

**T.C.  
ISTANBUL AYDIN UNIVERSITY  
INSTITUTE OF GRADUATE STUDIES**



**ARTIFICIAL INTELLIGENCE (AI) DRIVEN MARKETING  
APPROACH ON ORGANIZATIONS' MARKETING FUNCTIONS.**

**MASTER'S THESIS**

**Emmanuel Mumali LUMUMBA**

**Department of Business  
Business Administration Program**

**MAY, 2022**



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**MAY, 2022**



**ONAY FORMU**





## **DECLARATION**

I hereby declare with respect that the study -Artificial Intelligence (Ai) Driven Marketing Approach On Organizations‘ Marketing Functions.], which I submitted as a Master thesis, is written without any assistance in violation of scientific ethics and traditions in all the processes from the Project phase to the conclusion of the thesis and that the works I have benefited are from those shown in the Bibliography. 13/01/2022

Emmanuel Mumali LUMUMBA



## **FOREWORD**

First, I wish to thank my supervisor Assist. Prof. Dr. Sezer AYAZ at Istanbul Aydin University for his continued support, guidance and encouragement during the writing of this thesis. Secondly, I wish to thank all Kenyan respondents especially Kenyans On Twitter who participated in the structured interview , for giving up their time and providing me with the much needed information.

Thanks also to the members of the jury who attended my thesis defense.

On a personal level, I would like to thank my Mother Praxides Namalwa Lumumba, for her unending support throughout my life. I dedicate my work to her.

May 2022

Emmanuel Mumali LUMUMBA



# **ARTIFICIAL INTELLIGENCE (AI) DRIVEN MARKETING APPROACH ON ORGANIZATIONS' MARKETING FUNCTIONS.**

## **ABSTRACT**

The aim, of this thesis is to give a better understanding on the effectiveness of AI driven marketing functions. Artificial intelligence is improving marketing effectiveness and efficiency by speeding up the decision-making process for buyers and providing marketers with user data that they can use to target future and potential customers. To guarantee that artificial intelligence does not undermine an organization's marketing efforts, it's critical to understand how AI interacts with marketing in the first place. To achieve the purpose of this thesis, the conceptual framework is based on research done before. The research consists of a mixture of case studies and literature review methods within the scope of qualitative research methods. To collect data, a structured interview was published on social media and sent to employees and business owners of different Tech companies within Nairobi Kenya.

The findings showed that internet users and business owners depend on AI and available marketing platforms run by AI to reach almost all their prospective clients. These available tools have been proven to be effective.

**Keywords:** Artificial intelligence, Marketing, Digital Marketing, Content, Advertising



## **YAPAY ZEKA (AI) KURULUŞLARIN PAZARLAMA FONKSİYONLARINA YÖNELİK PAZARLAMA YAKLAŞIMI**

### **ÖZET**

Bu tezin amacı, yapay zeka güdümlü pazarlama işlevlerinin etkinliğinin daha iyi anlaşılmamasını sağlamaktır. Yapay zeka, alıcılar için karar verme sürecini hızlandırarak ve pazarlamacılarla potansiyel müşterileri hedeflemek için kullanabilecekleri kullanıcı verileri sağlayarak pazarlama etkinliğini ve verimliliğini artırmaktadır. Yapay zekanın bir kuruluşun pazarlama çabalarını baltalamamasını garanti etmek için, ilk etapta AI'nın pazarlama ile nasıl etkileşime girdiğini anlamak çok önemlidir. Bu tezin amacına ulaşmak için kavramsal çerçeveye daha önce yapılmış araştırmalara dayanmaktadır. Çalışma, nitel araştırma yöntemleri kapsamında vaka çalışmaları ve literatür taraması yöntemlerinin bir karışımından oluşmaktadır. Veri toplamak için, sosyal medyada yapılandırılmış bir röportaj yayınlanmış ve Nairobi Kenya'daki farklı Teknoloji şirketlerinin çalışanlarına ve işletme sahiplerine gönderilmiştir.

Bulgular, internet kullanıcılarının ve işletme sahiplerinin neredeyse tüm potansiyel müşterilerine ulaşmak için AI ve AI tarafından yürütülen mevcut pazarlama platformlarına bağımlı olduğunu göstermiştir. Sahip olunan mevcut AI araçlarının etkili olduğu kanıtlanmıştır.

**Anahtar kelimeler:** Yapay zeka, Pazarlama, Dijital Pazarlama, İçerik, Reklam



## TABLE OF CONTENT

<b>FOREWORD .....</b>	<b>iii</b>
<b>ABSTRACT .....</b>	<b>v</b>
<b>ÖZET.....</b>	<b>vii</b>
<b>ABBREVIATIONS .....</b>	<b>xvii</b>
<b>LIST OF FIGURES .....</b>	<b>xix</b>
<b>I. INTRODUCTION.....</b>	<b>1</b>
A. Research Significance .....	2
B. Field, Resources, Place, Duration, Period, Support .....	2
C. Research Stages And Goals .....	3
D. Research Questions .....	3
E. Research Goals Were The Following.....	3
<b>II. LITERATURE REVIEW .....</b>	<b>5</b>
A. Marketing.....	5
1. The Marketing Process .....	7
B. Internet.....	8
C. Marketing On The Internet / Digital Marketing / Online Marketing .....	12
1. Elements Of Digital Marketing .....	12
a. Online advertising.....	12
b. Email marketing .....	13
c. Social media .....	13
d. Affiliate marketing .....	14
e. Search engine optimization (SEO) .....	14
f. Search engine marketing (SEM) .....	15
g. Content creation .....	15
h. Web analytics .....	16
2. Digital Marketing Provides Businesses With Strategic Potential For.....	16
D. Artificial Intelligence .....	16
1. AI history .....	17

2. Types Of AI Classification .....	20
a. Reactive machines .....	20
b. Limited memory .....	21
c. Reinforcement learning.....	22
d. Long Short Term Memory (LSTMs) .....	22
e. Theory of mind.....	23
f. Self-aware .....	23
3. Artificial Narrow Intelligence (ANI).....	24
4. Artificial General Intelligence (AGI) .....	24
5. Artificial Super Intelligence (ASI) .....	24
6. Branches Of AI.....	24
a. Machine learning (ML).....	24
b. Deep learning (DL).....	25
c. Natural language processing (NLP) / Natural language generation (NLG) .....	25
d. Robotics .....	25
e. Fuzzy logic .....	25
f. Expert systems.....	25
<b>III. ARTIFICIAL INTELLIGENCE IN MARKETING .....</b>	<b>27</b>
A. AI Generated Content.....	27
B. Cookies .....	28
1. Types of Cookies.....	29
a. First-Party Cookies .....	29
b. Third-Party Cookies.....	29
c. Session Cookies.....	30
d. Persistent Cookies .....	30
e. Secure Cookies .....	30
2. Uses of cookies.....	30
a. Functionality .....	31
b. Security .....	31
c. Analytics .....	32
d. Session management.....	32
e. Personalization.....	32
f. Online ordering.....	32

g. Authentication .....	32
C. Using AI To Track How Customers Feel .....	33
1. AI's role .....	33
2. Benefits from Using AI .....	34
a. AI Can Show What Is Missing .....	34
b. Teach Employees To Focus On What Matters Most To Consumers. ....	35
c. Determine Root Causes.....	35
d. Capture Real-Time Emotional And Cognitive Feedback From Consumers .....	35
e. Identify And Curb Decreasing Sales. ....	35
f. Set Priorities For Initiatives That Will Improve The Consumer Experience .....	35
D. Smart Content Curation .....	35
1. Functions of content curation tools. ....	36
2. Importance of content curation .....	37
a. Earn Expert Status .....	37
b. Save Time .....	37
c. Deliver Value .....	37
d. Better Understand Customers.....	38
e. Grow Business.....	38
f. Make Contacts.....	38
g. Stay Informed .....	38
E. Programmatic Media Buying .....	39
1. Three components for programmatic media buying .....	40
a. Sell-Side Platform (SSP).....	40
b. Demand-Side Platform (DSP).....	40
c. Ad Exchange .....	40
2. Types of programmatic media buying .....	40
a. Real-Time Bidding (RT).....	41
b. Private Marketplace .....	41
c. Programmatic Direct.....	41
3. How programmatic ads work.....	42
4. Benefits of using programmatic ad buying .....	42
a. Reach A Wider Audience .....	42

b. Adjust Ads To Perform Better .....	42
c. One Can Do Everything Automatically.....	42
d. Transparency .....	43
e. Data Insights & Reporting In Real-Time.....	43
F. Predictive Analytics .....	43
1. Predictive analytics in marketing .....	43
2. Application of predictive analytics.....	44
a. Segmentation Of Customers And Audiences.....	44
b. New Customer Acquisition .....	44
c. Lead Scoring .....	44
d. Content And Ad Recommendations .....	44
e. Personalizing Customer Experiences .....	45
f. Understand Consumer Behavior .....	45
g. Optimize Resources And Spend.....	45
h. Retain Customers.....	45
G. Ad Targeting .....	46
1. Types of Targeted Advertising.....	46
a. Contextual .....	46
b. Behavioral .....	46
c. Geotargeting .....	47
d. Social Media Targeting.....	47
2. Advantages of Targeted Advertising.....	47
a. Provide A Higher Level Of Customization.....	47
b. Increase Brand Perception And Raise Brand Awareness .....	48
c. Streamline Marketing Activities And Keep Resources Focused On Expanding Your Business.....	48
d. Increase The Return On Marketing Investment In Brand Marketing.....	48
H. Dynamic Pricing.....	48
1. Big Data In Retail.....	50
2. Algorithms for dynamic pricing and data .....	51
3. Internal Data.....	52
a. Product Attributes:.....	52
b. Inventory Levels:.....	52
c. Transactional Data:.....	52

4. External Data.....	53
a. Competitor data.....	53
b. Days of the week .....	53
c. Holidays .....	53
d. Regional trends.....	53
e. Weather and seasonal data .....	54
5. Data's influence on dynamic pricing algorithm.....	54
a. Quantity of data.....	54
b. Quality of data.....	54
I. Web And App Personalisation.....	55
1. Importance of web personalization. ....	55
a. Better optimized and converting landing pages .....	56
b. Better understanding of ones' customers.....	56
c. Increased time on site/decreased bounce rate .....	57
2. Accomplishing website personalization. ....	57
J. Chatbots.....	58
1. Types of Chatbots.....	58
a. A Set Guidelines Chatbot.....	58
b. Machine Learning Chatbot.....	58
2. Chatbot Technology .....	59
a. Rules-Based Chatbots.....	59
b. Generative Chatbots.....	59
c. Support / Live Chat.....	59
3. Benefits of Chatbots .....	60
a. Increase Website Conversion Rate .....	60
b. Immediate Availability .....	60
c. Reduces Human Interaction .....	60
K. Re-Targeting .....	60
1. Retargeting functions.....	61
2. Importance of Retargeting .....	61
3. Retargeting effectiveness .....	61
L. Dynamic Emails .....	62
1. Dynamic email content functions.....	62
2. There are 4 customization options.....	64

a.	Demographics.....	64
b.	Psychographics.....	64
c.	Subscriber Preferences.....	64
d.	Behavioral Data.....	64
3.	Benefits of dynamic email content.....	65
a.	Improve The Customer Experience .....	65
b.	Save Team Time.....	65
c.	Increase Campaign Engagement .....	65
M.	Content-Based Filtering.....	65
1.	How content-based filtering works .....	66
a.	Assigning Attributes .....	66
b.	Building A User Profile .....	66
2.	Use of Content-Based Filtering .....	67
a.	To Start Generating Recommendations, No Data From Users Is Required.....	67
b.	Recommendations Are Highly Relevant To The Use .....	67
c.	The User Can See Through Recommendations.....	68
d.	Avoids -Cold Start   Problem. .....	68
e.	Filtering systems are often easier to develop. .....	68
N.	Smart Assistants .....	68
1.	Functions of smart assistants.....	68
a.	Give hands-free control.....	68
b.	Answer queries .....	69
c.	Become ones' digital dj .....	69
d.	Get recommendations .....	69
e.	Place calls on ones' behalf .....	70
f.	Help with shopping.....	70
g.	Establish home automation .....	70
h.	Get to know their routines.....	70
i.	Set reminders.....	70
j.	Give medical advice .....	71
O.	Image Recognition .....	71
1.	Use of ai image recognition in marketing .....	71
a.	Identify visual trends .....	71

b. Logo Recognition .....	72
c. Interest Recognition.....	72
P. Pitfalls Of Ai .....	72
1. High Cost Of Creation .....	73
2. Job Displacement .....	73
3. Does Not Improve With Experience .....	73
4. No Emotions .....	74
5. Malicious AI .....	74
<b>IV. METHODS AND TECHNIQUES .....</b>	<b>75</b>
A. Methodology .....	75
B. Instrument .....	75
C. Structured Interview Results And Discussion .....	76
1. How would you classify yourself? .....	76
2. Which search engine do you frequently use?.....	77
3. Which social media platform do you use?.....	77
4. How often do you use social media? .....	78
5. Have you ever seen an advertisement on your social media for something you searched for on search engine like Google?.....	79
6. When chatting with businesses, do you find automated replies helpful? ...	79
7. Do you accept website cookies when visiting websites?.....	80
8. How often do you use google maps?.....	81
9. How often does google maps get you to the right destination? .....	81
10. Which E-mail service do you frequently use? .....	82
11. Does your E-mail service filter spam emails?.....	82
12. How well does your email service filter spam? .....	83
13. Do you shop online? Which platforms do you shop on? .....	84
14. When shopping, do you find related products suggestions useful?.....	84
15. When shopping, do you find comparison for similar products useful? .	85
16. Do you stream videos? Which platform do you stream videos on? .....	86
17. When streaming videos, do you find media recommendations/ Top picks/ suggested videos useful? .....	86
18. Do you use smart assistants like Siri, Alexa, Google Assistant and Bixby? .....	87
19. How often does the smart assistants give correct feedback? .....	88

20. Which ride share apps do you use? .....	88
21. Do you think the fare calculated by ride share apps is accurate? .....	89
<b>V. CONCLUSION .....</b>	<b>91</b>
A. Limitations of the Study .....	93
B. Future Research.....	94
<b>VI. REFERENCES .....</b>	<b>97</b>
<b>APPENDIX .....</b>	<b>111</b>
<b>RESUME.....</b>	<b>125</b>



## ABBREVIATIONS

<b>AD</b>	: Advertisement
<b>AGI</b>	: Artificial General Intelligence
<b>AI</b>	: Artificial Intelligence
<b>ANI</b>	: Artificial Narrow Intelligence
<b>ARPENet</b>	: Advanced Research Projects Agency Network
<b>ASI</b>	: Artificial Superintelligence
<b>B2C</b>	: Business to Customer
<b>CPA</b>	: Cost-Per-Action
<b>CPC</b>	: Cost-Per-Click
<b>CPM</b>	: Cost-Per-Thousand Impressions
<b>CRM</b>	: Customer Relationship Management
<b>CTR</b>	: Click-Through Rate
<b>CX</b>	: Customer Experience
<b>DJ</b>	: Disc Jockey
<b>DL</b>	: Deep Learning
<b>DNS</b>	: Domain Name System
<b>DSP</b>	: Demand-Side Platform
<b>FBA</b>	: Fulfillment by Amazon
<b>http</b>	: Hypertext Transfer Protocol
<b>IDSs</b>	: Intrusion Detection Systems
<b>IFTTT</b>	: If This Then That
<b>ISP</b>	: Internet Service Provider

<b>KPIs</b>	: Key Performance Indicators
<b>LSTMs</b>	: Long Short Term Memory
<b>MAP</b>	: Minimum Advertised Price
<b>ML</b>	: Machine Learning
<b>NHS</b>	: National Health Service
<b>NLG</b>	: Natural Language Generation
<b>NLP</b>	: Natural Language Processing
<b>PPC</b>	: Pay- Per-Click
<b>RAND</b>	: Research and Development
<b>RNN</b>	: Recurrent Neural Network
<b>ROI</b>	: Return on Investment
<b>SEM</b>	: Search Engine Marketing
<b>SEO</b>	: Search Engine Optimization
<b>SKU</b>	: Stock Keeping Unit
<b>SSP</b>	: Sell-Side Platform
<b>TCP</b>	: Transfer Control Protocol
<b>Wi-Fi</b>	: Wireless Fidelity

## LIST OF FIGURES

Figure 1 The marketing iceberg .....	6
Figure 2 The Marketing Process: Creating and Capturing Customer Value.....	8
Figure 3 Global internet uses in billions .....	10
Figure 4 Global internet users distribution.....	11
Figure 6 Email advertisement (personal email).....	13
Figure 7 Social Media advertisement .....	14
Figure 8 SEO result for hotels in Nairobi .....	15
Figure 9 SEM results for hotels in Nairobi .....	15
Figure 10 Google analytics.....	16
Figure 11 Turing test demonstration.....	18
Figure 12 Facial recognition.....	21
Figure 13 Google lens identifying a Toyota logo .....	22
Figure 14 Responses for question 1 .....	76
Figure 15 Responses for question 2.....	77
Figure 16 Responses for question 3 .....	77
Figure 17 Responses for question 4.....	78
Figure 18 Responses for question 5 .....	79
Figure 19 Responses for question 6.....	80
Figure 20 Responses for question 7 .....	80
Figure 21: Responses for question 8.....	81
Figure 22 Responses for question 9 .....	81
Figure 23 Responses for question 10.....	82
Figure 24 Responses for question 11 .....	83
Figure 25 Responses for question 12.....	83
Figure 26 Responses for question 13 .....	84
Figure 27 Responses for question 14 .....	85
Figure 28 Responses for question 15 .....	85
Figure 29 Responses for question 16 .....	86

Figure 30 Responses for question 17 .....	87
Figure 31 Responses for question 18 .....	87
Figure 32 Responses for question 19 .....	88
Figure 33 Responses for question 20 .....	88
Figure 34 Responses for question 21 .....	89



## **I. INTRODUCTION**

AI is sweeping the globe, affecting every area of life and economy. From automation of cars to performing complicated lifesaving surgery to giving feedback to customers who may raise questions or give suggestions. Artificial intelligence has not been in reach for many businesses despite being in use for decades. This has been due to computing power, cost of acquisition and many other factors. (Gijs Overgoor, Manuel Chica, & Weishampel, 2019) Now though, thanks to top companies like Google, Facebook and Amazon, this has changed and Ai is available to anyone who has access to a computer or anything with a chip as an outcome of advancement in Big data, affordable computers and upcoming user friendly Ai platforms.

Any company can only exist if it produces a profit, which is accomplished through marketing. Ai is impacting functions of marketing, for better or for worse. Amazon's capacity to offer a product for purchase to someone browsing the platform while anticipating speedier shipping to entice the buyer to make a purchase, and Google's ability to link content with advertising, are two instances of the best use of AI in business. (Gijs Overgoor, Manuel Chica, & Weishampel, 2019)

This master thesis aims to understand how organizations implement AI- driven efforts in marketing functions to boost their market equity, sales and the organization's success in general. The focus is on B2C companies, where these questions following need to be considered: How to implement digital marketing strategies efficiently? How to build a strong brand in the minds of consumers using an AI- enabled environment? How to create outstanding customer value?

How can marketers create new customer needs, what value does AI-driven marketing add to this process? Why do some AI-driven marketing efforts fail when implemented? Can a trend be derived?

To effectively answer these questions, the topics of AI in marketing, Social Media Marketing and Search Engine Optimization need to be highlighted. Marketing is one of the most important parts of any business ecosystem. In recent times the

digital aspect of marketing has been placed at the forefront. Important note: the terms “digital marketing” and “online marketing” are used interchangeably with the same meaning.

This chapter provides a summary of this research work, it includes the research significance, field, resources, place, duration, period, support, methods and techniques, theoretical background and the structural overview of the study.

## **A. Research Significance**

The purpose of this research is to evaluate how artificial intelligence (AI) influences an organization's daily operations, particularly marketing, as well as to determine how far AI has permeated the industry and what kinds of effects it has on marketing professionals.

Marketing entails a number of qualitative challenges, particularly strategic challenges, that cannot be answered with simple calculations and numerical computations. These issues necessitate judgment and instinct, in which professionals' accessible information and experience are joined with consumers' previous experience, and they both play a key part in decision-making and reaching a key judgment in the process of marketing. (Wierenga, 2010)

Artificial intelligence is the world's future, and it's critical to understand what firms should adopt and change now and in the future to assure success. Businesses will lose if they do not conduct these studies as the world continues to evolve.

This thesis provides essential definitions of artificial intelligence related concepts, AI solutions examples in marketing, and the implications of AI implementation, as well as a step-by-step guide to applying AI to address marketing problems.

## **B. Field, Resources, Place, Duration, Period, Support**

**Field:** Business

**Resources:** Online resources (books, articles, journals, literature reviews, websites etc.)

**Place:** Nairobi (Kenya)

**Duration:** 2-4 months

**Period of study:** 2004 - 2021

**Support:** Personal Funding

## **C. Research Stages And Goals**

The following were the steps in the qualitative and quantitative research process::

- a. A literature review to demonstrate the thesis' theoretical foundation (explorative approach)
- b. Structured interview questions developed by researchers and the opinions of two scientist in the field were taken about suitability of the questions to the literature. These questions were used to verify the problems established and the use of AI in the market today.

Target participants were invited through social media posts. In contrast, the questions were related to the research and theory presented in Chapter 2's literature review.

- c. Data interpretation.

## **D. Research Questions**

1. How should digital marketing strategies be implemented efficiently?
2. How effective is AI-enabled environment in building a strong brand in the minds of consumers?
3. In what ways is outstanding customer value created while using AI driven marketing?
4. How can marketers create new customer needs, what value does AI-driven marketing add to this process?

