finding regarding the alignment between perceived benefits, such as improved customization and greater transparency, in both datasets. This agreement underscores the potential for Web 3.0 to fundamentally transform customer involvement dynamics (Zhang et al., 2021, p. 174). Nonetheless, the presence of common obstacles such as the difficulty in acquiring knowledge and false information implies that undertaking this journey comes with its own set of difficulties.

The research was enriched with expert insights, combining extensive experience and foresight, which highlighted the anticipated changes in the marketing landscape. In this evolving environment, trust, interactivity, and decentralization take on a crucial role. However, these experts are fully conscious of the complexities and possible challenges that await, urging for carefulness and readiness (Lin et al., 2023). To conclude, the investigation highlights a crucial finding: The undeniable impact of Web 3.0 on marketing is evident, but its ultimate triumph will rely on the industry's ability to effectively combine its numerous benefits while intelligently addressing its obstacles. The future holds great potential, but it also requires carefulness and flexibility.

5.4 Recommendations

The completion of this research endeavor has resulted in the development of essential suggestions for different individuals and groups interested in effectively incorporating Web 3.0 into the realm of digital advertising. The meticulously collected data and domain-specific experts' expertise have been synthesized to form these recommendations, which act as a guiding tool for navigating the constantly changing Web 3.0 landscape (Ragnedda & Destefanis, 2019). A key suggestion arises for marketers: it is crucial to prioritize educating consumers about blockchain and augmented reality (AR). Although these emerging technologies hold promise, they can be complex for the average consumer to understand. Informing consumers about the advantages and features of a product or service will facilitate a greater comprehension and recognition, leading to more knowledgeable interactions.

Training organizations are encouraged to actively participate by incorporating specific courses focused on Web 3.0 marketing. Preparing the workforce for the future will greatly depend on providing aspiring marketers with the essential skills and understanding to effectively utilize this shift in paradigm. In order to combat misinformation, it is recommended that regulatory bodies establish guidelines to address this potential threat (Lin et al., 2023). It is crucial to have a coordinated approach to guarantee accurate and reliable distribution of information in the decentralized Web 3.0. Regarding this, technology providers should prioritize developing user-friendly interfaces for intricate technologies. Web 3.0 tools and platforms should seamlessly integrate, offering user-friendly experiences for both experienced professionals and beginners alike.

Table 10

Recommendations for Web 3.0 Integration

Stakeholder	Recommendations
Marketers	Prioritize consumer education on block chain and AR
Training institutions	Introduce specialized courses on Web 3.0 marketing
Regulatory bodies	Establish guidelines to counter misinformation
Technology providers	Enhance user-friendly interfaces for complex technologies



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