## **E. Research Goals Were The Following:**

- A thorough comprehension of the subject of research

- Collecting qualitative data that is rich in detail and anchored from an insider's perspective
- Providing own judgments in response to research inquiries
- Cross-checking research questions' answers with a theoretical basis
- Gathering exact research data for easier analysis
- Determining optimal practices for AI in marketing



## **II. LITERATURE REVIEW**

### **A. Marketing**

Marketing is kind of a mystery in that some regard it as a positive force, while others see it as a negative factor. In reality, it may be either good or bad depending on who uses it and why they use it. (Baker, 2012)

Before the industrial revolution, both sellers and buyers had a close relationship with one another. This meant that sellers often knew exactly what each customer needed and all they had to do was deliver exactly that. (Kotler & Keller, 2006)

The rise of industrialization created a distance physically and psychologically between the producer, the seller and the customer. This meant there needed to be techniques in place to monitor and keep track of the nature of consumer demands, to inform the consumers of the availability of goods and services and to make sure these were distributed as far and wide to reach as many consumers as possible. (Baker, 2012)

In business schools, marketing is taught as a base of information based on experience and theorization of causation in commercial exchange processes. People who are knowledgeable with this knowledge base should be able to recognize how producers and consumers interact in the marketplace and propose future techniques for enhancing and improving these interactions through the development of a marketing plan. (Kotler & Keller, 2006)

This puts emphasis on theory as the key to successful marketing. Many marketers, however, dismiss the emphasis on theory and insist that marketing is a skill that can only be acquired through engagement and practice. In support of this, there has been evidence pointing at academic research having little effect on successful marketing. (Baker, 2012)

Many people don't take marketing seriously and they assume its an

unnecessary expense. This is affirmed by the fact that most of the marketing functions and effects are not visible. Instead, they are submerged like an iceberg.(Iceberg Principle - Monash Business School, 2018) The only visible parts represent a small portion of all marketing efforts. This is illustrated in Figure 1

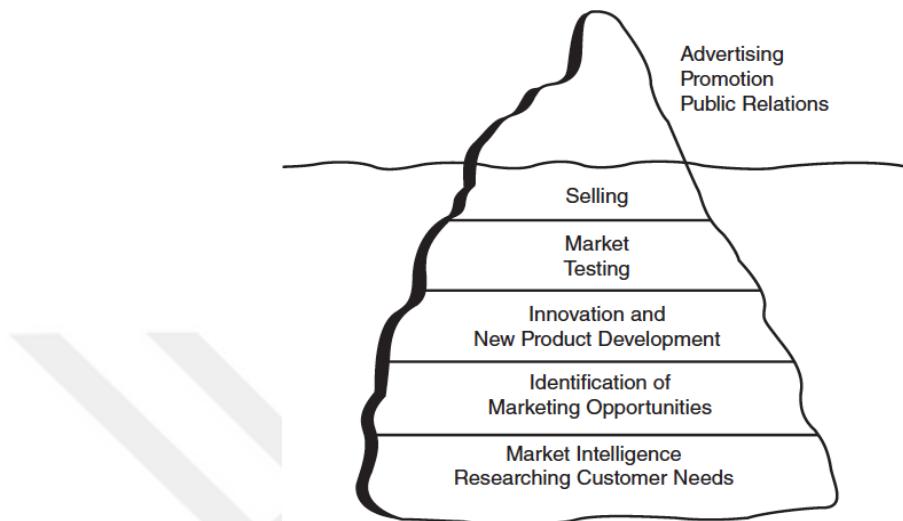


Figure 1 The marketing iceberg

Peter Drucker, widely recognized as one of the most influential management thinkers, wrote this in 1954:

Marketing is a much broader activity than selling, and it is also not a specialized activity. It is used to refer to the entire organization. It's the entire company as seen through the lens of its finished product, or from the consumer point of view. As a result, marketing must be considered and held accountable in all sections of the industry.... Marketing is the business's differentiating, one-of-a-kind role.. (Baker, 2012)

Two major professional marketing bodies provided the following definitions:  
-Marketing is the activity, set of institutions, and processes for creating, communicating, delivering, and exchanging offerings that have value for customers, clients, partners, and society at large.|| (Approved October 2007 AMA Board of Directors)

Marketing is the managerial process of identifying, anticipating, and economically responding to client requirements. (Chartered Institute of Marketing)

After analyzing over 50 definitions of marketing in the 1970s, Keith Crosier

(1975) suggested that they could all be accommodated within one of three approaches. The process, the philosophy and the function.

Over the years, marketing has evolved from a craft to a profession just like other synthetic disciplines like architecture, engineering and medicine. Marketing is a model for efficient and effective practice.

Marketing is capable of transforming all kinds of exchange relationships, whether for-profit or nonprofit, as well as in promoting social welfare.

Marketing, in its widest sense, is a sociological and managerial process by which consumers and businesses generate and exchange value with others to obtain what they both want. (Kotler Philip, Armstrong Gary, 2018)

Marketing is therefore defined as a process by which firms engage consumers, build strong relationships with them, and provide value for them in order to receive value back. (Kotler & Keller, 2006)

Marketing is a collection of procedures for developing, connecting, and providing value to consumers, as well as managing consumer, giving value to the firm and its stakeholders. (Kotler & Keller, 2006) . It entails identifying target markets, targeting and reaching them, as well as retaining and expanding client bases through the generation, delivery, and communication of content.

For instance, Nike dominates its industry by delivering its promises while inspiring athletes and everyone at large to -Just do it. Amazon is the kind of internet market by proving anything consumers will need in one place and making it possible to buy and have it delivered while Facebook has attracted over 2.8 billion users on their platform by helping them connect with their loved ones. (Philip Kotler, Gary Armstrong, 2018)

## **1. The Marketing Process**

Figure 2 outlines a five-step marketing approach for producing and capturing client value in a straightforward format. In the first four steps, businesses must learn about their customers, deliver value to them, and build strong client relationships. In the final phase, companies gather value from consumers in form of sales, earnings, and long-term client equity. (Marketing Process: 5 Steps of Marketing Process, 2020)

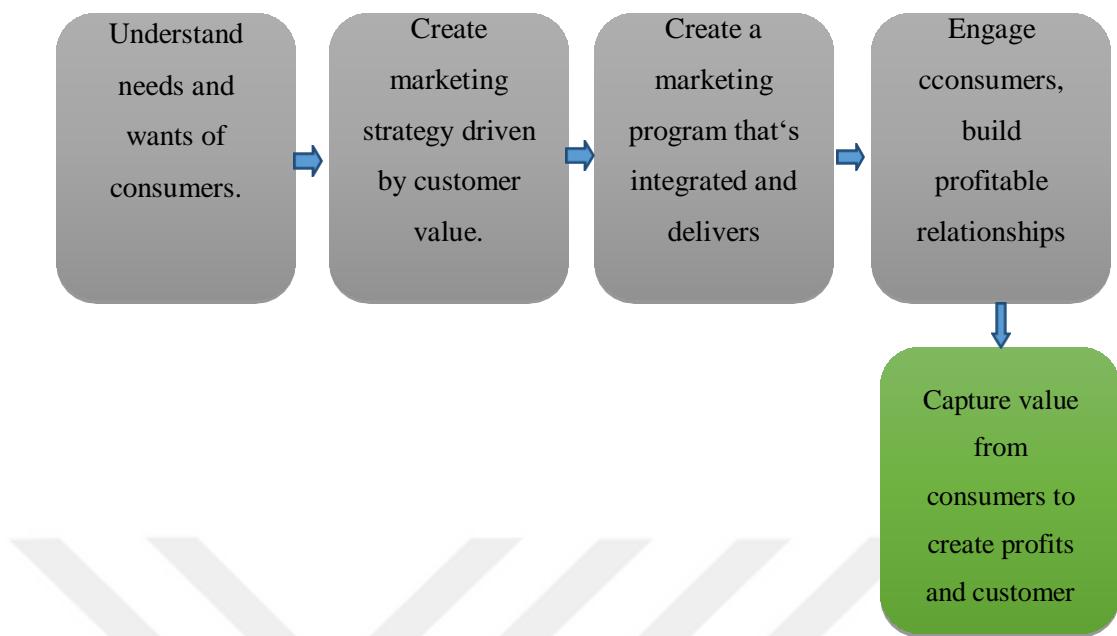


Figure 2 The Marketing Process: Creating and Capturing Customer Value

Source: (Marketing Process: 5 Steps of Marketing Process, 2020)

## B. Internet

One of the most important things that have enabled AI-driven marketing is the internet. Without which Marketing would still be done on Newspapers and on Billboards. It may not be a necessity for digital marketers to understand the full history of the internet but an introduction to how it came to be and how it works helps marketers understand how to implement digital marketing strategies.

The Internet is a worldwide system of interconnected computer networks. It's a network consisting of networks, with billions of interconnected private, public, academic, business, and government networks.(Leiner et al., 2009)

Many believe that the internet was developed by academicians, on the contrary, it was a product of the military like many other cutting edge technologies available today. Many universities took up the internet in the 1960s but prior to this, research had started a decade before as a result of the cold war. (Leiner et al., 2009)

American leaders were concerned about a nuclear attack that could destroy the then available conventional communications systems, so they set up the ARPANet (Advanced Research

Projects Agency Network) project. (Hauben, 2007) The earliest systems were developed as a simple medium of character-only communication which was in use throughout the 1970s until Sir Tim Berners-Lee, developed rules for the World Wide Web‘ in 1980. (World Wide Web foundation, 2012) More technical advances were made in the 80s. This included the development of the Transfer Control Protocol (TCP) (Postel, 1981a), the Internet Protocol (IP)(Postel, 1981b) and the Domain Name System (DNS)(Mockapetris & Dunlap, 1988). These became thecornerstones of the internet today as we know it. At this point, the internet was still centred around academics.

1991 saw the release of the World Wide Web (WWW)(Berners-Lee et al., 1994). This approach drew the attention of certain corporate leaders who saw the potential of the new means of communication. In 1993 the first web browser Mosaic was launched. This move gave the general public access to the internet. Several websites were developed around the time but they did not really take off as people still were led by scepticism. Some believed it was a fluke that would eventually go away.

October of 1994 saw Wired magazine‘s internet edition, Hotwired.com, feature the first digital advertisement (AT&T), this is considered the real birth of the commercial web.(Cho, 2003)

While the following years saw the uptake of the internet in America, Until the turn of the century, the majority of the world was still behind. The new millennium began with a wave of 'Internet fever,' with news organizations launching websites.of their own and the explosion of dot-com‘ businesses. (Zakon, 1997)The following years saw the failure of many businesses that had rushed into doing business on the internet but at this point, its importance was already publicized and cemented.

To better understand how the internet works, Heres a breakdown of what happens when one goes online as outlined by Charlesworth.

1. The website is stored in the form of a programming language on a server until it is requested by a visitor.(Charlesworth, 2015)
2. When a user types a URL into their web browser or clicks on a hyperlink, their device sends a request to an Internet service provider (ISP) for the files that constitute that website to be delivered. (Charlesworth, 2015)

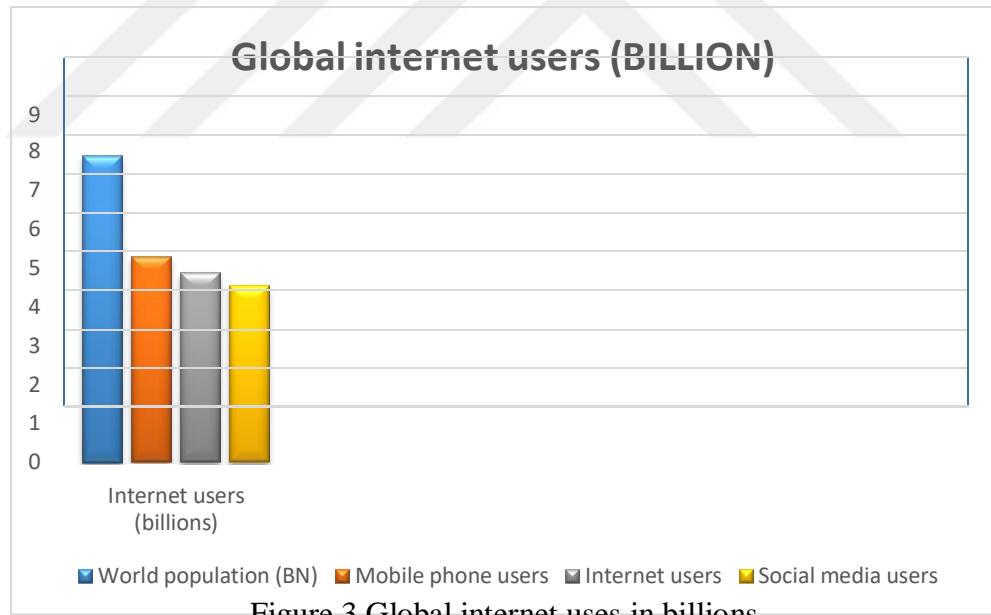
3. The pieces that make up the webpage are transmitted to the requesting computer in 'packets.' It's worth noting that the communication system's 'packets' element met the ARPENet military standards. The transmitted message is broken down into its constituent parts, each of which is responsible for finding its own path to the final destination – and this is still the reason why the Internet works so well and quickly.(Charlesworth, 2015)

4. The packets are reconstructed at their destination to form the entire message, which users view on their devices as a web page.

In spite of its sophistication, all of this occurs in a fraction of a second online. (Charlesworth, 2015)

### **Internet users in the world today.**

As of October 2021 there were 4.88 billion active internet users in the world. Figures 3, 4 demonstrate the global population using the internet. (Datareportal, 2021)



Source: (Datareportal, 2021)

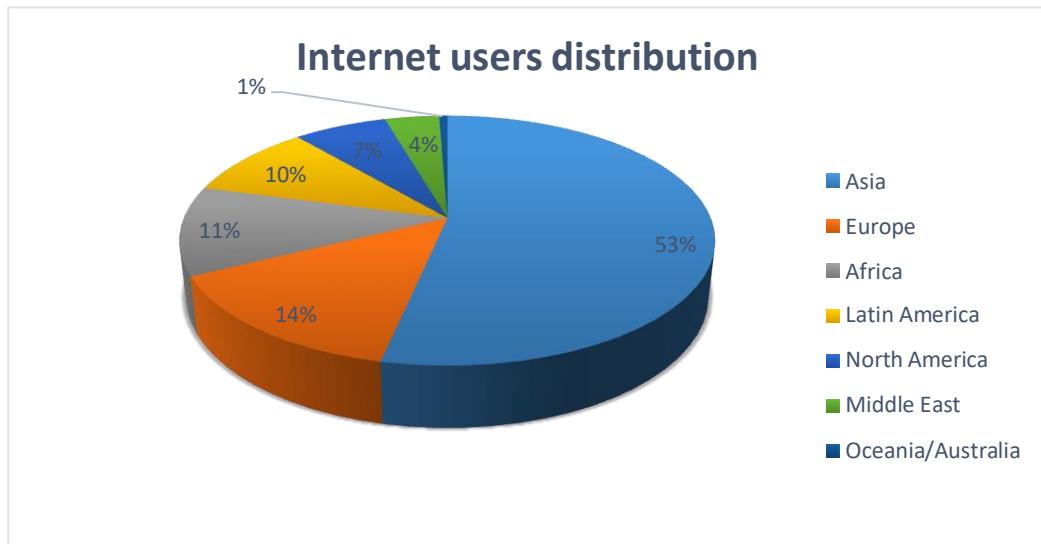


Figure 4 Global internet users distribution

Source: (Stats, 2021)

In marketing, there are three main goals for why any business joints the internet. These are:

- Brand development through websites and social media
- Revenue generation through direct sales, lead generation or direct marketing.
- Customer relationship management through customer service.

(Weedmark David, 2019)

The available types of websites today are:

- The Brokerage type: These bring buyers and sellers together online.
- The Advertising type: These focus on content that attracts web visitors and show the advertisements.
- The Infomediary type: These collect user data online.
- The Merchant type: these are online display retail stores.
- The Manufacturer type: These are stores owned by the manufacturers to sale their own goods.
- The Subscription: Users pay a premium to have access to the website (Cebi, 2013)

## **C. Marketing On The Internet / Digital Marketing / Online Marketing**

Marketing on the internet is digital marketing, or at least this would have been a satisfactory description in the early 2000s. Currently, though there's a lot more that comes with the title digital marketing. Digital marketing typically refers to promotional campaigns that appear on personal devices that are connected to the internet; computers, phones, tablets, or other devices. (Chaffey & Ellis-Chadwick, 2019) The internet is a key player. The campaigns takes multiple forms, including videos, images, text and audio.

Digital marketing refers to how businesses use the internet to communicate with potential customers.(Barone Adam, 2021)

Digital media provisions consumers access to information at any time, anywhere as long as they can get online. With this, consumers do not just listen to the brands' voice but also get their friends, friends, associations, peers and family's opinions on everything. This ability of consumers to interact with brands has positioned consumers to be coproducers of value.(Chaffey & Ellis-Chadwick, 2019)

The cost of digital marketing is typically a fraction of traditional marketing efforts like publishing in newspapers, broadcasting on cable tv, erecting billboards and more.

### **1. Elements Of Digital Marketing**

Digital marketing takes many forms all delivered through digital platforms. Some of them include

#### **a. Online advertising**

This involves running paid advertisements online. Through online advertisements company's can deliver the message about the products or services through internet-accessible devices. This allows the marketer to provide advertisements and content that matches the consumers' interests. Advertisers can place more effective and relevant ads online while controlling budget and timing.(McCoy et al., 2007)



Figure 5 Online advertisement on Forbes Magazine website

Source: (Forbes, 2021)

### b. Email marketing

This is when messages promoting products or services are sent via email to a previously established contact list of current and prospective clients. This is used to build customer loyalty by keeping customers informed while keeping the cost of advertising low for the company. A marketer can maintain email lists depending on characteristics such as consumer preferences and spending habits using good email marketing software.. (Fanning Emma, 2021)

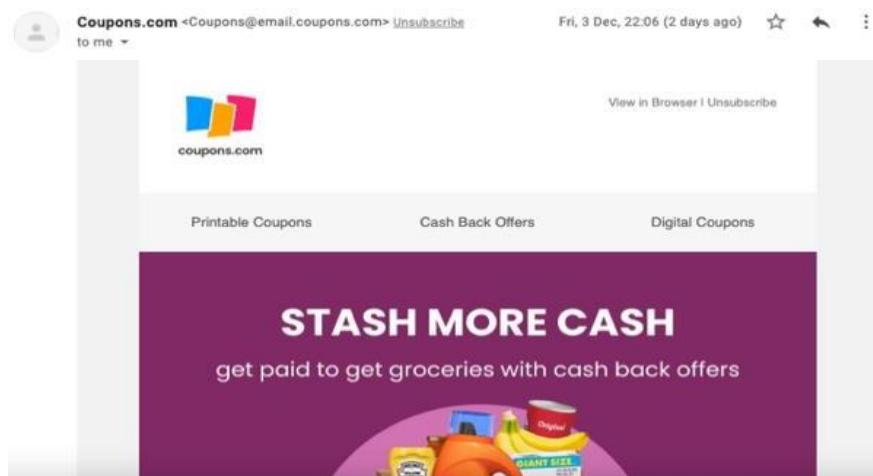


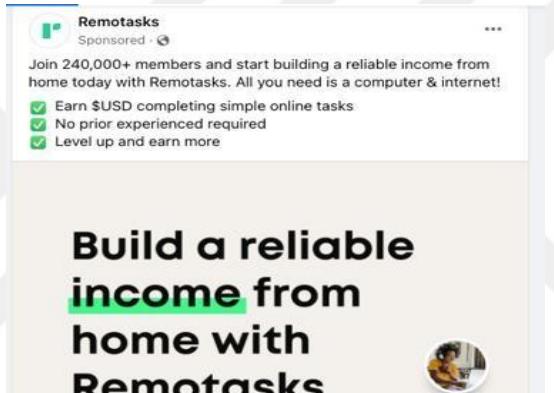
Figure 6 Email advertisement (personal email)

### c. Social media

This is a major branche of digital marketing. It involves doing marketing activities on social media platforms like Facebook, Instagram, Twitter and LinkedIn.

Social media marketing is done through content creation and sharing. Companies strive to build huge social media audiences which would include potential customers. The audience is then targeted by custom content that encourages sharing and purchasing of goods and services. Different social media pages have different demographics of audiences hence a company that can properly market on different platforms will be able to target their entire prospect market. (Voorveld et al., 2018) Social media marketing is cost-effective as it's free except for paid advertisements. All a company needs is to open social media pages and create content to share. Paid social media advertisements allow marketers to target even more social media users and not only those that follow their pages. (Hayes Adam, 2021)

Figure 7 Social Media advertisement



Source: (Facebook, 2021)

#### **d. Affiliate marketing**

Affiliate marketing is a model of advertising where a business pays other social media users to create content, share it and generate traffic and sales for the company. The third party users are paid in commissions from the number of sales made. This is a pay-for-performance marketing campaign. This sort of marketing is used efficiently by sites like Amazon, eBay, LinkShare, and Flipkart. (Frankenfield Jake, 2021)

#### **e. Search engine optimization (SEO)**

Search engine optimization (SEO) is the practice of enhancing the way websites rank on various search engines such as Google, Yahoo, and Bing, as well as raising visibility when internet users search for products or services linked to the

company.. This in turn increases sales for the business. (Zilincan, 2015)

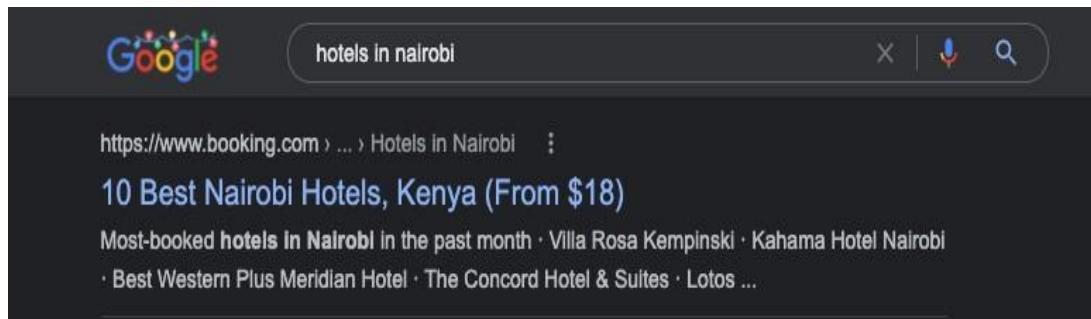


Figure 8 SEO result for hotels in Nairobi

Source: (Google, 2021.)

#### **f. Search engine marketing (SEM)**

The marketer runs paid advertisements on search engines targeting prospect clients who search for products and services online. Search Engine Marketing or SEM is like SEO but paid.(In & 2005, 2005) This takes several forms including: PPC (pay-per-click) also CPC (cost-per-click) model, CPM (cost-per-thousand impressions), CPA(Cost-Per-Action).

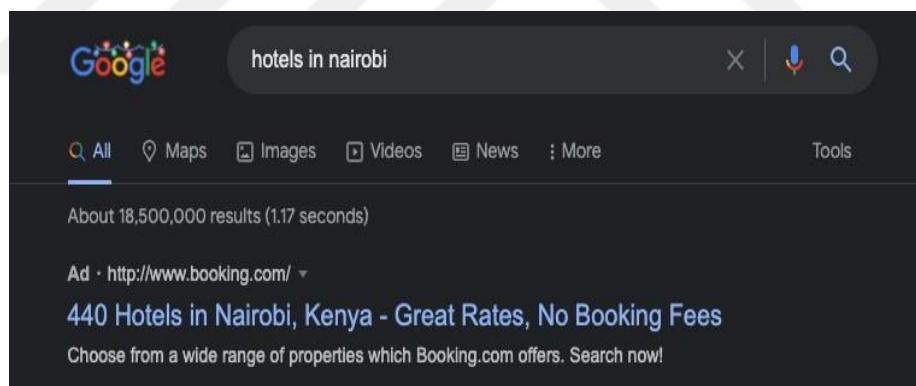


Figure 9 SEM results for hotels in Nairobi

Source: (Google, 2021.)

#### **g. Content creation**

Content is king. This is what the marketer shares online to be viewed by existing and prospective clients. This is available in a variety of forms, including photos, videos, audio, blogs, case studies, guides on how to do things, live stream, raised question and provided answers (Q&A) articles, news, infographics. Without content, social media marketing would not be possible. (Difford, 2020)

## h. Web analytics

Web Analytics involves collecting, measuring, understanding, analyzing, planning, reporting and predicting the web and advertising activities for ones business. One of the most crucial aspects of internet marketing is this. (Burby, 2007)

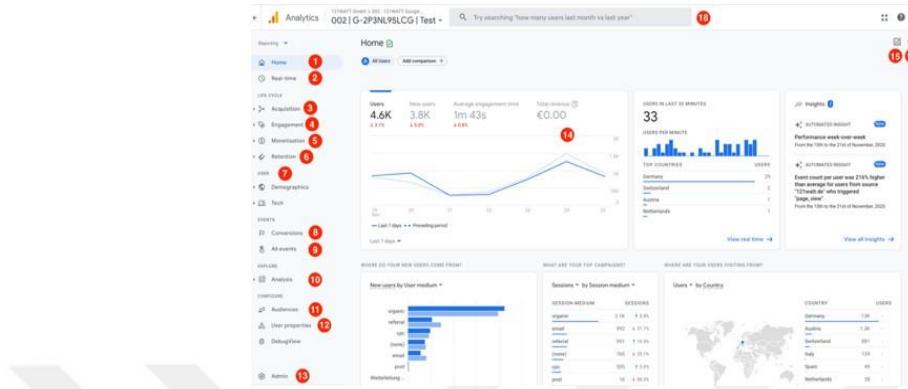


Figure 10 Google analytics

Source: (Analytics, 2021.)

## 2. Digital Marketing Provides Businesses With Strategic Potential For :

- a. Branding.
- b. Completeness.
- c. Usability
- d. Interactivity.
- e. Visual communication
- f. Relevant advertising.
- g. Community connections.
- h. Virality.
- i. Measuring output.

## D. Artificial Intelligence

The Oxford dictionary defines artificial intelligence as a information technology's derivative that is not to be mistaken with machine learning or the application of algorithms. -The theory and development of computer systems able to

perform tasks normally requiring human intelligence, such as visual perception, speech recognition, decision-making, and translation between languages. (Oxford 2021.). Artificial intelligence-based technology is able to mimic the human mind cognitive functions, such as learning and solving problems. The role of artificial intelligence includes analyzing and data processing in order to execute certain tasks. (Krystyna Jarek 2019).

## 1. AI history

Modern computers have been around for about seven decades, but the idea that man could have machinery capable of performing human-like functions with the same cognitive processes as the human brain can be traced as far back to Egyptian culture thousands of years ago.

Ai as we know it today may be traced back to when Isaac Asimov, an American science fiction author, released his short story in 1942 called -Runaround. (Asimov, 1940) The Runaround's plot evolves within the now-famous

Three Laws of Robotics:

- a. A robot may not injure a human being or, through inaction, allow a human being to come to harm;
- b. -A robot must obey the orders given to it by human beings except where such orders would conflict with the First Law;
- c. -A robot must protect its existence as long as such protection does not conflict with the First or Second Laws. (Asimov, 1940)

Around the time the three laws were being written, Alan Turing, an English mathematician who developed the Turing machine was developing The Bombe, a machine for breaking codes for the British government. The purpose of the Bombe was to analyze and break down German army encrypted secret messages that had been generated by the Enigma machine during Second World War. The bombe was an update of The Bomba designed in Poland at the Biuro Szyfrów by cryptologist Marian Rejewski. (Haenlein & Kaplan, 2019)

This is thought to be the world's first operational electromechanical computer. (JP Bowen - The Scientists: An Epic of Discovery. Thames, 2012) The bombe's ability to decipher the complex Enigma coded messages gave Turing a push to

publish his seminal article -Computing Machinery and Intelligence| in 1950 where he gave a description on how to create and test intelligent machines. The Turing Test still is used today to determine the intelligence of an artificial system: -If a human interacts with another human and a machine and is unable to tell the machine apart from the human, the machine is said to be intelligent|(Saygin et al., 2000)

In this test, a human assessor must assess natural language conversations between a human and a computer that creates human reactions. One of the two discussion partners is a computer, and all participants would be separated, the assessor is informed.(Oppy & Dowe, 2003) The outcome would not be dependent on the machine's ability to replicate words as voice because the interaction would take place over a text-only channel, such as a device keyboard and screen. If the assessor cannot tell the difference between the computer and the person, the machine is said to have succeeded in the test. The test results are based on how accurately the machine's replies match those given by a human, rather than on the machine's ability to produce correct responses to questions.(Saygin et al., 2000)

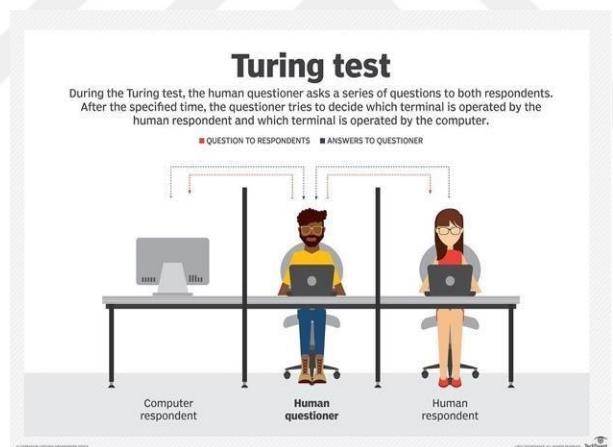


Figure 11 Turing test demonstration

Source: (Alexander S. Gillis, 2021)

In 1956, at Dartmouth College in New Hampshire, Marvin Minsky and John McCarthy (a Stanford computer scientist) organized the eight-week Dartmouth Summer Research Project on Artificial Intelligence (DSRPAI), where the term "artificial intelligence" was formally conceived.(McCarthy, 1956)

People who would later become known as AI's founding fathers came together as a result of this. Claude Shannon, a mathematician who developed information theory, and Nathaniel Rochester, a computer scientist who eventually

developed the IBM 701, the first commercial research computer, were among the attendees. DSRPAI's purpose was unite professionals from several fields to develop a new research area focused on developing machines that could mimic human intelligence.(McCarthy, 1956) After the Dartmouth Conference, the famous ELIZA computer program, an initial natural language processing computer program produced by Joseph Weizenbaum at the MIT Artificial Intelligence Laboratory from 1964 to 1966, was one of the first achievements in the AI area. (Weizenbaum, 1966) Designed to highlight how superficial a human-machine communication is. The program used pattern matching and substitution methods, to give responses that made users feel they were talking to a human being. It was termed the first psychotherapist chatbot.

The ELIZA program was the very first software with the capability of trying to complete the Turing Test. This was AI in action. (Weizenbaum, 1966)

The General Problem Solving software, created by the Nobel Laureate Herbert Simon and scientists from the RAND Corporation Cliff Shaw and Allen Newell, was another success story. This had the ability to work out certain types of basic puzzles, like the Hanoi towers, automatically. (Haenlein & Kaplan, 2019)

On May 11, 1997, IBM's chess master machine Deep Blue defeated world Gary Kasparov who was a world champion, making it one of the most significant milestones in AI history. Deep Blue created history when it became the earliest computer to defeat a human chess champion in a match that lasted six games under regular time limits. Kasparov won the first game, lost the second, and drew the next three games. In the last game, Kasparov resigned after 19 moves making Deep blue the winner. (M. Campbell et al., 2002)

Kasparov refused to accept it when Deep Blue won the match in the decisive game.

According to reports, the algorithm had the ability to process over 200 million alternative moves every second and predict top 20 moves ahead. (Haenlein & Kaplan, 2019) It was a new dawn for AI.

Another history-making game of AI vs Human master came in 2015 when Google developed software AlphaGo, beat the reigning three-time European Champion, Mr Fan Hui. This was followed by a series of wins for the program

against world champions. Go is far much complex than Chess.(Chen, 2016) According to google, there are more Go moves than there are atoms in the universe.

-The search space in Go is vast - more than a googol times larger than chess (a number greater than there are atoms in the universe!) (Hassabis, 2016)

Today, it's evident that AI is on the right road and will soon be as commonplace as the Internet or social media. AI has an impact on not just our personal life, but also how enterprises and businesses engage with their customers. At this point, the question is not whether AI will have an impact on human life, but rather what roles it will play and how we will cohabit with it.

## **2. Types Of AI Classification**

Artificial intelligence research intends to create computers and systems that will emulate human-like functioning. An AI systems ability to replicate human functions is used to determine the types of AI.

An AI system that can do human-like functions and likeness with the ability to -think and even -feel with high accuracy levels is considered more advanced and evolved as opposed to an AI system with limited functionality(Forbes, 2021)

According to this classification system, Responsive machines, minimum memory machines, theory of mind, and self-aware AI are the four categories of AI.

### **a. Reactive machines**

These happen to be the earliest forms of AI that have very minimal capability. This is the simplest level of AI. It attempts to emulate the human ability to respond to different kinds of stimuli. These systems don't have the ability to learn or store memory.(Fonseca Lauren, 2019) This means they cannot use experiences from the past to inform present actions. Reactive machines can only be used to automatically respond to limited inputs. No memory can be used to improve their operations. An AI that recognized a human face structure from data input and gives an output with a box around the face identifying it as a human face is a type of reactive machine.

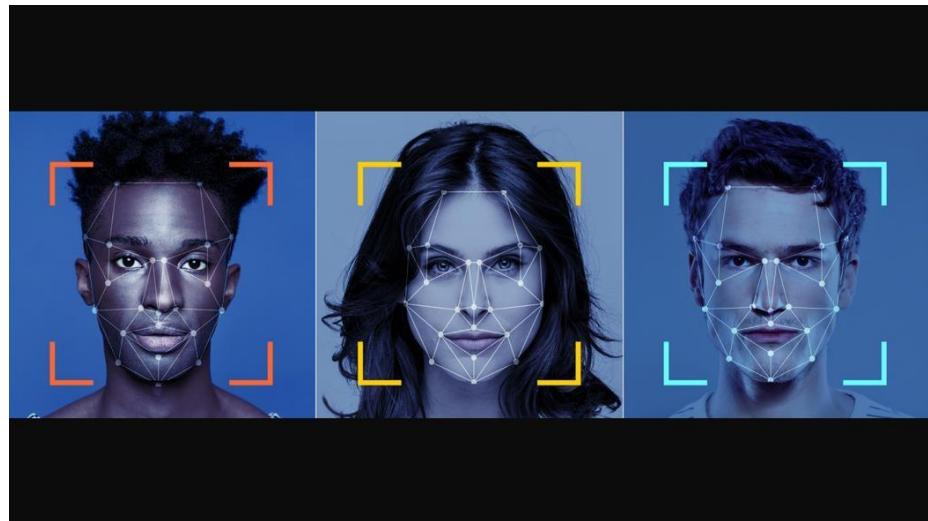


Figure 12 Facial recognition

Source: (Smith Brad, 2020)

### **b. Limited memory**

Limited memory AI are machines systems with capabilities of reactive machines while being able to store data previously inputted and/or predictions using this history to make better predictions. Most of the existing AI applications today come under this category of AI.(Fonseca Lauren, 2019)

Ai systems are trained by use of massive date volumes which are stored in their limited memory and used for formation of a reference model to be used when solving future problems. A good example is an image recognition system that has been trained using thousands or even millions of images for a specific item to teach the machine to name objects distinctively. When a photo is scanned by this artificial intelligence, it refers to the previously uploaded photos as point of references to decipher and understand and identify the contents in the scanned photo. With more experience comes more accuracy. (Arend Hintze, 2016)

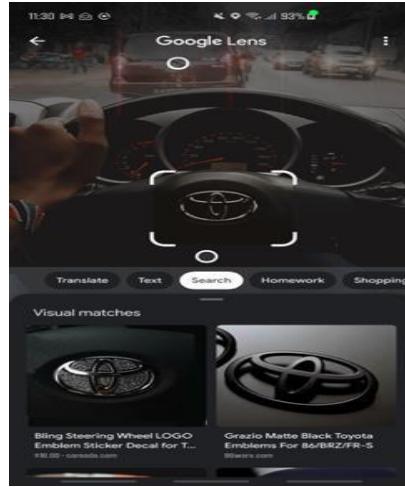


Figure 13 Google lens identifying a Toyota logo

Source: (Google .nd)

These are the most common types of machine learning models which attain Limited Memory:

### **c. Reinforcement learning**

Reinforced learning models improve their predictions by going through several rounds of testing and error. This methodology is used to educate artificial intelligence how to engage in games like chess and Go. (Błażej Osiński & Konrad Budek, 2018)

### **d. Long Short Term Memory (LSTMs)**

In deep learning, this is a feedback-connected artificial recurrent neural network (RNN). This can process specific data points, such as photographs, as well as complete data sequences, such as audio or video. In LSTM, previous data is used to forecast what will happen next in a series. More recent data is classified as more important by the LSTM algorithm, whereas data from the past is classified as less important..(Long Short-Term Memory - an Overview | ScienceDirect Topics, 2021.)

The use of LSTM to applications like unsegmented, connected handwriting and voice recognition, as well as the detection of anomalies in network traffic or IDSs (intrusion detection systems) is an example .

Limited Memory artificial intelligence performs in two ways:

- i. A model is trained nonstop on fresh data by a team.

- ii. The A.I model is constructed in a way that it is trained automatically by continuous usage and behaviour.

For a limited memory system to be sustained by machine learning infrastructure, the infrastructure requires built-in structures with an active life cycle.

There are 6 steps on the ML Active Learning Cycle (Rodriguez v Raul, 2020):

- i. **Training Data.** A machine learning system is trained on data.
- ii. **Build ML Model.** Creation of the system.
- iii. **Model Predictions.** Predictions are made by the system.
- iv. **Feedback.** Human and environmental inputs provide confirmation on the system's past predictions.
- v. **Feedback becomes data.** The feedback is sent back to a database server.
- vi. **Repeat Step 1.** The cycle starts again.

#### e. Theory of mind

As of the time of this research, 2021, the Theory of mind AI is still in its inception period.

In the current innovation pipeline, this is the next level of AI systems. This can be seen in self-driving automobiles, for example..(Fonseca Lauren, 2019)

By detecting beliefs, needs, emotions, and mental processes, AI at this level will have the ability to understand every entities with whom it interacts rather effortlessly. Achieving AI at the Theory of Mind level necessitates progress in other fields of AI as well as infrastructure such as 6G internet speeds. To really comprehend human wants, AI systems must first comprehend complicated human minds and view people as individuals while being shaped by a variety of influences. (Arend Hintze, 2016)

When humanity unlocks the theory of mind functionality, we have machines that Think, express emotions and even achieve consciousness.

#### f. Self-aware

Unlike Theory of mind, Self-awareness is still a hypothetical scenario in the

AI spectrum. Currently, this is considered the final stage of artificial intelligence development. Self-aware AI will evolve to be able to resemble the human brain and consciousness. This could be decades or centuries from materialization. (Fonseca Lauren, 2019) While being the ultimate goal of AI, it also happens to be the one with the most controversy raising ethical questions among scholars and the general public. This is a system that will not only be able to interact with but also has potential desires, beliefs, needs and emotions. The textbook end of humanity scenario. (Arend Hintze, 2016)

AI is further classified into Artificial Narrow Intelligence (ANI), Artificial General Intelligence (AGI), and Artificial Superintelligence (ASI).

### **3. Artificial Narrow Intelligence (ANI)**

This sort of AI encompasses all of today's AI. These are limited to performing a single task independently utilizing human-like abilities. These can only perform what they've been programmed to do, giving them a limited variety of abilities.(Singh, 2019)

### **4. Artificial General Intelligence (AGI)**

The ability of an AI agent to study, monitor, comprehend, and function like a human is referred to as AGI. (Heath Nick, 2018)

### **5. Artificial Super Intelligence (ASI)**

At everything it does, ASI will be far superior to humans. They'll have more memory, be able to process and analyze data faster, and make better decisions. The singularity will result as a result of this. A potential period when technological advancement becomes unmanageable and irrevocable.(Ivy Wigmore, 2018)

## **6. Branches Of AI**

Because of advancements in various disciplines of AI, AI is capable of doing assigned jobs well.

### **a. Machine learning (ML)**

Is the study of algorithms that evolve over time and on their own as a result of previous information and observations. This has catapulted AI to new heights,

enabling machines to understand on their own with only the data available to them.(Goodfellow & Bengio, 2016)

**b. Deep learning (DL)**

Is a subset of a wider class of representation training and artificial neural network-based machine learning techniques. Unsupervised, semi-supervised, or unsupervised is possible. DL is able to decipher and provide findings on information practically instantly thanks to computer power and huge data.(Clustering & 2020, 2019)

**c. Natural language processing (NLP) / Natural language generation (NLG)**

It's an artificial intelligence area., computer science, and linguistics concerned with human-computer interactions, particularly how to design computers to analyze human natural language.(Chowdhury, 2003)

**d. Robotics**

Robotics is an area of AI that focuses on the development of intelligent and systematic agents known as robots. A robot is a man-made agent that operates in a real-world setting. Robots are primarily utilized to reduce the amount of humans required in manufacturing, construction, and other tasks.(Critchlow, 1985)

**e. Fuzzy logic**

Fuzzy logic is a kind of reasoning that is similar to that of humans. It is based on the "degrees of truth" principle. Fuzzy logic simulates how humans make judgments with YES/NO or True/False options. A logical block accepts an input and outputs a specific value, such as True or False. This approach is based on probabilities. (Tanaka, 1996)

**f. Expert systems**

An expert system is a computer system based on artificial intelligence that imitates the human behavior by learning, reasoning and reciprocating the ability of human experts to make decisions. The expert system is majorly used in loan analysis, information management, medical facilities, virus detection and more.(Jackson, 1986)

Models are used in AI-driven business promotion to optimize, automate, and

augment the procedure of converting data to activities and interactions, while still predicting behavior, hyper-personalizing communication, and forecasting needs.

Marketers leverage user data to create personalized and contextualized brand marketing based on previous experiences with customers. These encounters are reviewed as a means of planning future experiences in a satisfying loop.

Companies stand to gain directly from AI strategies that characterize how advertising models react to certain business requirements, according to developing marketing trends. Businesses may also gain from employing AI-powered marketing technologies. Even if a corporation isn't actively developing AI capabilities, its marketing activities may already be benefiting from AI that is currently accessible. (Mari, 2021.)

- I.** Marketing professionals can use AI to improve automation and process optimization, making our lives easier. Routine marketing chores are automated, allowing marketers to concentrate on more important responsibilities

### **III. ARTIFICIAL INTELLIGENCE IN MARKETING**

Adding to the large range of state-of-the-art technologies and services already available for brands to adopt, AI applications in marketing are fast evolving.

Although artificial intelligence (AI) has been used in marketing for years, a number of variables have led to the recent surge in interest and practicality.(Krystyna Jarek, 2019)

A re - emergence in interest in the field, as well as an exponentially increasing pool of extremely skilled experts eager to progress the sector, increased computing abilities to handle AI algorithms at cheaper rates than before and big Data and its affiliated information management advancements are just a few of these factors.(Krystyna Jarek, 2019)

We're starting to see AI's marketing possibilities present itself in a variety of ways now that AI technology is more widespread than ever before. Although the number of companies using robust AI systems is still modest, many organizations of all sizes are adopting relatively small solutions that require less resources to create and run. (AI Marketing: Components, Benefits, and Challenges | Marketing Evolution, 2021.)

#### **A. AI Generated Content**

The world of internet marketing is governed by content. Without content, a marketer would have a hard time capturing their target audience.(Difford, 2020). However, writing content like blogs and social media posts is not as easy as it sounds, in fact, content generation is one of the hardest parts of digital marketing. Companies spend most of their budget on content generation.

This is where NLG(Natural language generation) comes in. NLG had been around since the 1960s and commercially available for most of its history, but was found to be unpolished as it couldn't read well and generated content that was easily recognizable as computer-generated.(Yagur Inbar, 2021) Over the years, NLG has

seen a large upgrade in the form of advances in computer-generated text that is integrated with AI. Computers learned to read and now they can write. With advanced AI, it can create content through its subset called –content intelligence. Content creators can create content for blogs faster than before. These platforms use structured data and machine learning to generate high quality, relevant content while greatly reducing human labour.(Yagur Inbar, 2021) Basically, NLG takes input which is followed by the generation of output. Give it some topic insight or keywords and NLG uses utilities such as structured utilities or machine learning to generate custom content with ones‘ unique parameters.

AI content By selecting pieces from datasets, AI content creation tools like Wordsmith (wordsmith 2021.) may write articles that sound human. WordSmith generated 1.5 billion items of content in 2016, As more people utilize it to generate content for their business marketing, its prominence is expanding. (2016, The Guardian). Reporting on data-driven events, such as market data, can be done with AI writers.

## **B. Cookies**

Cookies are files of text comprising data pieces or blocks of data like a password and username created by a web server, they are placed on a computer or any other device used to access the internet and are used to identify ones‘ computeras they browse the internet. (Pennington, 2001)

HTTP cookies are a type of cookie which is used to recognize and enhance the browsing experience of certain visitors.. (Kristol, 2001)

Once a user is connected, data is created in the server and stored in a cookie. The data is labelled with a kind of identifying ID that is specific and tied to a user and their device.

When a cookie is transferred between a user's computer and a network server, the server recognizes the user's machine and recognizes what content to present to them.

Cookies are divided into two categories. HTTP Cookies and Magic Cookies.

Both Cookies have similar functionality but are applied differently to

different cases:

Cookies that are transmitted and returned without modification are referred to as "magic cookies." This is widely used to access computer database systems, such as a company's internal network. This concept existed before the advent of the new cookie.(Magic Cookie | PCMag, 2021.)

HTTP cookies are a modified form of the magic cookie designed for use on the web.

HTTP cookies, often known as internet cookies, are unique to web browsers and are used to track, customize, and save data about each visitor's session. A "session" is the amount of time spent on a website.(Kristol, 2001)

When a visitor visits a new website. The website's data is stored on a server, which delivers a small stream of distinguishing data to the web browser being used.

"Name-value" pairs identify and read cookies, indicating where they should be sent and what information they should collect. Cookies are little text files that are kept locally by a web browser in order for it to remember the "name-value pair" that recognizes them. (Pinto et al., 2020)

If a user visits that site again in the future, the browser saves the information in the form of a cookie and sends it to the server. This is when their browser sends data from their prior sessions back to the server.

## **1. Types of Cookies**

### **a. First-Party Cookies**

When a user visits a website, their browser places first-party cookies. Pageviews, periods, and the number of users are calculated using information collected by these cookies.(First-Party Cookie | PCMag, 2021.)

First-party cookie data is held by publishers and can be distributed to advertisers or agencies for targeted advertising. Aside from that, analytics solutions like Google Analytics utilize cookies to analyze user behavior and present it to the publisher in a tables and charts or graphical format. (Behera Rashmita, 2021)

### **b. Third-Party Cookies**

These cookies are set by domains not visited directly by the user. This occurs

when publishers include third-party items on their sites such as a chatbot, social plugins, or advertisements.(Third-Party Cookie | PCMag, 2021.)

Once installed, third-party cookies monitor users and save their data for targeted advertising and behavioral advertising. Consider the case below: A marketer's blog now includes a YouTube link. When this YouTube link is clicked by visitors, a YouTube cookie is placed in the visitor's browser. Until it expires, this cookie would be able to track the visitor.(Behera Rashmita, 2021)

#### **c. Session Cookies**

These are temporary cookies that expire when the user closes their browser or after a few seconds.(Session Cookie | PCMag, 2021.) E-commerce websites employ these cookies, among other things, to remember which products a user has added to their basket, to keep visitors logged in, and to compute each user session for analytics uses.

For example, if an e-commerce website does not use session cookies, the things added to the basket will be lost by the time the customer reaches the checkout page. The server will then forget about the customer and handle them as if they were a brand-new visitor.(Behera Rashmita, 2021)

#### **d. Persistent Cookies**

Persistent cookies, as their name suggests, stay on the visitor's browser for a long time. Persistent cookies must contain a termination date, which might be anything from a second to years. (Persistent Session Cookie, 2021.). Publishers employ persistent cookies to keep track of a particular user's interactions with their website.(Behera Rashmita, 2021)

#### **e. Secure Cookies**

Secure cookies, or cookies with encrypted data, can only be set by HTTPS websites. To make transactions secure, secure cookies are frequently used on e-commerce sites' checkout or billing pages. Similarly, secure cookies must be used by online banking sites for safety purposes.(Park & Sandhu, 2000)

### **2. Uses of cookies.**

Websites utilize HTTP cookies to enhance browsing experience. If cookies

were not used, people would have to login over again after leaving a site or refill their shopping cart if they accidentally left the page. Cookies are becoming a necessary part of the online experience. (Behera Rashmita, 2021)

#### **a. Functionality.**

Cookies enable visitors to engage with a service or website in order to have access to essential features. These features can be preferred language, for instance, someone accessing a website from France would prefer the website to open in French every time. Product enhancements that aid in the maintenance of service, as well as the retention of information related to a user's session, such as the contents of a shopping cart, even after the session has ended.(How Google Uses Cookies – Privacy & Terms – Google, 2021.) YouTube saves information like a user's favourite page layout and playback choices like autoplay, shuffle content, and player size in the 'PREF' cookie. Volume, repeat mode, and autoplay are all options for YouTube Music.

Some cookies help Google services run more smoothly. The 'CGIC' cookie, for example, optimizes search results deliverance by auto-completing search queries depending on a user's initial input. (How Google Uses Cookies – Privacy & Terms – Google, 2021.)

#### **b. Security**

Cookies can be used to keep users safe by authenticating them, deterring fraudulent activities, and securing their interactions with a service. Some cookies can verify visitors' identities by ensuring that only the account's genuine holder has access. For example, SID and HSID cookies save digitally signed and encrypted details of a user's Google Account ID and recent sign-in time. Google is able to resist a range of assaults thanks to the combination of these cookies, including tries to hijack the content of forms completed via Google services.(Park & Sandhu, 2000)

Cookies are used, among other things, to deter spamming, theft, and exploitation. For example, the 'pm sess' and 'YSC' cookies ensure that requests made during a surfing session are made by the visitor and not by other sites. Both cookies protect malicious websites from impersonating the user without the user's awareness. (How Google Uses Cookies – Privacy & Terms – Google, 2021.)

**c. Analytics**

Cookies that are used for analytics capture information that is utilized by services to better comprehend how users engage with their services. These data enable services to enhance the content they share with clients and provide better customer experience features. (Pennington, 2001)

Some cookies assist websites in determining how visitors interact with their content. Google Analytics, for example, uses a set of cookies to collect data and publish site usage metrics without recognizing site visitors, which helps site and application owners analyze how users engage with their offerings.(Pennington, 2001)

**d. Session management.**

Cookies aid in the recognition of users and the recall of prior login details and preferences on sites. An example is a website knowing to serve a user sports news as opposed to political news. (Pennington, 2001)

**e. Personalization.**

A site user can be served with personalized advertisements after viewing specific items and services or parts of a website. Cookies use collected information to build targeted advertisements. (Pennington, 2001)

**f. Online ordering.**

Cookies are used by shopping sites like Amazon to keep record of items users have recently viewed, enabling the sites to recommend additional items the consumer might like and maintain items in shopping baskets while they shop. Cookies can also save ones' shopping list to allow them to continue shopping even after they log out and back in. (Pennington, 2001)

**g. Authentication.**

Cookies track a users login activity on whether they are logged in and the credentials they have used to log in. This is used to streamline login information, users will not be required to remember their site username or email and passwords next time they want to log in. (Use of Cookies - Scientific American,2021.)

## C. Using AI To Track How Customers Feel

Marketers must learn about marketplaces and consumers, as well as micro-environmental factors that affect the company, such as industry trends, product/category demand, and customer behavior such as needs, wants, behaviors, emotions, brand loyalty, and purchasing habits. Marketers track their behavior in order to obtain a better understanding of the markets they operate in and the clients they serve.(C. Campbell et al., 2020)

Marketers have always needed to understand how customers feel about their products and services in order to succeed in the market. They spend high budgets in efforts to understand customers thinking and feeling. The most common way businesses have been using to get into the consumers' minds for years has been by the use of surveys and questionnaires.(Dunwoodie Brice, 2018)

The difficulty is that these questionnaires and surveys are unable to detect crucial emotional reactions, and as a result, critical feedback is missed.

In recent years, however, companies have been developing AI-driven approaches that can be used to adjust and better get customer feedback.

### 1. AI's role

Voice of the Customer (VoC) programs allow business executives to collect vital client input in order to address customer concerns and define the future of their goods. (Dunwoodie Brice, 2018)

In almost all surveys carried out, there is always 2 parts to the survey. The first part includes quantitative questions with predetermined answers that customers are required to select. An example is a question like -On a scale of 1-10, how well do you find our services| A client cant select 8 to indicate the services are good,however, this figure does not truly speak to what the customer whats to communicate.(Zaki M, 2021) If the customer is most happy about the services but unhappy about something small, this rating will not capture the unhappy experience.

This brings us to the second part, the qualitative part where a survey asks the customers to describe their experience using their own words. An open box can be provided at the end of the survey with the words -Write anything else you wish to share| Responders tend to be more forthcoming if they can use their own words,

unfortunately, most companies don't pay attention to this feedback that comes after the survey.(Zaki M, 2021) This is mostly because it would involve a lot of reading and sorting feedbacks which is both labour and time-intensive.

For instance, a client that rated a service 8/10 may be unhappy about something that they will describe in the comment section and if the business does not read the comment section this issue may go unaddressed.(Zaki M, 2021)

Firms need to invest more in capturing customer sentiments in qualitative comments like customer reviews, emails, call centres, social media replies, CRM systems, chatbots and more. This is possible if they have the appropriate tools for analyzing qualitative data. (Zaki M, 2021)

AI models and tools can aid in this situation. A customer-focused AI framework can be used to extract and map customer experience keywords (CX) These can detect both emotional responses such as surprise, pleasure, love, grief, and anger, as well as cognitive responses such as compliments, complaints, and recommendations.(Zaki M, 2021)

Without using quantitative survey findings, AI may be able to build and turn important characteristics into predictive variables that may be used to teach a model to predict if customers are happy, unhappy, or have a grievance.(Zaki M, 2021)

To gain deep insights, AI algorithms can catch particular words used by consumers and blend them with conventional assessment scale to produce genuine insight. These insights can be used to build both short and long term customer retention strategies.(Zaki M, 2021)

## **2. Benefits from Using AI**

AI can transform firms' outlook on customer experience and how it measures it.

### **a. AI Can Show What Is Missing.**

Companies don't always know what their customers want. The company may focus on touchpoints like sales which is not what customers care about. Companies can utilize an AI-driven qualitative methodology to demonstrate to them what they're lacking and provide them advice on how to address it. (Zaki M, 2021)

**b. Teach Employees To Focus On What Matters Most To Consumers.**

Understanding how consumers connect with and work with a company allows them to develop training programs to teach workers how to empathize with consumers, care about their problems, and have a smooth relationship with the company.(Zaki M, 2021)

**c. Determine Root Causes.**

Using AI systems companies can understand what the problems customers are experiencing are and what causes them. This can be used to stop these problems before they even occur. (Zaki M, 2021)

**d. Capture Real-Time Emotional And Cognitive Feedback From Consumers**

Consumers' unique feelings, like happiness, passion, surprise, rage, sorrow, and anxiety, can be used to derive cognitive responses, which are simulated in real- time using consumer feedback (complaints, compliments, and suggestions).(Zaki M, 2021)

**e. Identify And Curb Decreasing Sales.**

Firms can detect declining sales by segregating clients based on their financial worth and combining NPS with emotional feedback from customers. Spotting when a customer has reduced their spending can help the company come in and stop that client from leaving by improving their service.(Zaki M, 2021)

**f. Set Priorities For Initiatives That Will Improve The Consumer Experience.**

When firms are able to diagnose underlying pain-causing factors for customers, they can use this information to prioritize which factors need immediate attention. This helps improve customer experience and increase sales.

Firms can track the client journey in real time and generate insights to help service suppliers deliver a consistent customer experience and intervene quickly for optimal service recovery by deploying an AI-driven approach. (Zaki M, 2021)

**D. Smart Content Curation**

Content curation entails gathering material on a certain topic of interest with the goal of adding value by selecting, arranging, and caring for the items on

display. Content Curation is the act of searching for, gathering, and presenting all kinds of digital content regarding a specific subject matter. (Mullan Eileen, 2020)

Instead of creating original content, content curation includes gathering relevant content from a variety of sources, displaying the information in an organized manner.

With the unlimited supply of content available today, extra effort is needed to present content that sticks out. Articles and blogs are no longer the leading way to build a following or become a thought leader. The blog now has much less impact overall because it is another piece of information in an environment already saturated with content. (Dale, 2015)

Marketers can see better and quicker results with optimized content that are attractive and engaging. While content curation strengthens a marketers content marketing without investing a lot of time and resources, it still takes strategy and creativity to curate content well. (Dale, 2015)

The main purpose of content curation is to establish a brand as an authority on topics that important to their target audience, to develop strong and lasting relationships with customers, and to keep a brand top of consumers mind while building brand equity even when a company isn't selling directly. (Dale, 2015)

AI helps marketers curate content faster and more accurately by making it easier to comb through images, articles, audios, videos and other content to determine what's relevant to their audience, as well as brief descriptions of their specific features. These AI tools can also customize email newsletters for each and every single subscriber. (Jan Gordon, 2018)

## **1. Functions of content curation tools.**

- a.** Artificial intelligence (AI) content curators assist consumers in discovering material from a variety of subjects and resources.
- b.** They assist in the saving, reading, and management of web content ranging from articles to films to recipes. The apps allow consumers to flag and take notes on publications while syncing saved content across various devices. (Wolff & Mulholland, 2013)
- c.** Users can compile visual information into boards on platforms like

Pinterest, which they can share with the public and connect with other users.

- d. There are approximately 500 million tweets sent out every single day,(Sayce David, 2020) Twitter lists help users cut through the noise by the curation of tweets that the users want to see. Lists allow users to organize Twitterers or tweeps into groups that you may follow independently from your main feed.(Twitter, 2021)
- e. A platform called Scoopit allows users to discover content based on any topic they enter. They can read, share, and redistribute curated information through blogs, newsletters, and social media. It also suggests related topics to investigate as well as other users to connecton the platform to widen one's curatorial horizons.(Scoop.It - Content Curation Tool | Scoop.It, 2021.)

## **2. Importance of content curation**

### **a. Earn Expert Status**

Sharing relevant news and trends to clients establishes a company as a reliable source of information and increases brand awareness. People are more inclined to open the company's emails and visit their website if they feel they can count on them to give helpful information.(Roeder, 2021)

### **b. Save Time**

Writing a blog and creating other high-quality unique content on a daily basis is a lot of work. When there isn't enough time to compose a blog post. Curated content can aid in this situation.(Graff, 2017) One should already be aware of industry news, trends, and predictions. They should create a list of the most valuable articles and social media posts one come across and distribute them to their customers. It's more cost-effective and faster than developing original content, and it accomplishes the same goal: to keep the conversation continuing.(Graff, 2017)

### **c. Deliver Value**

Content curation adds value without simply focusing on one's company. Others who simply talk about themselves are disliked. The same is true when it comes to content marketing strategy. Successful content marketing encourages

discussion rather than controlling it.(Graff, 2017)

Consider content curation as an additional method of delivering value. Distribute content that informs and assists customers in making decisions. For instance customers should see a news item about tree trimming before hurricane season if a business run a tree trimming service.(Graff, 2017)

#### **d. Better Understand Customers**

Sharing selected material is a great way to figure out who one's audience is quickly, especially if one is just getting started. Tracking curated content performance allows one to rapidly identify what their subscribers and followers value, as well as the format in which they like to consume it (e.g., email newsletter, tweet, vlog).(Roeder, 2021)

One can also apply what they've learned to improve their products or services. For example, if a community bank finds that its subscribers are interested in personal finance articles, it can provide a webinar on the basics of personal finance or give personal financial consultations to young adults.(Roeder, 2021)

#### **e. Grow Business**

Curation enables one to share more content on a more frequent basis. If what they're sharing is worthwhile, people will notice. They'll be more likely to remember the business the next time they need to buy something.(Patel, 2018)

#### **f. Make Contacts**

Curating content is all about elevating other people's work, and it's also a terrific opportunity to meet new individuals who share one's interests. Use curation to engage with industry leaders and influencers in addition to creating a discourse with customers. Also, keep in mind that when one share their stuff, others are more likely to share theirs.(Graff, 2017)

#### **g. Stay Informed**

The internet is a never-ending source of data and content. Curation keeps one's company fresh by keeping one and their team up to date on the news and reports that are most relevant to their job.(Patel, 2018)

Website visitors can be engaged by showing them content that is relevant to

them thanks to AI-powered content curation. (Gordon Jan 2018) When a visitor to a website buys one thing and is then displayed other items, this is an example of this. That are related to the purchased item, such as purchasing a phone on Amazon and receiving phone case recommendations. Alternatively, they could be reading a food blog and being directed to a blog about spices.

## **E. Programmatic Media Buying**

The automation of ad distribution is known as programmatic media buying or programmatic marketing. (Dave Chaffey, 2012). Programmatic media buying is the use of automated technology to help ones' business buy ad space. (Macy Storm, 2021)

It employs data and algorithms to assist marketers in reaching the appropriate individuals at the appropriate time and in the appropriate location. To begin, advertising entails much more than simply purchasing ad space. There's no denying, though, that ad purchasing is – and historically has been – the business's lifeblood.(Chen, 2019)

The only way the intended audience will notice the ad, no matter how creative or amazing it is, is if it is placed correctly. Purchasing the best advertising space at the best market rates and directing them to the proper audience, then, is the entire marketing ploy.(Brayer, 2020)

Ad exchanges, that run automated bids that bring opposite parties of the transaction together, manage the market for digital marketing space. Advertisers are interested in purchasing ad space on the web. Website owners who have online space to sell are known as publishers.

The entire process is raised to a higher point with programmatic advertising. It employs algorithmic algorithms to auction and place digital ad impressions via ad exchange sites in a fraction of a second..(Brayer, 2020)

In addition, programmatic employs traffic analytics and internet targeting tools to serve impressions a lot accurately, efficiently, and at the desired scale, resulting in a higher return on investment for marketers and publishers alike. (Brayer, 2020)

## 1. Three components for programmatic media buying

When it comes to programmatic ad buying, there are three main components to consider:

### a. Sell-Side Platform (SSP)

The SSP is where publishers sell their ad space at the end of the process. Buyers can use advertising space on a company's website to promote display, mobile, or video adverts.

Companies who want to sell ad space are added to the sell-side platform, which provides advertisers with a wide range of advertising possibilities.(Storm, 2021)

These ad spots are automatically sold to customers in real-time, allowing buyers to identify sellers with available ad space quickly and easily.

### b. Demand-Side Platform (DSP)

The DSP is another component of programmatic ad buying. This section is where prospective advertisers can search for ad inventory to promote their businesses. Companies can buy ad space on the publisher's website to reach out to people who are interested in their products or services.

Advertisers can use data like geography, age, and previous online activities to target their audience on the proper sites utilizing the DSP.(Storm, 2021)

### c. Ad Exchange

The ad exchange is the final component of programmatic media buying. To process the purchasing and selling of ad space, the DSP links to the ad exchange. This section allows marketers to select and purchase ad space.(Storm, 2021)

The advertiser and publisher agree on the costs for the ad space here.

## 2. Types of programmatic media buying

There isn't just one way to buy advertisements for a business with programmatic ad buying; there are several options. The following are three different types of programmatic advertising:

### **a. Real-Time Bidding (RT)**

Any advertiser or publisher looking to purchase or sell ad space can use real-time bidding, often called an open auction. RT bidding for these commercials takes place, and the firm with the highest bid wins the ad space.(Deshpande, 2020)

One can bid on ad impressions and buy advertisements in bulk with this type of programmatic ad buying. They have access to a huge number of websites and a vast audience, but they have no idea where ones' advertising will show. It implies they face the danger of their adverts showing up on sites where they don't want them to.(Deshpande, 2020)

### **b. Private Marketplace**

A business's programmatic advertisements can only appear on the websites within the private marketplace if they've been invited. The private marketplace is an invitation-only market that allows publishers to choose which businesses to advertise on their site. In a private marketplace, advertisers often reserve premium ad slots for a limited number of advertisers.(Brayer, 2020)

They can set aside ad space in order to entice advertisers willing to pay top cash for premium ad space on their site. Advertisers also have complete control over where their ads appear in this marketplace, which is a significant advantage over real-time bidding.(Brayer, 2020)

### **c. Programmatic Direct**

This is another type of programmatic ad purchasing. There is a sale of ad space between the buyer and seller in this sort of ad buying. Instead of using an ad exchange, these companies agree on conditions for advertising on the publisher's website.(Storm, 2021)

Because one must acquire an invitation from the publisher to advertise on their site, this marketplace functions similarly to a private marketplace. The main difference is that instead of relying on bidding and auctioning, ones' company collaborates with the publisher to establish the price. One pays a set price for advertising on a publisher's site when they use programmatic direct.(Storm, 2021)

### **3. How programmatic ads work.**

- Someone visits a website containing advertising space and clicks on it.
- The available ad space on the owner's website is put up for sale (SSP)
- Advertisers who are eligible bid for the ad space (DSP)
- The ad spot is awarded to the highest bidder.
- For the user, an advertisement shows on the website.

The entire procedure takes milliseconds, and the visitor is completely unaware that an ad auction is taking place.(Storm, 2021)

### **4. Benefits of using programmatic ad buying**

#### **a. Reach A Wider Audience**

One can reach a larger audience of leads interested in what they have to offer by using programmatic ad buying. Multiple ad exchanges and networks are supported by this sort of advertising, making it simple to widen ones' reach and get their adverts in front of individuals who are interested in their products or services.(Choozle, 2021)

#### **b. Adjust Ads To Perform Better**

A major advantage of programmatic type of advertising is the ability to fine-tune ones' campaigns to achieve better results for their company. After they've launched their advertising, they may evaluate their effectiveness to see if they're generating results. Programmatic advertising provides reporting that allows them to see how effective their campaigns are. (Choozle, 2021)

If their campaigns aren't performing as well as they'd like, they can tweak and optimize them to make them better.

#### **c. One Can Do Everything Automatically**

The fact that everything is done automatically is one of the main advantages of programmatic media buying. One won't have to waste time deciding which website to advertise on or making the necessary arrangements. The algorithm does all of the work for them, making campaign management a breeze.(Rachel, 2020)

#### **d. Transparency**

Programmatic advertising allows marketers and publishers to acquire real data on ad placements and activity, which helps to boost transparency..(Rachel,2020).

#### **e. Data Insights & Reporting In Real-Time**

Advertisers and publishers can use programmatic exchanges to get ongoing data and detailed reporting on advertisement placements and performance, making it possible for them to optimize campaigns faster and more precisely.(Rachel, 2020)

### **F. Predictive Analytics**

This is a data analytics approach which uses historical information to make upcoming or future predictions. (John Edwards, 2021).

Predictive analytics is a sort of sophisticated analytics that uses past data, analytical modeling, data mining tools, and machine learning to create predictions about upcoming events. Predictive analytics is used by businesses to discover data trends and identify hazards and opportunities. (Wayne, 2007)

Big data and data science are frequently associated with predictive analytics. In today's businesses, data from transactional records, equipment log files, pictures, video, sensors, and other resources abound. Data scientists employ deep learning and machine learning algorithms to detect trends and make forecasts about future events in order to obtain insights from this information.(Wayne, 2007) Linear and nonlinear regression, neural networks, support vector machines, and decision trees are only few of the techniques used. The use of predictive and non prescriptive analytics in conjunction can then be used to drive actions based on predictive insights. (Nyce, 2007)

#### **1. Predictive analytics in marketing**

Today's consumers have more options than before. They are no longer limited to what is available at their neighborhood shop; they can order anything, at any time. Vendors, merchants, and service providers are all fighting aggressively as a result. Staying ahead of consumer trends and desires is the only way to stay competitive. This is made feasible by predictive analytics, which allows marketers to assess client

behaviors and patterns, foresee future shifts, and create ads that are tailored to their needs. (Virtanen, 2020)

## **2. Application of predictive analytics.**

### **a. Segmentation Of Customers And Audiences**

Predictive analytics can help you decide whether or not to segment your audience based on their behavior, demography, firmography, preferences, or other factors. They will be able to identify trends that they may not have anticipated by testing with numerous cluster models, and so arrive at specific audiences that are most appropriate for their firm.(Virtanen, 2020)

### **b. New Customer Acquisition**

One can utilize their consumer data to construct identification models if they want to take their segmentation a step further. In reality, this means discovering and targeting prospects who are similar to their current customers in some way.(Brenner, 2021)

Facebook's lookalike audiences are a good example of this. One can use this function to put online a list of their greatest customers' emails, and Facebook will start targeting their advertising to those who are similar to them.(Virtanen, 2020)

### **c. Lead Scoring**

This is simply ranking identified prospects based on their potential to convert using previous customer data.

Businesses can utilize this data to activate appropriate advertising communications and/or prioritize their marketing team's outreach efforts when a prospect meets a specified threshold in their lead scoring process, depending on their business model. (Virtanen, 2020)

### **d. Content And Ad Recommendations**

While most successful e-commerce companies like Amazon and streaming services like Netflix and Spotify use collaborative filtering to generate relevant content and product suggestions, most marketers have not yet adopted comparable strategies.

In reality, collaborative filtering entails creating recommendations for content

ingestion, cross-selling, or upselling based on past behavior.(Virtanen, 2020)

Imagining one discovered that the majority of their new retail consumers started a trial right after encountering a case study of a leading retailer. They might wish to bring this case study to their retail prospects at an initial stage based on this behavioural information from a certain category to see if they can reduce the sales cycle.(Virtanen, 2020)

#### **e. Personalizing Customer Experiences**

For a long time, "Hey firstName" emails were the definition of personalization. The good news is that predictive analytics can help them go even further. Returning to ones important audience groups, lead scoring and triggered content recommendations, marketers may improve not just the relevance but also the return on investment of their marketing initiatives.(Virtanen, 2020)

#### **f. Understand Consumer Behavior**

Marketers can use the data to have a better knowledge of customer preferences based on previous encounters. Audiences can be segmented based on known interests and demographic data. Marketers will be better able to deliver individuals customized messaging at the correct time and on the right device as a result of this.(Brenner, 2021) In the end, this improves the consumer experience and brand loyalty by breaking through the continual ad cacophony.

#### **g. Optimize Resources And Spend**

Marketers can allocate their advertising budgets based on the value a consumer delivers. Predictive analytics finds the advertising channels and times that require greater marketing expenditure and resources, as well as where to cut back on marketing expenditure and resources.(Virtanen, 2020) For example, data for an ice cream company would most likely suggest that summer marketing efforts in northern temperate areas will provide better returns, allowing them to save the majority of their ad expenditure for the summer months.

#### **h. Retain Customers**

Finally, predictive analytics helps marketers better understand their clients' wants, which helps them retain customers. This helps generate product and service offerings that are relevant to the customer's purchasing history and interests, as well

as identify cross-selling and upselling opportunities that aren't worth pursuing.(Brenner, 2021)

## **G. Ad Targeting**

Businesses can deliver adverts to clients based on their attributes, interests, and shopping habits via targeted advertising. This is usually done by segmenting audiences based on basic demographics, shopping preferences, or surfing habits, and then creating personalised ads for each segment. (Lau Wilson, 2021)

Targeted advertising is a critical tool for online marketers and e-commerce businesses to cut through the never-ending barrage of commercials that internet users are bombarded with, providing customised information that consumers will recognize and engage with. Retargeting is a type of targeted advertising that helps clients go through the conversion funnel by improving ad personalisation.(Wilson Lau, 2021)

### **1. Types of Targeted Advertising**

#### **a. Contextual**

Advertisers can use contextual targeting to place ad content beside other content related to the product or service being promoted. Contextual targeting fits the ad's content to the area in which it's put, rather than plastering advertising across the internet in areas which have nothing to do with the product or service being supplied.(What Is Targeted Advertising: Guide - Definition | SendPulse, 2021.) Customers will have a more integrated experience as a result, and they'll be able to tell if their product is relevant to anything they're interested in. An beauty shoe brand displaying an ad on a blog about beauty contest is an example of contextual advertising. In most cases, advertisers will build an advert and correlate it with certain keywordsthat the ad publisher will check for relevancy.(What Is Targeted Advertising: Guide - Definition | SendPulse, 2021.)

#### **b. Behavioral**

Similar to contextual advertising, behavioural targeting places adverts across the web based on user behaviour and browsing activities. One can target clients with advertising based on their search or browsing history with this form of advert

targeting. Clicked weblinks, purchases made, time spent surfing online pages, social media following, and other characteristics can all influence behavioural ad targeting.(Criteo, 2018)

### **c. Geotargeting**

This is an important element in an advertisers' toolbox, specifically for firms that operate in certain regions. Geotargeting is essentially the process of directing advertisements to people depending on their geographic location. This is especially handy for firms selling location-based products or ads marketing a specific event in a certain location.(Lau Wilson, 2021)

### **d. Social Media Targeting**

Many buyers increasingly choose to buy through social media rather than a specific brand's site or in a physical shop, as social media has become a hotspot for advertising and e-commerce companies. Brands can use consumer behaviour on the internet, via search engines, and on social networking platforms to deliver advertising that is relevant to their interests. Targeting on social media can be thought of as a form of behavioural targeting. (Lau Wilson, 2021)

## **2. Advantages of Targeted Advertising**

### **a. Provide A Higher Level Of Customization**

Because of its well-documented impacts on customer attraction and retention, click-through rate (CTR), and consumer lifetime value, ad personalisation has become one of online marketing's "Holy Grails." Businesses can deliver various messages to different clients based on the information they have about them thanks to targeted advertising.(Lau Wilson, 2021) Customers are more likely to respond to advertising and engage with a brand if the company can demonstrate that it knows their needs and wants. The facts are supported by research:

- Personalized adverts are preferred by 71% of clients.
- Personalization in digital marketing has been shown to increase revenue by 15%.
- Repeat purchases are encouraged by personalization, with 44 percent of customers becoming repeat buyers as a result of ad customisation. (Lau

Wilson, 2021)

**b. Increase Brand Perception And Raise Brand Awareness**

If a businesses' commercials are poorly placed, prospect purchasers will notice. Filling a consumer's browser with advertisements that don't align with their interests or give anything relevant to them can hurt a company's image and reputation. Businesses, on the other hand, may improve their image by delivering relevant adverts and high-quality content to customers who are most likely to like it. This helps the brand gain acceptance among top customers and build strong brand equity in its speciality.(Lau Wilson, 2021)

**c. Streamline Marketing Activities And Keep Resources Focused On Expanding Your Business.**

Targeted ads make the most of every bit of creative content a business publishes on the web. Targeting allows a business to concentrate its resources on the most profitable audience groups. Generic advertising is low-reward and typically expensive in comparison to its real benefits.(Lau Wilson, 2021) Targeted advertising, when combined with basic automation to publish ads that are tailored to each audience category, takes a lot of the labour out of discovering high-potential customers and drawing them to the company.(Lau Wilson, 2021)

**d. Increase The Return On Marketing Investment In Brand Marketing**

Targeted ads depend on client data that has been obtained, such as demographics, interests, and activity patterns, to contact customers in the manner they desire to be engaged. Client data eliminates the assumption in customer gaining and allows them to spend less money on people who are unlikely to convert.(Lau Wilson, 2021)

## **H. Dynamic Pricing**

This is a pricing technique in which variable prices are used instead of set prices. The dynamic pricing model's main assumption is to sell the same product at various prices to different groups of customers. Selling the same goods to different groups of people at varying prices is known as dynamic pricing.. (den Boer, 2015)

Dynamic pricing is very important than it is now, with the ongoing

development of internet purchases. In an increasingly competitive world, prices must make sense, and pricing strategies must be adaptable to changes in client demand and purchasing habits. Overall profit margins are influenced by the ability to act swiftly and decisively on pricing.(den Boer, 2015)

Pricing in the retail industry has traditionally been determined by static price rules based on a restricted number of data inputs. Massive volumes of vital information, both transactional and non transactional data were underutilized as a result of this approach. Data that could help them make better, more flexible pricing selections! (How Dynamic Pricing Works: Data Driven Price Optimization, 2021)

Data-based adaptive pricing methods are exploiting the potential of this consumer data and applying it to drive pricing decisions in today's fast and highly competitive retail market. The exponential growth of big data, as well as the prospect of using AI and machine learning to pricing strategies, has opened up new avenues for smart pricing options.(How Dynamic Pricing Works: Data Driven Price Optimization, 2021) Machine learning technology advances dynamic pricing by allowing it to analyse significantly larger data sets and take into account a variety of influencing factors when predicting the impact of price adjustments.

Consumer behaviour and the data provided by it should be a primary priority for internet retailers. When addressing pricing, companies tend to price at the value a consumer ascribes to a certain product by examining consumer behavior; they also strive to influence, measure, and raise that sense of value.(How Dynamic Pricing Works: Data Driven Price Optimization, 2021) The information collected by purchasers' behaviour, and the greater competitive space, are both inputs to this innovative method of pricing.

Artificial intelligence and machine learning have made it easier for retailers to have a full overview of what rivals and consumers are doing at any particular time, as well as a better knowledge of the impacts and causes behind their purchasing behavior. The wealth and sheer volume of data generated by internet users are allowing for new, more educated tactics to improve customer satisfaction and company profitability. How Dynamic Pricing Works: Data Driven Price Optimization, 2021)

## 1. Big Data In Retail

There has been an explosion of data resulting from the rapid rise of online, mobile, and social media-driven commerce, resulting in the availability of "big data." And, when it comes to pricing, Hundreds of millions of products all over the entire online biosphere see real-time price modifications numerous times per day, amounting to tens of millions of pricing choices taken every day around the world. This translates to millions and millions, if not billions, of data points.(Virmani, 2021)

It appears that the increase in data growth will continue to accelerate. Every time a consumer spends money online, particularly in the retail industry, they leave a data footprint. Other data sources include competitor prices, meteorological data, and inside firm data, such as information obtained on marketing operations. (Virmani, 2021) Big data is often divided into two categories by retailers:

- a. **Structured data:** Structured data is information that has been pre-defined and processed into a specified structure before storage.(Smallcombe, 2022) Identities, locations, transaction histories, loyalty cards programs, and almost any other data with a "amount" form of measurement are examples of this type of data.
- b. **Unstructured data:** Unstructured data is data that has not been processed and is stored in its original format until it is needed.(Smallcombe, 2022) Product comments, photos, socialmedia likes and mentions, and any other social media statistics fall under this category.

This vast volume of unstructured and structured data may be collated and used to construct a coherent strategy thanks to sophisticated dynamic pricing systems. Big data is the source that allows for adaptive pricing. This technology is centered on data computation optimization and all that goes along with it.(How Dynamic Pricing Works: Data Driven Price Optimization, 2021) It's not just about gathering a large amount of data; it's also about using that data to improve ones' pricing. More and more retailers are turning to big data to help them make better pricing decisions and maintain a competitive advantage. As a result, the large amount of information made available is a major dynamic pricing catalyst.(How Dynamic Pricing Works: Data Driven Price Optimization, 2021)

Any store or business that uses dynamic pricing is reliant on the information that is used to make judgments. In this case, the information integrity is crucial since it will be fed into an algorithm that will develop and influence demand estimates and automated price choices.

## 2. Algorithms for dynamic pricing and data

For price management, dynamic algorithms employ artificial intelligence and machine learning technology, ensuring scalability and allowing businesses to make educated decisions. Furthermore, by taking into account implicit and explicit relationships, these algorithms enable organizations to achieve portfolio-level pricing.(Parlak, 2021) We can distinguish between two sorts of pricing algorithms:

- Traditional rule-based algorithms: these algorithms' logic is clearly programmed. They're often made up of a set of "if/then" algorithms that determine prices dependent on a number of variables. (Smith, 2020)
- Algorithms based on machine learning; These algorithms use a collection of training data to predict how price affects sales, income, and profit. Optimizations may be performed out based on the projectionin order to satisfy company objectives. This algorithm's prediction logic isn't explicitly programmed. The system learns from new data on a constant basis.(Smith, 2020)

Traditional algorithms are limited in that they can only take into account a small number of influencing elements, usually not more than three. To manage and monitor the rule-based technique, a large amount of resources are required.(Smith, 2020) Retailers, on the other hand, are now better positioned to design the most effective pricing plan for their firm by combining big data with a machine learning- based approach.

With this advanced technology, it is feasible to conduct operations on large amounts of data that would be impossible for a single price manager to handle. A machine learning-based solution can predict demand for individual items in a company's assortment – a massive task when interacting with multitudes of SKUs – and it can take into account a variety of inner and outer factors involved such as stock levels, goal sales dates, rival information, time-based, and weather elements, among others. (How Dynamic Pricing Works: Data Driven Price Optimization,

2021).

### **3. Internal Data**

#### **a. Product Attributes:**

This section covers the cost, margin ceiling, base price, and MAP pricing. Product characteristics are a digital depiction of a company's assortment and a critical tool for optimizing dynamic pricing. Product ID, master-variant allocation, present price, RRP, lower and upper price limit, seasonal identification, brand, color, size, inventory levels, expiry date or target sales date, and a slew of other data factors are all typical. (How Dynamic Pricing Works: Data Driven Price Optimization, 2021). Using this type of data effectively requires grouping these attributes across categories. Because learning from data on single commodities is challenging for models, being able to use and learn from data at the class level is crucial. (How Dynamic Pricing Works: Data Driven Price Optimization, 2021)

#### **b. Inventory Levels:**

In terms of recent stock levels and total supply, this information is crucial. Current supply is matched with current demand, which is a key factor in how dynamic pricing software generates ideal market prices. (How Dynamic Pricing Works: Data Driven Price Optimization, 2021).

#### **c. Transactional Data:**

Included are all operations, unit sales, pricing histories, and adjustments. This includes buyer information as well as manufacturing or sourcing costs. Any machine learning-based dynamic pricing software would require sales and transaction data from their company to estimate desire for every item in their range. (How Dynamic Pricing Works: Data Driven Price Optimization, 2021). This is the foundation for the AI's price decisions. At the very least, all sales data is required, such as which things were sold for what price.

More transaction data increases the AI's predicting ability and, as a result, its outcomes. Items seen by the client, products placed to their shopping carts, items deleted from their carts, items stored or added to a desire list, and items searched for are all illustrations of this. One may have seen products, created shopping carts, abandoned shopping carts, stored monitor lists, or entered search keywords, to

mention a few. (How Dynamic Pricing Works: Data Driven Price Optimization, 2021)

#### **4. External Data**

##### **a. Competitor data**

This can be extensive, but it typically includes things like customer reviews and rankings, as well as list and shipping prices, purchase pricing, FBA, out of stock and regions. Crawling (also known as scraping) software can be used to collect this information from publically available sources. Businesses are growing more sophisticated in their attempts to limit their competitors' ability to obtain this data. (How Dynamic Pricing Works: Data Driven Price Optimization, 2021)

##### **b. Days of the week**

Consumer demand is influenced by the days of the week. Incomes will most likely increase or drop based on the day, dependent on a company's business plan. They may be a week or weekend operation. (How Dynamic Pricing Works: Data Driven Price Optimization, 2021)

Based on demand for those specific days, a dynamic pricing plan can use this information to adjust rates to go up or drop over the weekend. Businesses can use pricing optimization technologies to build bespoke periods for implementing pricing modifications that are one time, continuing, or only for a limited period. (How Dynamic Pricing Works: Data Driven Price Optimization, 2021)

##### **c. Holidays**

The demand for specific things will rise as the holidays approach, such as wrapping paper for Christmas or flowers for Mother's Day. Retailers can discover which items in their assortment are experiencing increasing demand and when by using historical transaction data overlaid against holiday seasons. This information aids a dynamic pricing solution in estimating demand and determining the best quote for the items in question. (How Dynamic Pricing Works: Data Driven Price Optimization, 2021)

##### **d. Regional trends**

The capacity to reach a far broader audience through online platforms and

marketing promotes e-commerce-based retail. Specific events and situations in their area, on the other hand, may influence demand from different regional, based on what is going on in their area. (How Dynamic Pricing Works: Data Driven Price Optimization, 2021)

#### **e. Weather and seasonal data**

Weather can have an impact on sales, both in general and for specific products. Good weather, for example, is terrible for online retail, whereas inclement weather causes consumers to stay in the house and do online shopping. As summer approaches, customers will start shopping for fans and lighter clothing while during winter, they will shop for warmer clothing and heat generating devices. Temperature and weather forecast data might thus aid in forecasting demand and adjusting prices as needed. (How Dynamic Pricing Works: Data Driven Price Optimization, 2021)

### **5. Data's influence on dynamic pricing algorithm.**

#### **a. Quantity of data**

A new retailer will not have customer reviews and testimonials. This is an example of inadequate data availability for some retailers. Furthermore, businesses are understandably hesitant of using personal information about their customers. However, because the machine learning model is always adjusted to the specific circumstances, even if these data points aren't available, it can be improved to deliver good outcomes. (How Dynamic Pricing Works: Data Driven Price Optimization, 2021). Personal data, for example, isn't even required for price improvements at the product level.

Machine learning approaches to dynamic pricing, on the other hand, are well adapted to learning from large data sets, as previously noted. The more data there is, the better a machine learning system could be taught to generate precise forecasts. Previous pricing changes and their influence on sales are learned by a machine learning system. As a result, obtaining data on 2-3 price adjustments per product with a big number of related sales is advantageous. (How Dynamic Pricing Works: Data Driven Price Optimization, 2021)

#### **b. Quality of data**

The machine learning model designed for dynamic pricing will be directly

influenced by the viability data collected. When data is of high quality, it meets the following criteria:

- The information is satisfactory
- The information is clean with no missing values.
- The data is consistent.

## **I. Web And App Personalisation**

Web personalization involves creating personalised experiences on websites for website users. Website personalization lets companies provide site users with unique experiences generated and attached to their needs and desires based on time of day, location, number of visits to the site, previous purchases, and more, as opposed to providing a wide, uniform experience, it customizes the experience for each particular user. (Website Personalization - Optimizely, 2021.)

By no means is personalization a novel concept. Returning customers will be greeted by surname and waiters will be familiar with their "regular order." A tired-looking couple with three children wants to buy what they came for and get out of there, whereas a lone person quietly wandering the aisles might be interested in some chat. Personalization is so common in the real world that it often goes unrecognized.(Olympia, 2021)

By utilizing data, website personalization attempts to mimic that very same kind of one to one care in the digital realm:

- i. Customers receiving specific offers from online shops they frequent.
- ii. Visitors to travel websites can see specials based on time of the year.
- iii. Media sites can show viewers geotagged videos based on their location.

### **1. Importance of web personalization.**

According to recent research, personalizing a website can improve its brand and, as a result, increase conversion rates.

The world of marketing is always changing, and this can make customers feel bombarded with messages. Marketers' competition is at an all-time high, making it

increasingly tough to attract a customer's attention. (Olympia, 2021)

The answer to overcoming this is to provide consumers with tailored experiences and adjust their marketing efforts to their specific demands. Businesses may now employ powerful personalisation technologies to create one-on-one customer experiences that make users feel special and valued.(Housman, 2021) Customers who are happy create more revenue!

#### **a. Better optimized and converting landing pages**

Because landing pages are frequently the initial point of contact between a company and a potential customer, they're an ideal area to incorporate website personalisation. When consumers are perusing the web, they tend to make split-second decisions, so personalized touches on their landing page might persuade them to stay and browse. When it comes to web browsing, first impressions are crucial!(Housman, 2021)

For instance one offers web development as a service. They could wish to make a short greeting video for first-time visitors that describes their web design services using website personalisation. They should probably add a "Contact Us" popup because returning visitors are more likely to contact them with their information.(Olympia, 2021)

#### **b. Better understanding of ones' customers**

Understanding ones' target customers is an important aspect of any successful marketing strategy. They can begin to sort and filter different categories of customers and choose how to promote to each one using website personalisation. They may then show multiple versions of their page or popups to different target audiences, providing them with more personalized experiences. A/B testing can be used to improve each of these different experiences.(Housman, 2021)

Personalization like this is crucial for enhancing client conversion rates and generating more leads.

This is how it would appear in real life.

If one a clothes company, they may customise their clients' experiences by using their geographic location. This means that they can show winter clothing to Minnesota clients but not to tourists from Florida. This enhances the user experience

by displaying products that are most relevant to their needs.(Olympia, 2021)

**c. Increased time on site/decreased bounce rate**

When one gives their users a more personalized, relevant website experience, they're more inclined to browse and explore the products or services that they're interested in. As a result, they'll be more likely to spend time on their website.(Olympia, 2021)

Personalizing a website also reduces the number of users who abandon it after only viewing one page (i.e., bounce rate). One needs to show their users something interesting right immediately to entice them to remain around and learn more about their products or services. This is why it's a good idea to personalize what the eye-catching thing is, because every user is different, and what attracts one user may not be relevant to the next.(Olympia, 2021)

**2. Accomplishing website personalization.**

Many of the issues listed above can be immediately addressed by technological advancements. To be genuinely effective, website personalization necessitates the integration of multiple strategies:

- Finding new audiences: This is accomplished by going after based on their actions on ones' site for instance if a user is looking through children's apparel, looking for kenya vacations, viewing political videos, also what they know about the users through customer profiles ie previous behaviour and preferences.(Olympia, 2021)
- Creating compelling on-site experiences: If a business understands their visitors, you can create appealing on-site experiences tailored to them. To do so, they'll have to smoothly handle the scope and sophistication of those customized encounters..(Olympia, 2021)
- Continuous assessment and betterment: It's important to keep track of the return on ones' Website Customization investment. Since not every customized experience will be a success, it's vital to monitor how they're doing and make changes as needed.(Olympia, 2021)

## **J. Chatbots**

A chatbot, short for a chatting robot,(Dahiya, 2017) or is a computer software that employs artificial intelligence to replicate human communication via voice instructions, text dialogues, or both. Chatterbot is an a.i. tool that can be integrated and used in any popular chat application.

As technology progresses, more firms are shifting from conventional to electronic channels to interact with customers. Companies are incorporating AI approaches into their digital platforms to provide convenience through technology. Chatbots are a sort of a.i. that is becoming increasingly popular. Voice assistants like Amazon's Alexa and Google Assistant, as well as messaging apps like WeChat and Meta Messenger, use chatbot technology.(Frankenfield, 2020)

Chatbot is a computer software which communicates with customers like a human assistant would, but at a fraction of the expense. These bots are available to help customers at any time, regardless of time or location. These are preferred by many firms as keeping employees working for 24hours a day is vey costly.(Frankenfield, 2020)

### **1. Types of Chatbots**

#### **a. A Set Guidelines Chatbot**

This is a chatbot that acts according to a determined rules set and has limited conversational skills. It has a restricted vocabulary and can respond to a low number of inquiries while its intelligence is constrained by its programmed code.(Frankenfield, 2020)

An example is an automated phone answering bot used by banks to ask callers information. "Please tell me what I can do for you by saying accountbalances, account transfer, or bill payment," the bot would say. If the customerreplies "credit card balance," the bot will repeat the instruction or transfer the call to an operator.

#### **b. Machine Learning Chatbot**

An artificial neural network modeled by the neural nodes of the human brain powers a machine learning chatbot. As new expressions and words are presented, the

chatbot is programmed to self-learn. The amount of enquiries a chatbot can react to grows as it receives more voice or textual dialogues, as does the accuracy of each response.(Onose, 2021)

Meta (as Facebook's parent firm is now named) has developed a machine-learning chatbot that allows businesses to communicate with their customers via Facebook Messenger. Users may buy shoes from ebay, order a ride from a taxi like lyft, and have chats with a calabry about current events using the Messenger bot. The bot would respond if a user asked the celebrity a query like "What's new today?" through the app.(Frankenfield, 2020)

Chatbots are used in a wide range of businesses and for a wide range of purposes. Retail bots pick and groceries's orders, weather bots deliver daily or weekly weather forecasts, and lovely bots simply interact with people in need of a friend.(Frankenfield, 2020)

Chatbots are also used in the fintech industry to help consumers with their financial service enquiries and applications. Thinking Capital, a small company loan in Montreal, utilizes a virtual assistant to give customers 24/7 support via Meta messenger. To be declared suitable for up to \$300,000 in finance, a macro business needing a loan from the corporation merely needs to answer essential qualification questions and inquiries raised by the bot.(Frankenfield, 2020)

## **2. Chatbot Technology.**

### **a. Rules-Based Chatbots**

These chatbots follow a already programmed rules. They frequently created through a user interface that is graphical in which a bot builder creates paths using a decision tree.(Adamopoulou, 2020)

### **b. Generative Chatbots**

After training by a programmer or bot creator, AI chatbots will learn on their own. They answer questions based on current and previous user messages.(Adamopoulou, 2020)

### **c. Support / Live Chat**

Sales and sales development teams are the primary users of these bots. They

can also be used by Customer Service departments, as live support provides a straightforward way of addressing inquiries in real time.(Rock, 2021)

### **3. Benefits of Chatbots.**

Customers want immediate and correct responses on the same day. Humans can provide this support but their abilities are limited hence the need to implement machine.

#### **a. Increase Website Conversion Rate**

Businesses put forth a lot of effort and hard work to get visitors to their web pages, only to have a low conversion rate. If a marketer is successful in getting the correct information and offers to potential customers at the right moment, their chances of closing a transaction increase dramatically. This will be made easier with the help of a chatbot.(Stephanie, 2020)

#### **b. Immediate Availability**

Chatbots, unlike traditional customer care, are available any time of the day for 24/7. It is not affected by a large quantity of demands and requests either, a bot does not get tired.(Stephanie, 2020)

In the event that the chatbot is unable to answer a query, the users may be referred to a human. Outside of business hours, customers can leave a message for customer care to respond to by email the next business day.(Stephanie, 2020)

#### **c. Reduces Human Interaction**

Shortening the time staff spend dealing with customer inquiries to saves a business a lot of money.

A business may drastically reduce engagement times across all channels, by phasing out customer service employees and replacing them with chatbots. This is one of the most well-known advantages of using a chatbot.(Haughey, 2021)

## **K. Re-Targeting**

Retargeting, also called as remarketing, is a type of internet advertising that helps to keep a brand in front of bounced users after they exit a site. Only 2% of internet traffic buys on the first visit to most websites. Remarketing is a marketing

strategy that allows businesses to reach the 98% of visitors who do not buy on their first visit. (Haig, 2019) One can use retargeting to remind clients about their products and services after they leave their website without making a purchase.

### **1. Retargeting functions.**

Retargeting is a cookie-based method of tracking one's audience anonymously throughout the Internet using basic Javascript code.(Haig, 2019)

This is how it works: One adds a small bit of code to their website that is unobtrusive (this code is sometimes referred to as a pixel). Their site visitors will not notice the code or pixel, and it will have no effect on the performance of their site. The code creates an anonymous browser cookie every time a new visitor visits their site. When their visitors who have cookies later surf the web, the cookie tells their remarketing provider where and when to show advertisements, making sure that their ads are only shown to persons who have previously viewed their site.(Haig, 2019)

### **2. Importance of Retargeting.**

If customers always made a purchase on their first visit to ones' website, that would be great. Unfortunately, that is not the case. This is where Retargeting comes into play.

- a.** Retargeting reminds people of ones' product while they're on the internet, whether they're on social media, reading their favourite news site, or looking up their competition. (How Retargeting Works | AdRoll, 2021.)
- b.** One can segment people based on their attributes or behaviour and target them in a variety of ways, allowing One to create a relevant advertising experience that leads to increased sales. (How Retargeting Works | AdRoll, 2021.)
- c.** Regardless of which segment one chooses, they'll be targeting a set of people who have previously expressed interest in their brand by just visiting their website. (How Retargeting Works | AdRoll, 2021.)

### **3. Retargeting effectiveness.**

Retargeting increases online sales by keeping ones' brand in front of

customers' eyes and bringing back "window shoppers" when they're ready to buy. Ones' brand develops traction and notoriety every time a customer views their retargeting advertising. Retargeting efforts are known for their high click-through rates and increased conversions, which emphasize the importance of effective branding and repeated exposure.(How Retargeting Works | AdRoll, 2021.)

## **L. Dynamic Emails**

Dynamic emails are any tailored component of mass communication that varies based on user activity or data one has about their subscribers. Marketers add variables to the mailing list and group people based on common traits such as location, gender, age, and so on to create tailored emails. AMP emails are another term for dynamic email content. (Price, 2021)

Subscribers receive a more personalized experience when businesses use dynamic email content. In exchange for a highly tailored shopping experience and product recommendations, many customers are willing to share personal data with marketers. This strategy could help ones' company win the inbox wars, create long-term relationships with customers, save time, and improve income.(What Is Dynamic Email Content: Definition, Examples - Definition | SendPulse, 2021)

### **1. Dynamic email content functions.**

Going above and beyond for ones' subscribers involves creating exceptional dynamic email content. Because customer expectations are already high, their team will need to come up with innovative methods of delighting their target audience.(Price, 2021) This can be achieved by delivering tailored content to ones' clients.

- Step 1: Collect Data**

One will need access to consumer data to tailor their email marketing using dynamic email content. They may improve their customer data collection in three ways:

- a. Customer interviews** – Ask ones' customers directly what they want to get out of utilizing their product or service. (Price, 2021)
- b. Customer feedback** – Allow ones' customers to communicate with them

in different ways, such as through email marketing statistics (opens, clicks), sales CRM, surveys, quizzes, and website live chat. (Price, 2021)

- c. Community research- Gather review data from major platforms and hunt up important keywords on social media networks. (Price, 2021)

- **Step 2: Segmentation**

When it comes to tailoring ones' dynamic email content, customer segmentation is crucial. Ones' goal is to organize their subscribers in such a way that they will be more engaged with their emails. (Price, 2021)

When deciding on client segments, it's important to make use of a customer lifecycle. The customer lifecycle illustrates the steps that customers go through when they consider, buy, and use ones' product. It demonstrates how to interact with customers throughout the buyer's journey. (Price, 2021)

Customer segments can be created based on the customer's lifecycle by:

1. **Reach & Engage:** Concentrate on attracting new visitors to ones' website. They may have found the site through a Google search, a Facebook ad, or an influencer mention. (Price, 2021)
2. **Nurture & Educate:** Make a list of fresh leads who are interested in ones' company. These customers want to know how ones' product can help them with their specific problems. (Price, 2021)
3. **Convert & Close:** Close the transaction with ones' enthusiastic customers. To get them to the shopping cart, they can send them personalized calls to action. (Price, 2021)
4. **Support & Grow:** Convert customers to become brand evangelists. By sending relevant product notifications and offers to each consumer, one may delight them.

- **Step 3: Customize dynamic email messages for each segment**

The next stage is to decide how one will modify the email after they've chosen their consumer segments. There are countless ways to customise ones' material for their subscribers. (Price, 2021)

## 2. There are 4 customization options

### a. Demographics

One of the simplest methods to adapt one's messaging is to use basic demographics. Here are a few samples of demographic data from customers: (Price, 2021)

- i. Ones' age
- ii. One's gender
- iii. Geographical location
- iv. Ones' marital status
- v. Ones' education level
- vi. Professional occupation

### b. Psychographics

Psychographics is a marketing strategy that focuses on a customer's beliefs, values, and interests. Depending on ones' industry, they may be able to tailor their message to their political beliefs, hobbies, or cuisine preferences. Email surveys, website quizzes, and client interviews are all good ways to get this information. (Price, 2021)

### c. Subscriber Preferences

Ones' customers have a clear idea of what they want from their company. As a result, ask them directly to select the type of material they want to receive.

When subscribers sign up for ones' newsletter, they can give them the ability to voice their preferences. Alternatively, at the bottom of their emails, include a link to a preference centre. (Price, 2021)

### d. Behavioral Data

Behavioural data examines the patterns created by a customer's actions. They can tailor an email to a subscriber's previous purchases, website activity, or email interaction. Understanding customer behaviour gives them the chance to re-create more favourable brand actions. (Price, 2021)

### **3. Benefits of dynamic email content.**

#### **a. Improve The Customer Experience**

Statistics on customer satisfaction demonstrate that they must prioritize their customers. Dynamic content allows one to tailor their message to each individual customer. One can customize email content to reflect a subscriber's geographic area, interests, and previous purchases.(Nelson, 2019)

#### **b. Save Team Time**

One's team can build personalized experiences at scale with dynamic email content. There's no need to create distinct campaigns for different demographics.

Instead of sending several emails to one's leads, customers, and advocates, one may send one email with different segmented. This automation allows them to focus on important email strategy as opposed to mundane activities.(Vigne, 2021)

#### **c. Increase Campaign Engagement**

Customers prefer to interact with content that is tailored to their needs. When one's subscribers receive relevant material in their inboxes, they are more inclined to open the messages and take action. More opportunities to cultivate connections and sell items come with increased brand involvement.(Nelson, 2019)

## **M. Content-Based Filtering**

This is a type of recommender system that tries to forecast what a consumer might enjoy basing on their previous actions. This then filters the relevant content and serves to the consumer. (What Content-Based Filtering Is & Why You Should Use It | Upwork, 2021)(Content-Based Filtering | Recommendation Systems | Google Developers, 2021.)

By matching keywords and attributes connected to database objects to a user profile, content-based filtering creates suggestions. Previous purchases, customer ratings, downloads, products looked for on a site and/or put to a basket, and product link clicks are all used to create the user profile. (Content-Based Filtering | Recommendation Systems | Google Developers, 2021.)

For instance if a user purchased a smartphone from a website and has also

purchased smartphone accessories. The user profile displays previous purchases such as phone holders with credit card sleeves, in addition to keywords like smartphone company, make, and model.

Using this data, the system may suggest phone cases that have RFID blocking fabrics. These stop unauthorized credit and debit card scanning. The customer may not have been expecting an RFID blocking recommendation. (What Content-Based Filtering Is & Why You Should Use It | Upwork, 2021)

## **1. How content-based filtering works**

### **a. Assigning Attributes**

Content-based filtering works by attributing to database objects to allow algorithms to learn about them. These characteristics are largely determined by the items, services, or content they're promoting. (What Content-Based Filtering Is & Why You Should Use It | Upwork, 2021)

Attributing assignments can be a huge undertaking. Many businesses rely on expert teams to manually attribute each item. Netflix, for instance, has employed screenwriters who assess tv shows based on plotlines, tone, and emotional effects, as well as shooting locations and actors. The recommender uses the resulting tags to group films that have similar characteristics. (What Content-Based Filtering Is & Why You Should Use It | Upwork, 2021)

### **b. Building A User Profile**

User profiles are another crucial element of content-based recommendation systems systems. Profiles keep track of the database items with which the user has engaged, accessed, reviewed, played, or listened to, as well as their properties. (What Content-Based Filtering Is & Why You Should Use It | Upwork, 2021)

Attributes that appear across numerous items are given a higher weighting than those that appear less frequently. Not all of an item's properties are equivalent to the audience, this helps define a degree of priority. User feedback is also important especially when weighing items. This is why websites encourage users to reviews products and services regularly if they offer suggestions. (What Content-Based Filtering Is & Why You Should Use It | Upwork, 2021)

The system creates a unique model of every user's likes and preferences based

on attribute weightings and histories. The model contains of weighted features that the targeted user is likely to like or dislike based on previous activity. All database objects are compared to user models, and scores are assigned based on their resemblance to the user profile. (What Content-Based Filtering Is & Why You Should Use It | Upwork, 2021)

## **2. Use of Content-Based Filtering.**

Content-based filtering provides a number of advantages, including:

### **a. To Start Generating Recommendations, No Data From Users Is Required.**

Content-based screening doesn't really need information from other users to produce recommendations. After a user has browsed and viewed a few items and/or done certain transactions, a content-based screening system can begin delivering appropriate recommendations. (What Content-Based Filtering Is & Why You Should Use It | Upwork, 2021)

This makes it ideal for businesses without a huge user base to experiment with. It's also beneficial for merchants with a wide user base but few engagements in particular areas or specializations. (What Content-Based Filtering Is & Why You Should Use It | Upwork, 2021)

### **b. Recommendations Are Highly Relevant To The Use**

Content-based recommenders can be highly tailored to the recipient's interests, including suggestions for specialized products, because the method concentrates on correlating the characteristics and attributes of a database object with the person's profile. (What Content-Based Filtering Is & Why You Should Use It | Upwork, 2021)

For example, content-based filtering will identify a given user's tastes and interests, such as hot sauces made in Houston with natural Scotch bonnet peppers, then propose things that share those traits. Firms with vast libraries of a particular type of commodity, such as telephones, might benefit from content-based filtering because it allows them to offer recommendations based on a range of characteristics. (What Content-Based Filtering Is & Why You Should Use It | Upwork, 2021)

**c. The User Can See Through Recommendations.**

The user gets a sense of transparency from highly appropriate suggestions.

**d. Avoids “Cold Start” Problem.**

Regardless of the fact that content-based screening necessitates some preliminary input from users in order to generate suggestions, the value of initial ideas is frequently higher. (What Content-Based Filtering Is & Why You Should Use It | Upwork, 2021)

**e. Filtering systems are often easier to develop.**

A content-based filtering system's data science is quite basic. Assigning characteristics is the true task in content-based filtering. (What Content-Based Filtering Is & Why You Should Use It | Upwork, 2021)

## **N. Smart Assistants**

This is sometimes referred to as virtual assistant. It is a software program that can do activities, provide services, and answer questions on a smart device.(McLaughlin, 2021)

Most smartphones and tablets, as well as desktop computers and devices like the Echo by Amazon and Google Home, have virtual assistants. (Lynch, 2021)

They listen for exact spoken orders from users and react in the voice they choose using a mix of specialized computer processors, microphones, and software.

**1. Functions of smart assistants.**

**a. Give hands-free control**

Voice interaction with a smart assistant can be done without raising a finger. This essential feature improves everyday life by making it simpler and more efficient, whether it's operating broader smart devices or browsing the cloud via the internet to find precisely what they need.(Lynch, 2021)

Though one may adjust the initial settings, this is how to have smart assistant talk to them. Simply add ones request after saying the 'wake words:

Google Assistant: —OK Google|

Apple Siri: —Hey Siri॥

Amazon Alexa: —Alexa॥

Microsoft Cortana: —Hey Cortana॥

Samsung Bixby: -Hi Bixby॥

Depending on the device one is using, they can usually wake up the assistants by pressing a button. Long-pressing the Home button on an iPhone, for example, will bring up Siri.(Lynch, 2021)

#### **b. Answer queries**

Getting quick responses to questions is among the most prevalent purposes for a smart assistant. Before speaking back to them, the assistant will conduct an internet search for the data they need. Simply say "wake" and then follow up with your question.

Google Assistant has proven to be the greatest assistant for this type of activity so far thanks to its capability to access the massive information of Google search engine. All assistants, on the other hand, are constantly working to improve their capacity to respond to questions. (Lynch, 2021)

Alexa also lets users to install 'Skills,' that are app-like voice - controlled programs that allow users to do things like dial an Uber or check their trip time. (Lynch, 2021)

#### **c. Become one's digital dj**

Using services like Amazon Music, Google Play Music, Apple Music and Spotify, voice assistants can become one's private DJ.

If they have a subscription to one of the services, they can request the assistant to play any of the millions and millions of songs available. Amazon Music, which works with Alexa, can even figure out what kind of music customers want based on a few lines of songs. (Lynch, 2021)

#### **d. Get recommendations**

One's smart assistant will learn their tastes and routines over time and will provide recommendations for activities, locations to go to, and songs to play.

Google Assistant is wonderful for getting personalised recommendations that

can be unexpectedly accurate because of its vast knowledge and links to their web search history. (Lynch, 2021)

**e. Place calls on ones' behalf**

When one needs to make a call handsfree, they simply activate the assistant and instruct it to place the call. If the smart assistant has access to the contacts list, it can make a call on their behalf.

(Lynch, 2021)

**f. Help with shopping**

One can shop any of the things offered on Amazon using amazon alexa with just a voice command by simply asking and following the instructions. (Lynch, 2021)

**g. Establish home automation**

If one has a variety of smart gadgets in their house such as Philips Hue smart linked lighting systems or a smart TV they can control them using the smart assistants. (Lynch, 2021)

If they're using equipment that supports the many third-party manufacturers out there, Alexa, Siri, and the Google Assistant can dim ones' lights, lock their doors, change the temperature on their smart thermostat, and much more. (Lynch, 2021)

**h. Get to know their routines**

One could program their smart home equipment to respond to specific words like "Alexa, I'm home," which would turn on the lights and the thermostat, start playing music and turn on a kettle. (Lynch, 2021)

**i. Set reminders**

With only a single verbal request, intelligent assistants can set timed reminders. This will set off an alarm and notify one of what has to be done and when it needs to be done.

When they use a smart speaker to set a reminder, it will intelligently send it to their phone as well, ensuring that they do not forget. (Lynch, 2021)

#### **j. Give medical advice**

Amazon has partnered with NHS, so when one asks Alexa a question relating to health, they'll only get responses based on NHS standards. It's specifically good for small aches and pains. (Lynch, 2021)

### **O. Image Recognition**

AI image recognition is a collection of algorithms that can recognize patterns in the photos they study on a pixel-by-pixel basis. It may train from all these patterns and improve the precision and quickness with which it recognizes them over time. (Ciuksys, 2020)

#### **1. Use of ai image recognition in marketing.**

##### **a. Identify visual trends**

All marketers know that hours are spent on content trend analysis every week, month, and quarter. It's often the most time-consuming part of the whole content creation process. It's also hardly accompanied by any real proof to support the content ideas stated. Marketers frequently make decisions based on a hunch. (Ciuksys, 2020)

AI picture recognition replaces the tedious process of manually scanning across thousands of photographs on Google or manually going through digital marketing campaigns online to find and preserve the best ideas. AI's ability to discern precisely what they're searching for and select the best examples from a big number of alternatives, examples that have already been tried and proven to be effective, replaces the selection process. (Tarr, 2021)

What important is what occurs in the background when the search is carried out. While an advertiser may be limited to filtering through 100 to 200 postings and picking out ideas based on gut instinct, AI could extract photos or videos from millions of samples and categorize them according to specific themes.

It's all sorted for them instantaneously, whether it's a specific mood, colour, environment, or the things included in the photographs. It helps them make content decisions by speeding up the ideation phase of the workflow and adding a layer of data. (Ciuksys, 2020)

### **b. Logo Recognition**

The importance of AI logo recognition in photographs for corporate marketers is enormous, especially when it comes to properly evaluating the effectiveness of sponsorship relationships.

Currently, brand marketers evaluate endorsement performance mainly via survey data, quantitative data provided by event organizers, or statistics on reporting of those events on television or online. What's often underestimated is how much extra brand lift a sponsor can get from event broadcast on social media – a channel that accounts for a significant portion of the pie.. (Ciuksys, 2020)

Advertisers can immediately monitor just how much exposure their brand receives when it appears in images or videos posted across social media platforms thanks to AI logo recognition. Celebrity endorsement, brand recognition, and brand awareness may all be added to the list in the future. (Ciuksys, 2020)

It's vital to keep in mind that this isn't anything that can be accomplished manually. Without AI, they would not really know where to look or how to properly calculate it, but with AI, it's as easy as hitting a button. (Ciuksys, 2020)

### **c. Interest Recognition**

Understanding what our audiences actually care about is the ultimate goal for all marketers. Every plan and campaign revolves around it. In this sense, any piece of the puzzle that contributes to the creation of a complete picture of the customer is priceless. (Ciuksys, 2020)

With Socialbakers' new AI-Vision picture recognition engine, users may use AI to find photos based on their true advertising personality preferences, which are developed by the system based on their own first-party data. This is the kind of innovation that could revolutionize marketing. It alters the way we produce content for our audiences. (Ciuksys, 2020)

## **P. Pitfalls Of Ai**

It's impossible to conduct an objective analysis of AI in marketing without considering its drawbacks. Given its relative youth, AI has a slew of unresolved difficulties that will necessitate further research.

Prior to widespread use, these issues must be thoroughly addressed. The use of artificial intelligence (AI) for malicious purposes is one of these challenges.

Goals, employment displacement impacts, wealth distribution effects, and weaknesses in the system. Some of the most pressing challenges revolve around underlying technologies.

### **1. High Cost Of Creation**

Because AI is evolving on a daily basis, hardware and software must be upgraded on a regular basis to keep up with the latest requirements. Machines necessitate repair and maintenance, both of which incur significant expenditures. Because they are extremely complicated machinery, their construction necessitates exorbitant prices.(Kumar, 2019)

### **2. Job Displacement**

Even when AI is employed for its intended objectives in marketing, the issue of job displacement must be addressed before the technology becomes widely adopted. Marketing, fortunately, is ideal for AI benefits, as many of its use cases entail augmenting work in order to free up more time for value-adding activities. However, many components of marketing may still be automated, resulting in job displacement.(Duggal, 2021)

Human interference is growing less as AI replaces the majority of repetitive tasks and other tasks with robots, causing a big challenge in employment standards. Every company is attempting to replace minimum-qualified employees with AI robots that can perform similar tasks more efficiently. (Duggal, 2021)

### **3. Does Not Improve With Experience**

Artificial intelligence does not develop with practice; if given the same command again, it will execute the same function. It can cause wear and tear over time. It has a lot of data, but it can't be accessed or utilized in the same way that human intelligence can. Furthermore, they are unable to adjust their responses to changing situations because they are unable to cope with the dynamic environment. The topic of whether it is truly exciting to replace humans with machines is frequently posed to us.(Pros and Cons of Artificial Intelligence - A Threat or a

Blessing? - DataFlair, 2021.)

Artificial intelligence does not have feelings, thus there is no substitute for working with all of one's heart or with all of one's passion for them.

#### **4. No Emotions**

Humanity's two most significant characteristics are ethics and morals, yet incorporating them into Artificial Intelligence is difficult. AI is fast expanding uncontrollably in every industry, and if this trend continues in the following decades, humans may be wiped out. (Advantages and Disadvantages of Artificial Intelligence - Javatpoint, 2021.)

#### **5. Malicious AI**

AI can deceive unsuspecting people and acquire access to highly sensitive information by processing and analyzing data in real-time. Customers can be charmed with highly personalized marketing messages in the form of a newsletter, for example, but a malicious individual could use AI to deceive a consumer into entering their financial information like credit card information into a fraudulent system.(Cannella, 2019) The concept of "phishing" is not new, and it impacts customers all around the world. However, as artificial intelligence (AI) advances, phishing methods may become more complex and destructive to both brands and customers. A scammer who collects data on customers' previous purchase histories with a brand, for example, might simply construct highly personalized phishing scams.(Cannella, 2019)

## **IV. METHODS AND TECHNIQUES**

### **A. Methodology**

In order to build the methodology, various research approaches were investigated. As is customary in social sciences and marketing research, the study plan used a mix of qualitative and quantitative techniques. The methodological technique followed a clear guideline in terms of study aims, research questions, and structured interview design. Biases in research were taken into account. The sampling was done with care with the purpose of identifying the most suitable applicants so that the most meaningful feedback on the research topic could be obtained.

A qualitative research study of the literature review was carried out on available online resources published after 2004 up to 2021 and combined with a cross-sectional study carried out based on a structured interview that would be run between the 2nd of December and 15th of December 2021 within the population and businesses located in Nairobi Kenya. The population will include; Web developers, digital marketers, Search engine optimizers, students, residents and business owners in Nairobi.

### **B. Instrument**

A Structured interview questions developed by researchers and the opinions of two scientist in the field were taken about suitability of the questions to the literature

The respondents replied to structured interview questions hosted on Google forms that were presented to them via a link. The questions are listed on the Appendix section of this thesis. During this process, the respondents entered selected multiple answers from a range of answers that resonated with their own experiences. The answers were captured and recorded by google forms.

The methodological technique followed a strict outline in terms of study aims, research questions, and structured interview. Research biases were considered. Sampling was done with care with the purpose of selecting the most suitable candidates so that the most meaningful feedback on the research topic could be obtained.

## C. Structured Interview Results And Discussion

The interpretation of the acquired research data was based on the methodological methodology stated in Chapter 1. This chapter responds to research questions, interprets responses, and emphasizes key quotations. Graphic interpretations accompany each research question providing a detailed overview.

### 1. How would you classify yourself?

This question is meant to determine the respondent's career or position.

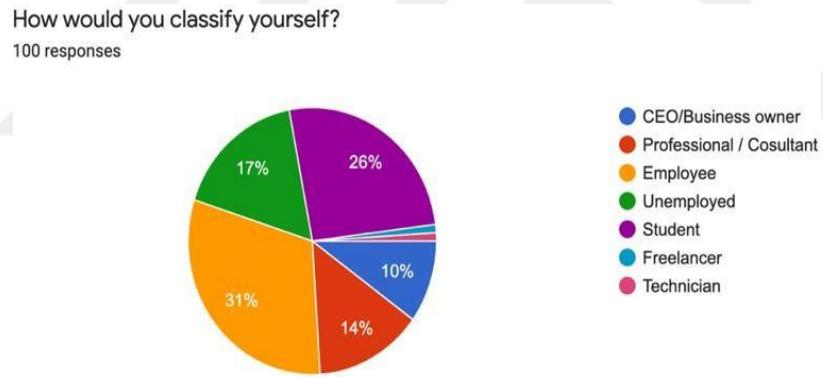


Figure 14 Responses for question 1

Figure 14 shows that 100 respondents answered this question. 31% of respondents are employed in different capacities, 26% are students, 17% are unemployed, 14% are professionals in their fields, 10% are business owners while the remaining 2% are Freelancers and Technicians.

These respondents are ideal for this study as they are either users or AI in marketing or are the targeted audience of AI used in marketing hence have first-hand experience of the research topic.

## 2. Which search engine do you frequently use?

This question intends to identify why search engine is used by respondents as these are used by marketers to target their audience.

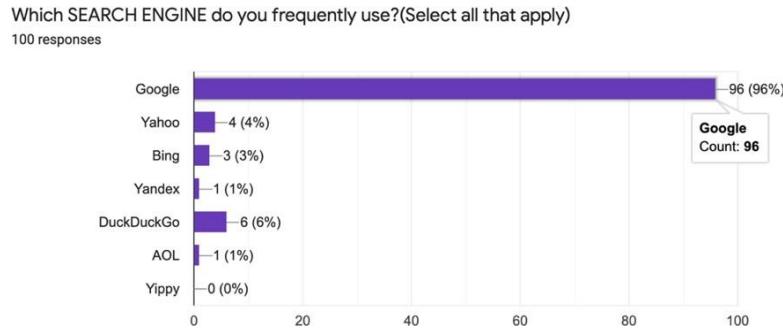


Figure 15 Responses for question 2

Figure 15 shows that 100 respondents answered this question. 96% of the respondents use Google. This is overwhelming traffic for google which happens to be the number one search engine used worldwide by both businesses and consumers. 6% use DuckDuckGo, 4% use Yahoo, 3% use Bing, 1% use Yandex and another 1% use AOL

## 3. Which social media platform do you use?

This question is meant to illustrate penetration of social media sites among the target audience. Apart from search engines, social media platforms are used the most by companies to reach their customers. On these sites the invest a lot of time and resources.

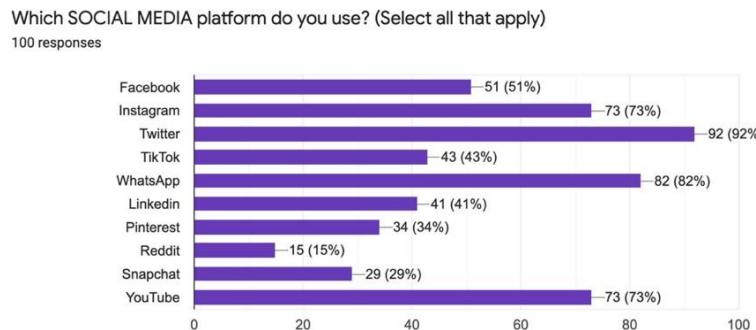


Figure 16 Responses for question 3

Figure 16 shows that 100 respondents answered this question which gave

multiple answers were required to select all the sites they use. Out of the 100 respondents, 51% use Facebook, 73% use Instagram, 92% use Twitter, 43% use Tiktok, 82% use WhatsApp, 41% use LinkedIn, 34% use Pinterest, 15% use Reddit, 29% use snapchat, and 73% use YouTube.

These figures show how widespread social media is and why it's important for businesses to use these sites to reach their prospective clients. With structured interview questions like this, companies can focus their efforts and resources on platforms that offer the most traffic and earn them the highest ROI.

#### 4. How often do you use social media?

This question is meant to determine the frequency of the responders on using social media platforms.

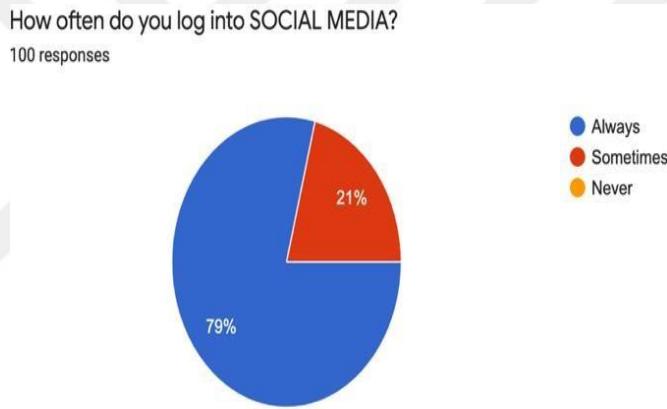


Figure 17 Responses for question 4

Figure 17 shows 100 responders answered this question. A whopping 79% of the population is always on social media and 21% is on social media sometimes. None said they never use social media. This feedback further demonstrates the extent at which social media has been adopted by the society today. If any organization was doubting whether they should adopt social media marketing efforts other than offline marketing strategies, this response makes it clear that missing out on social media is missing out almost entirely on your target audience.

**5. Have you ever seen an advertisement on your social media for something you searched for on search engine like Google?**

As discussed in chapter 3 under Retargeting, marketers use targeted advertisement to locate internet users around the internet. For instance if you search for vacation locations on google, marketers get this information and target ones' Facebook account with vacation deals. This Question was meant to determine how many responders have seen this marketing tactic in action

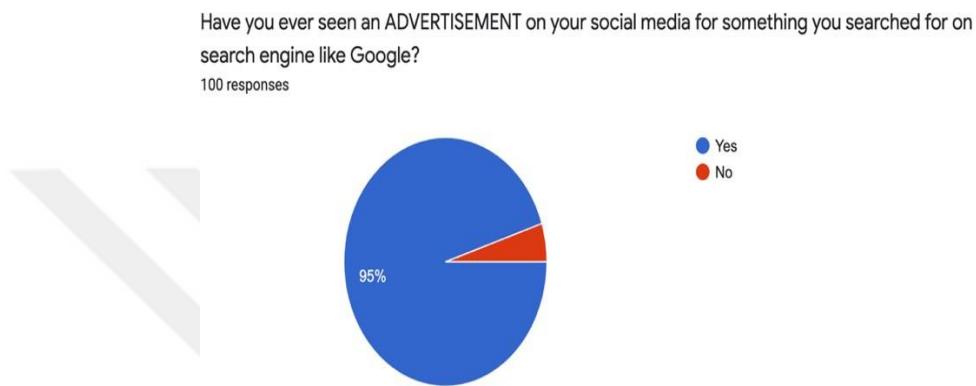


Figure 18 Responses for question 5

Figure 18 shows that 100 responders answered this question and this practice is widely and effectively used by markers as 95% of responders have been targeted with advertisements on their social media from their search engine activities.

**6. When chatting with businesses, do you find automated replies helpful?**

Automated responses are the responses that are used to when someone is not available to answer a client's questions at that particular moment. These responses are set up on emails and social media platforms and they often include an apology from the marker for not being online the time the question is raised and sometimes direct contacts like phone numbers to help the customer reach the marketing business even faster.

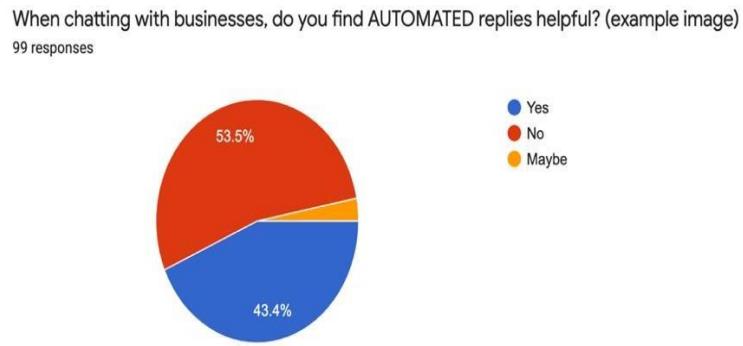


Figure 19 Responses for question 6

Figure 19 showed that 99 out of 100 respondents answered this question and 53.5% of respondents do not find this marketing tactic effective. While 43.4% find it effective. As a relatively new marketing strategy, companies can work to improve this service and present it in a more useful way to users so as to improve ROI.

## 7. Do you accept website cookies when visiting websites?

As discussed in chapter 3 cookies are used by websites to track users and help improve their experience the next time they visit the website or application. This question was meant to determine if users willingly let cookies track their surfing activities.

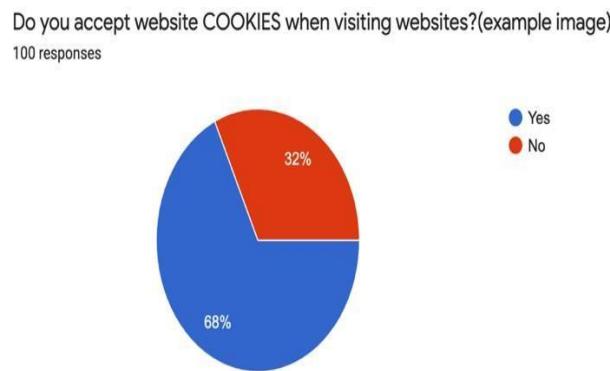


Figure 20 Responses for question 7

Figure 20 shows that 100 respondents answered this question and 68% of the respondents said they allow cookies. While only 32% present doesn't. This demonstrates that internet users like having their experience improved every time they are online.

## 8. How often do you use google maps?

Google maps uses AI to suggest routes to be used. This question was meant to determine how often the respondents use this service.

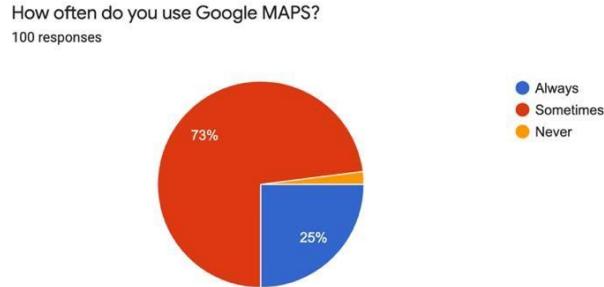


Figure 21: Responses for question 8

Figure 21 shows that 100 responders answered this question and 73% of them said they use google maps services sometimes while 25% said they use it all the time. Only 2% said they never use it. This shows that a big percentage of the population gets assisted by AI.

## 9. How often does google maps get you to the right destination?

This question is meant to determine the accuracy of the AI used by google in suggesting accurate routes and recommendations.

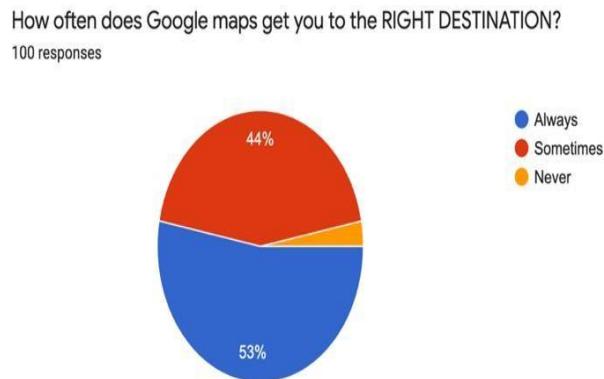


Figure 22 Responses for question 9

Figure 22 shows that 100 respondents answered this question and 53% of them have always gotten to the right destination because of the google AI system. 44% have gotten there sometimes and only 3% said they have never gotten to the

right destination using google maps. This shows that the system however new functions quite well and with continuous improvements it will get even better.

## 10. Which E-mail service do you frequently use?

This is a lead up question that aims to determine which email services are frequently used by the respondents

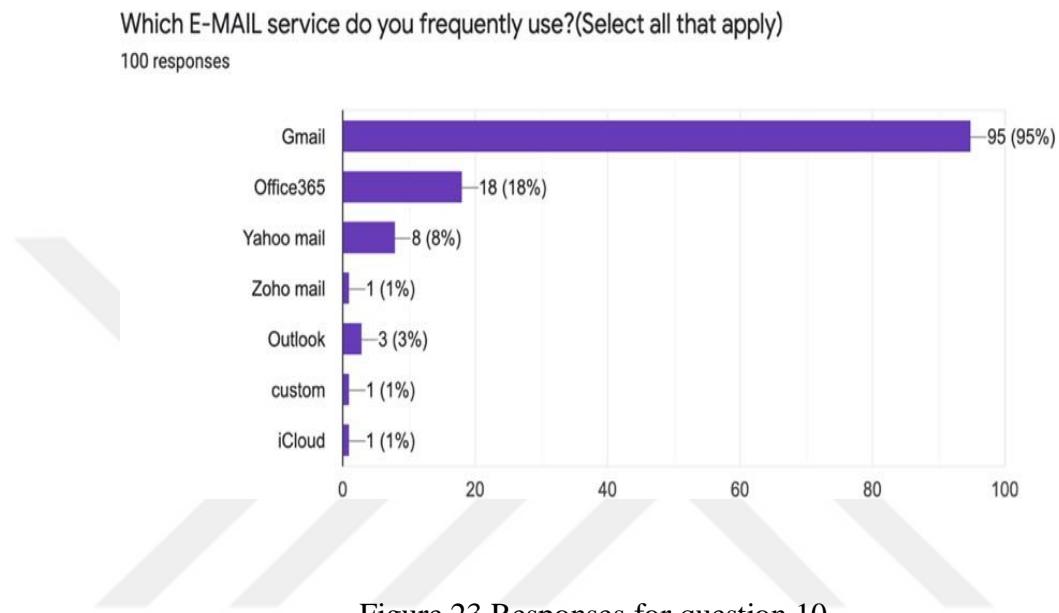


Figure 23 Responses for question 10

Figure 23 shows that 100 respondents answered this question and 95% use Googles Gmail, while 18% use office, 8% use yahoo mail, 1% use zoho mail, 3% use outlook, 1% use iCloud and 1% use their own custom emails.

## 11. Does your E-mail service filter spam emails?

Spam emails are unsolicited or unwanted junk email sent out to an indiscriminate recipient. Because they are unwanted, users don't want to see them in their regular email folders.

This question meant to find out if the respondents email services filter unwanted emails.

Does your E-mail service FILTER SPAM E-mails?(example image)

99 responses

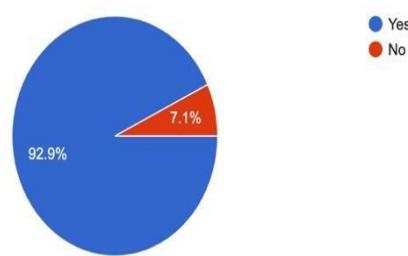


Figure 24 Responses for question 11

Figure 24 shows that 99 out of 100 respondents answered this question and 92.9% of them have spam emails filtered as opposed to only 7.1%. Email services have successfully integrated this AI feature

## 12. How well does your email service filter spam?

This a follow up question to the email services effectiveness in filtering spam emails. A good filtering system will save the user a lot of spam emails.

How well does your E-mail service FILTER SPAM?

100 responses

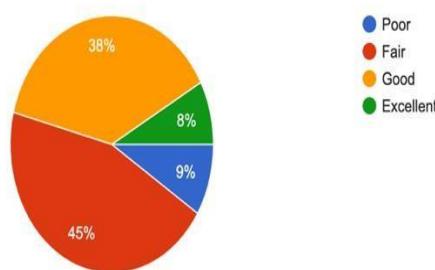


Figure 25 Responses for question 12

Figure 25 shows that 100 respondents answered this question and 45% think the filtering system is fair, 38% say it's good, 8% say its excellent while 9% say its poor. This feedback illustrates the spam filtering is not fully polished as the experiences are mixed. While the system gets improved to filter more unsolicited emails, marketers can learn to market to only targeted audiences and not random audiences.

### 13. Do you shop online? Which platforms do you shop on?

Online shopping has been on the rise since the inception of the internet. Its one of the most successful sections of the internet hence one of the most AI influenced sections.

This question is meant to determine which online shopping platforms is used frequently.

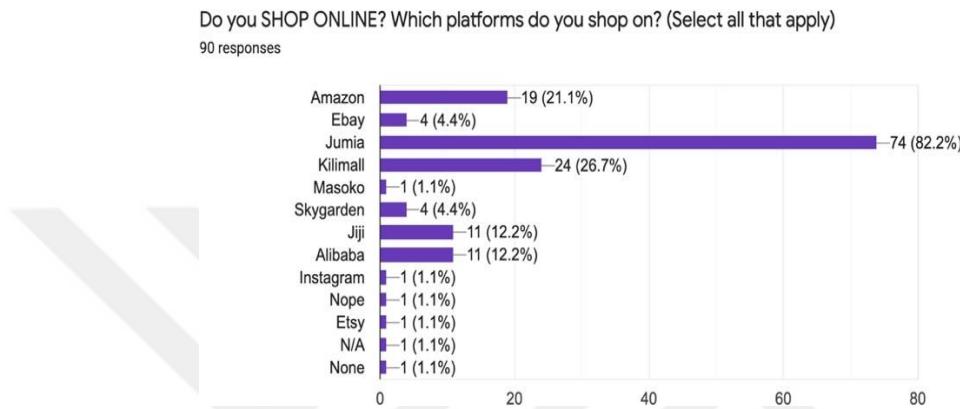


Figure 26 Responses for question 13

Figure 26 shows that 90 out of 100 respondents answered this question and with online shoppers being distributed as follows: Amazon 21.1%, Ebay 4.4%, Jumia 82.2%, Kilimall 26.7%, Masoko 1.1%, Skygarden 4.4%, Jiji 12.2%, Alibaba 12.2%, Instagram 1.1%, Etsy 1.1%.

With the corona virus pandemic online shopping has become the ultimate shopping experience and the results show, almost every respondent shops online hence it's important for marketers to improve the experience.

### 14. When shopping, do you find related products suggestions useful?

As discussed in chapter 3, When shopping online, customers can be targeted with other products to encourage them to buy more. For instance when buying a phone online, phone covers can be suggested to be bought along the phone hence increasing phone cover sales.

This question was meant to determine if these suggestions are found to be useful by shoppers.

When shopping, do you find related product SUGGESTIONS useful? (example image)  
96 responses

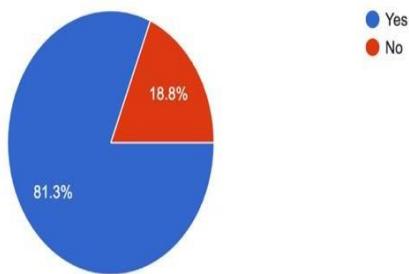


Figure 27 Responses for question 14

Figure 27 shows that 96 out of 100 respondents answered this question and 81.3% find product suggestions useful while only 18.8% found it not useful. This is an illustration of AI in marketing working effectively as intended.

### 15. When shopping, do you find comparison for similar products useful?

Product comparison is another as marketing tactic used to encourage shopping by offering a variety of products. As opposed to company websites where users only find one product, when shopping on platforms like Amazon users are exposed to a variety of products from different brands hence improving their shopping experience. This question was meant to determine the effectiveness of product comparison

When shopping, do you find COMPARISON for similar products useful? (example image)  
94 responses

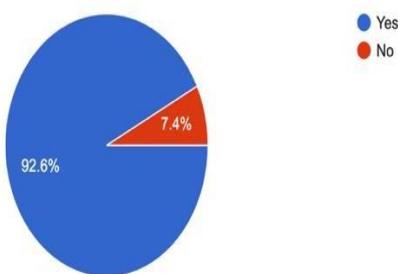


Figure 28 Responses for question 15

Figure 28 shows that 94 out of 100 respondents answered this question and 92.6 % said they find product comparison useful while only 7.4% don't find it useful.

This is very positive feedback for marketers as they can continue to refine this system and get even more shoppers and engage.

## 16. Do you stream videos? Which platform do you stream videos on?

This is a lead up question intended to determine which video streaming platforms are used by respondents.

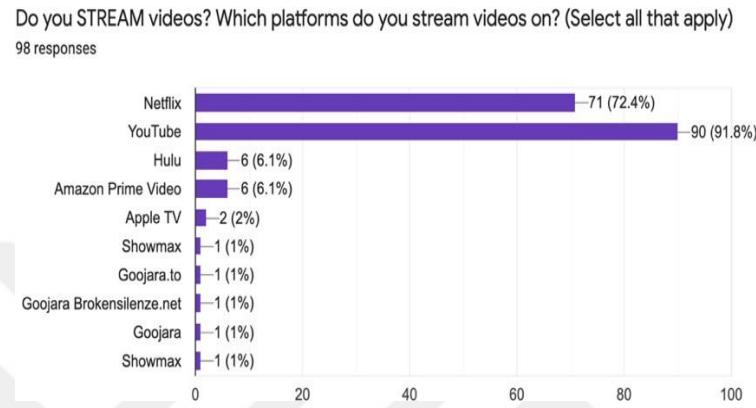


Figure 29 Responses for question 16

Figure 29 shows that 98 out of 100 respondents answered this question with the figures splitting as follows; 72.4% Netflix, 91.8% YouTube, 6.1% Hulu, 6.1% Amazon prime video, 2% Apple Tv, 1% Showmax, 1% Goojara. This shows that of the respondents' stream video online.

## 17. When streaming videos, do you find media recommendations/ Top picks/ suggested videos useful?

Streaming services use AI to recommend videos for streaming based on a user's past viewing experience. This question was meant to determine if users find this feature useful.

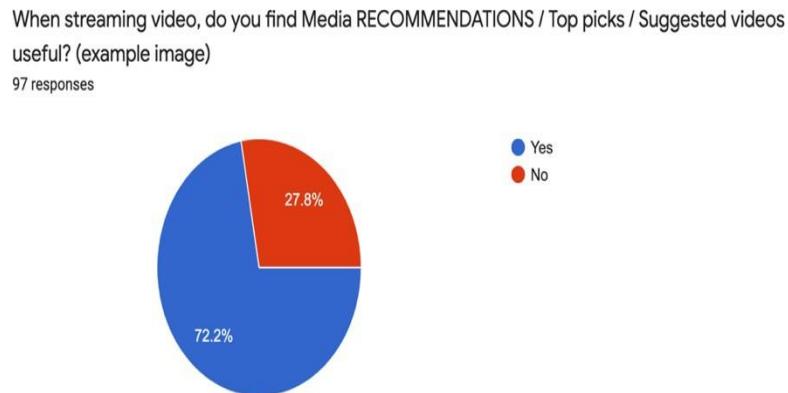


Figure 30 Responses for question 17

Figure 30 shows that 97 out of 100 respondents answered this question and 72.2% of them find video suggestions useful while only 27.8% don't. This is positive feedback for content makers and video streaming platforms as they can refine the AI to provide more targeted content to the viewers.

### 18. Do you use smart assistants like Siri, Alexa, Google Assistant and Bixby?

As discussed in chapter 3 Smart assistants are AI based systems that make life easy by performing mundane tasks. This question intended to find the population that uses these smart assistants as a lead up question.

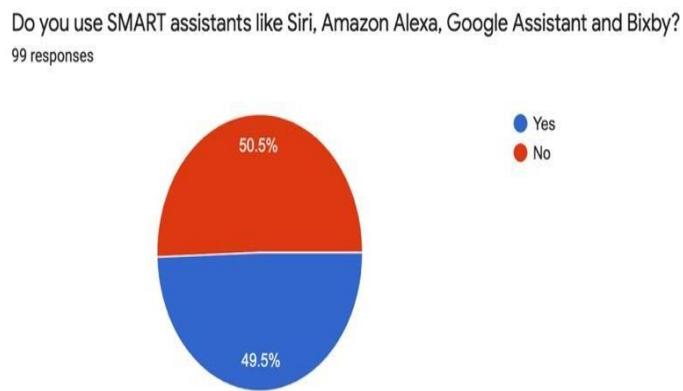


Figure 31 Responses for question 18

Figure 31 shows that 99 out of 100 respondents answered this question with an almost equal split as 50.5% said they don't use smart assistants while 49.5% use them. Perhaps companies can work on finding out why half the population has not adopted the use of smart assistants yet.

## 19. How often does the smart assistants give correct feedback?

This question is meant to determine the effectiveness of smart assistants AI systems.

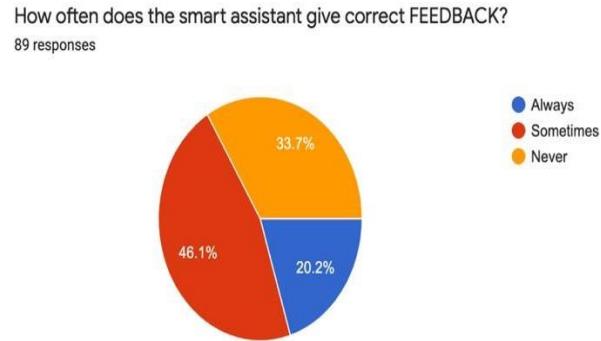


Figure 32 Responses for question 19

Figure 32 shows that 89 out of 100 respondents answered this question. 46.1% said the smart assistants never get give correct feedback, 33.7% said they sometimes get correct feedback, we can count that as 50-50 while 20.2% said they always get correct feedback from the smart assistants. This illustrates that the systems are not perfect yet but since they are always work in progress, they will get better with time.

## 20. Which ride share apps do you use?

This is a buildup question meant to determine ride share apps used by respondents.

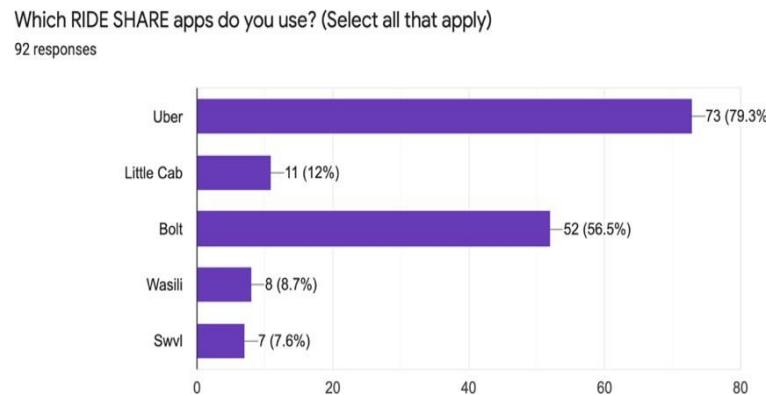


Figure 33 Responses for question 20

Figure 33 shows that 92 out of 100 respondents answered this question and the results are split as follows; 79.3% Uber, 12% little cab, 56.5% Bolt, 8.7% Wasili, 7.6% Swvl. This illustrates the penetration of ride share apps among the population.

## 21. Do you think the fare calculated by ride share apps is accurate?

Ride share apps use a complex AI system which includes Base fare, cost per minute, time of the ride, cost per mile, ride distance, surge boost multiplier and booking fee to determine passengers ride fare. This means every ride will have different factors producing different fares.

This question was meant to determine how many respondents find this fare system accurate.

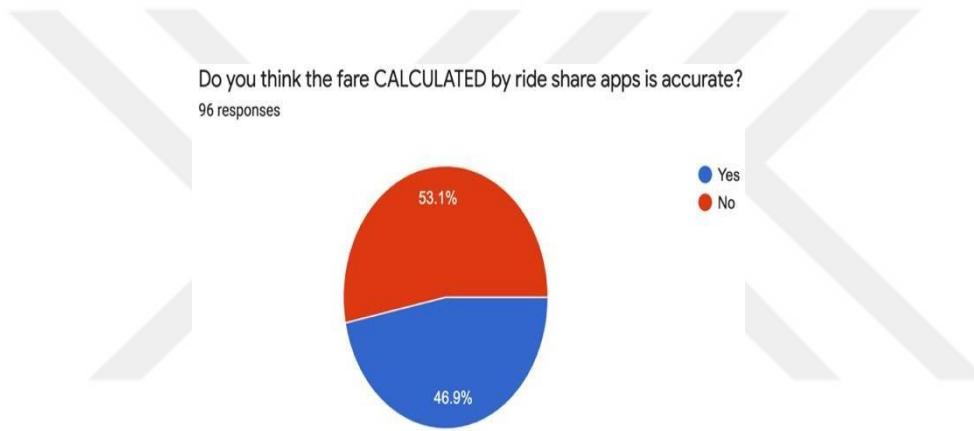


Figure 34 Responses for question 21

Figure 34 shows that 96 of 100 respondents answered this question and 53.1% think the system doesn't calculate fare accurately while 46.9% think the fare calculated is accurate. This is important for companies to work on this AI systems to produce a more accurate fare for both the passenger and the driver.



## **V. CONCLUSION**

The research goals of this master's thesis were to find answers to key issues that would lead to more effective use of AI-driven marketing strategies that would assist firms improve their marketing functions.

The thesis' first section included marketing, the internet, digital marketing, and artificial intelligence. Many authors studied these themes separately, but few attempted to explain how they became intertwined or complementary through time. Our research has the potential to make a positive addition to knowledge in this way.

The goal of AI-driven marketing is to engage clients in an online environment so that sales can be made. The long-term goal is to manage profitable partnerships for longer periods of time while complete the original sales. For the most part, in the post-pandemic era, digital channels have taken precedence over traditional ones. As a result, the thesis's key research topic emerged: How should digital marketing strategies be implemented efficiently?

We began by establishing the key concepts, strategies, and performance criteria for achieving this effectively. We've laid out a clear breakdown of the key elements that marketers should consider when developing artificial intelligence- based marketing strategy.

We saw how AI-driven digital marketing services such as AI-generated content, cookies, programmatic media buying, chatbots, and more may assist organizations. According to Vogus (2011), large corporations view social media sites as strategic instruments, and some organizations hire personnel to manage their social media websites. According to Mangold and Faulds (2009), social media should be considered an important aspect of an organization's overall marketing plan and should not be overlooked.

In response to our second research question, how effective is an AI-enabled environment in building a strong brand in consumers' minds? Visibility, Recognition, and Reach are all advantages of AI-driven marketing. A brand will be seen by a

greater audience on the internet than in a physical store because the internet has a global reach. Because a larger number of individuals can access the brand, product or service awareness will be higher than it would be if traditional techniques of generating brand awareness were used.

Brand recognition is directly proportional to the number of times a brand is shown. Brand recognition improves when a company is present across numerous digital platforms.

The greater the likelihood of becoming the preferred brand by potential customers, the stronger the brand recognition. At the end of the day, all brand strategists want to develop brands that are remembered.

Furthermore, because research on artificial intelligence in marketing in terms of brand building is still limited, this study contributes to expanding the study of this field of research, which appears to be underserved.

In the third question; In what ways is outstanding customer value created while using AI driven marketing? We've seen how providing value to customers is vital since it may boost a company's reputation, profits, and long-term success. Customers' confidence and trust in your company's offers can be increased by providing valuable goods and services. Improving the buying process as seen, offering efficient customer support, educating customers, giving valuable material, creating a happy experience, and more are all ways that AI-driven marketing boosts customer value.

In regards to the last question; How can marketers create new customer needs, what value does AI-driven marketing add to this process. A need must first be identified before it can be fulfilled. Market research powered by artificial intelligence (AI) assists firms in listening to what matters most to customers. Conducting digital surveys, focus groups, polls, and case studies, among other things, can help with this. This form of research aids in determining what your clients require, when they require it, and why they require it. Algorithms can be used to research a customer's wishes, anxieties, objections, flaws, passions, wants, likes, and needs. This will assist the business device solutions in meeting the defined customer needs. All of this is now achievable thanks to AI-driven marketing, which is both successful and cost- efficient.

In terms of theoretical implications, this review identified four research issues as well as 15 AI implementations and applications in marketing. Researchers can use these as a starting point for their research into the influence of artificial intelligence on marketing functions in businesses. Regarding the approaches, marketers can assess which of these functions best meet their marketing objectives based on the definitions offered when considering their AI marketing functions. Furthermore, researchers in the AI marketing industry can use the fifteen highlighted issues to construct new hypotheses or uncover new research problems that need to be addressed in order to develop new studies. In addition, the current study has significant practical consequences for the sector.

AI-driven tactics are becoming increasingly popular among businesses nowadays. As a result, the most effective application of these tactics necessitates a thorough comprehension of all required processes. The findings of this study can be utilized to educate company specialists with the most important AI indicators and KPIs in the AI marketing ecosystem.

As a result, businesses can use the findings of this study as a springboard for developing new marketing tactics. To acquire useful information, businesses can explore applying any of the 15 identified uses of AI in marketing. Furthermore, companies can use the definitions and descriptions offered in this study to create reports and explain their contingency and plans, as well as to implement and measure the success of their digital initiatives.

## **A. Limitations of the Study.**

There were various biases examined before to the investigation, but it is important to note that the research findings also revealed several limitations. It's possible that the chosen sample isn't completely representative of the intended population. Some of the responders work in marketing departments that use artificial intelligence, while others work in traditional marketing departments. Because the respondents were unable to prepare in advance for the questions, the ratings may be subjective and not based on actual data (e.g. when asking the respondents if they have ever seen an advertisement on your social media for something they searched for on search engine like Google). Because some of the respondents knew the

interviewer personally, it's important to note that the social desirability bias could have resulted in more positive outcomes. There's also the issue of the researcher's lack of expertise in developing research topics.

## **B. Future Research**

The research could be expanded to include additional countries outside Kenya in the future. More organizations who have effectively adopted AI-driven marketing would be fascinating to investigate. I have a question for you: do you believe the fare determined by ride-sharing applications is accurate? Nearly half of those polled believe the price is incorrect. Because AI is still being tested in the real world, further research may be required to improve its functionality in order to avoid negative acceptance of the technology in the future. Given the conflicting responses to respondents' experiences with artificial intelligence in marketing, it will be intriguing to watch what marketing gurus deliver in the coming decade. -Customers do not want to hear the words ‘disruption’ and ‘transformative’. They want to hear ‘stability’, ‘reliability’ and ‘proven’.<sup>11</sup> Contrary to that, others are of the opinion that moves ahead need to be made if companies do not want to be left behind (World Economic Forum, 2017).

If the end learning ground is regarded to be quotes from this research, it may be argued that the AI Marketing age is swiftly approaching, and it will have far-reaching consequences. As artificial intelligence (AI) develops in sophistication and application in marketing, marketers' ability to properly integrate and manage AI solutions will continue to become increasingly important. In an AI-powered workplace, a person's awareness of their role in developing and sharing value is critical not only to their own success, but also to the success of their firm.(Cannella, 2019)

Notwithstanding the significant challenges that must be overcome before mainstream use, artificial intelligence offers great advantages to advertisers, customers, and community at large by allowing them to develop and deliver value at scale to the right people at the right time in the right way. This competence can be achieved by combining improved emotional capacities in employees, such as compassion and imagination, with a continued focus on data-driven practices within

businesses.(Cannella, 2019)

As artificial intelligence automates routine jobs, advertisers may focus more on activities that add value to customers' lives, increase workplace satisfaction, and encourage creative thinking for the greater good.

The artificial intelligence Marketing era ushers in substantial alterations to the way advertisers communicate with clients, as well as the methods and tools they employ to achieve their objectives. Artificial intelligence, like the introduction of computers, has the ability to change the face of marketing forever.

Artificial Intelligence has had a long journey since its inception, and it is already influencing the future of marketing. It is the responsibility of each company to implement this technology. But one thing is certain: AI is the way of the future. (Grimms, 2022) Using AI-powered marketing and technologies is necessary if a company wants to run a successful online business in the coming years. The study continues.



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## Artificial Intelligence in Marketing (Personal Experience)

This survey is part of a broad study on Artificial Intelligence. In this case, the study is focusing on how AI is used by organizations as part of their marketing strategy. These sometimes have direct impact on people's day to day lives. The data collected will only be used for scientific purposes.

Your personal data is NOT collected.

The main research is led by Assist. Prof. Dr. SEZER AYAZ and Emmanuel Lumumba.

### 1. How would you classify yourself?

*Mark only one oval.*

- CEO/Business owner
- Professional / Consultant
- Employee
- Unemployed
- Student
- Other: \_\_\_\_\_

### 2. Which SEARCH ENGINE do you frequently use?(Select all that apply)

*Tick all that apply.*

- Google
- Yahoo
- Bing
- Yandex
- DuckDuckGo
- AOL
- Yippy
- Other: \_\_\_\_\_























## **RESUME**

**Name Surname** : Emmanuel Mumali LUMUMBA

### **EDUCATION :**

**Bachelor** : 2015, Moi University, Bachelor's in Business Administration, Marketing

**Masters** : 2022, Istanbul Aydin University, Masters in Business Administration

### **PROFESSIONAL EXPERIENCE AND AWARDS:**

#### **EXPERIENCE SINCE 2013**

##### **SEO/PPC Expert - Founder**

Inspired Thinking. (Digital Marketing Firm) (2020 - Present)

Business development, SEO, PPC, Digital marketing strategy.

##### **Digital Marketing Director**

Techchimp Solutions. (Digital Marketing & Software company) (2017 - Present)

Overseeing digital department. Develop, implement, track and optimize the digital marketing strategies for all clients.

##### **Digital Marketing Executive**

Create A Tee Ltd (Ecommerce) (2016 - 2017)

Responsible for developing, executing and managing digital marketing strategies.

##### **Marketing Executive**

Woodhouse Ltd (2014 - 2016)

Responsible for generating business leads and closing sales.

##### **Marketing Executive**

Advance Public Relations And Marketing Company (2013 - 2014)

Responsible for client account Management (SADOLIN paints), Maintaining company Internet presence and Customer Relationship Management.

### **CERTIFICATIONS & AWARDS**

**Google** – Ads, Campaign, Display, Search, Analytics Certified

