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Artificial Intelligence is shaping Digital Marketing

Dimitra Kirstavridou

INTERNATIONAL HELLENIC UNIVERSITY

SCHOOL OF SCIENCE AND TECHNOLOGY

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Student Name: Dimitra Kirstavridou

SID: 232604243542

Supervisor: Berberidis Christos & Kapantai Eleni

I hereby declare that the work submitted is mine and that where I have made use of another's work, I have attributed the source(s) according to the Regulations set in the Student's Handbook.

January 2021

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Abstract

This dissertation was written as part of the MSc in e-Business and Digital Marketing at the International Hellenic University.

Due to technological development, digital marketing is transforming and taking different shapes all the time. The goal of this literature review is to recognize the uses, the benefits and the risks of artificial intelligence on digital marketing and how the companies can make it happen.

The research methodology demonstrates the writing process of the dissertation as well as the methods used to collect the data. The data has been analyzed through qualitative analysis by using desktop analysis. Written and visual sources such as scientific papers, books, commercial texts, and video content were included.

The theoretical framework for this dissertation was built around the understanding of the digital marketing and its methods and then of artificial intelligence and its approaches. Google Ads, content marketing, social media marketing, e-mail marketing, and search engine marketing have also been studied to fully understand the way that digital marketing is executed without the presence of artificial intelligence. Machine learning, problem solving, knowledge representation, deep learning, natural language processing and neural network have been identified as some of the most important artificial intelligence's core characteristics.

Moreover, a very important part of this thesis is the uses that artificial intelligence is taking in digital marketing to take it to the next level. Of course, all these are bringing not only benefits but also challenges, which are being presented.

Keywords: Artificial intelligence, machine learning, digital marketing, algorithm, data

Dimitra Kirstavridou

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1. Introduction

 The aim of this first chapter is to familiarize the readers about the definitions and the connections of Artificial Intelligence and Digital Marketing. Also, it is referred to the benefits, the limitations and the generally impact that artificial intelligence has on Digital Marketing,

1.1. Background of AI

Lately, we hear a lot about the definition 'Artificial Intelligence', but do you know what exactly it is? Well, artificial intelligence is the intelligence demonstrated by machines and that is why you may also hear it as machine intelligence. (Wikipedia-History of AI, 2020) So, unlike natural intelligence, which is performed by humans and animals, artificial intelligence is performed by machines, which are acting "cognitive" functions that humans associate with their mind, like "learning" and "problem solving". (Wikipedia- History of AI, 2020)

Now it's time to talk about when it was the first time artificial intelligence was appeared. (Scrapbook Index, 2018) In 1956 in the campus of Dartmouth College it was taken place a workshop, which lasted around two months. There were approximately ten participants, who were mathematicians and were doing all together a brainstorming and studying about the artificial intelligence. Although, in 1950 Alan Turing in his paper "Computing Machinery and Intelligence", posed for the very first time the question if the machines can actually think! More specifically, he created the Turing test examined if a computer could behave like a human being and not directly if it can behave intelligently. (Wikipedia-Alan Turing, 2019) And that is the part where the test might not bring successful results for these two reasons. Firstly, because some intelligent behavior is inhuman and secondly because also some human behavior is unintelligent.
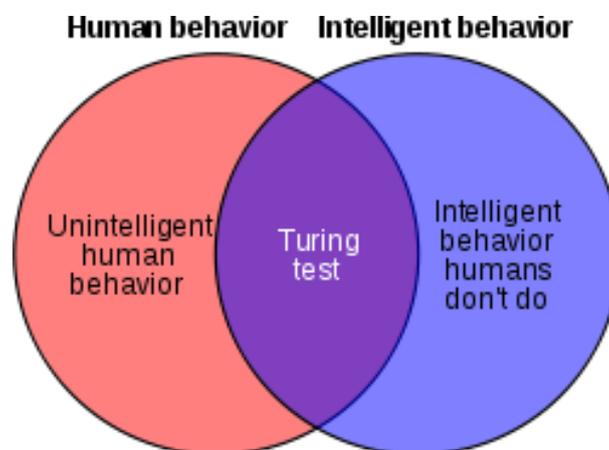

(Wikipedia-Alan Turing, 2019)

Coming to our century, especially in the first decades of 21st century, the interest and they investments about Artificial intelligence were extremely increased. That happened because of the successful apply of machine learning to many different problems in academia and other industry areas. (Wiki - Turing Test, 2018)

1.2. Background of Digital Marketing

Now it is time to talk also about digital marketing and what exactly it is. So, digital marketing is the marketing aspect that uses internet through desktop and mobile devices. This is happening via search engines, social media, e-mails and many other different channels in order to reach consumers.

If we look back to know when digital marketing made its appearance, we will realize that its existence is inextricably linked to the existence and evolution of technology. More particularly, the term digital marketing was mentioned in the 1990s when the Archie search engine was founded by Alan Emtage, which gave access to human to find specific files. (Wikipedia-Digital marketing, 2020) Also, a very important factor in marketing technology was the Customer relationship management (CRM) applications.

After internet was invented people begun to use eCRM software and they were able to own huge online customer data. (Investopedia-Digital Marketing, 2020) All the above things contributed to the creation of the first clickable banner ad in 1994 by AT&T Inc., which is an American telecommunications company. The campaign was named "You Will" and from all the people who watched the ad, the 44% clicked it. (Financial Times-Definition of digital marketing, 2019)
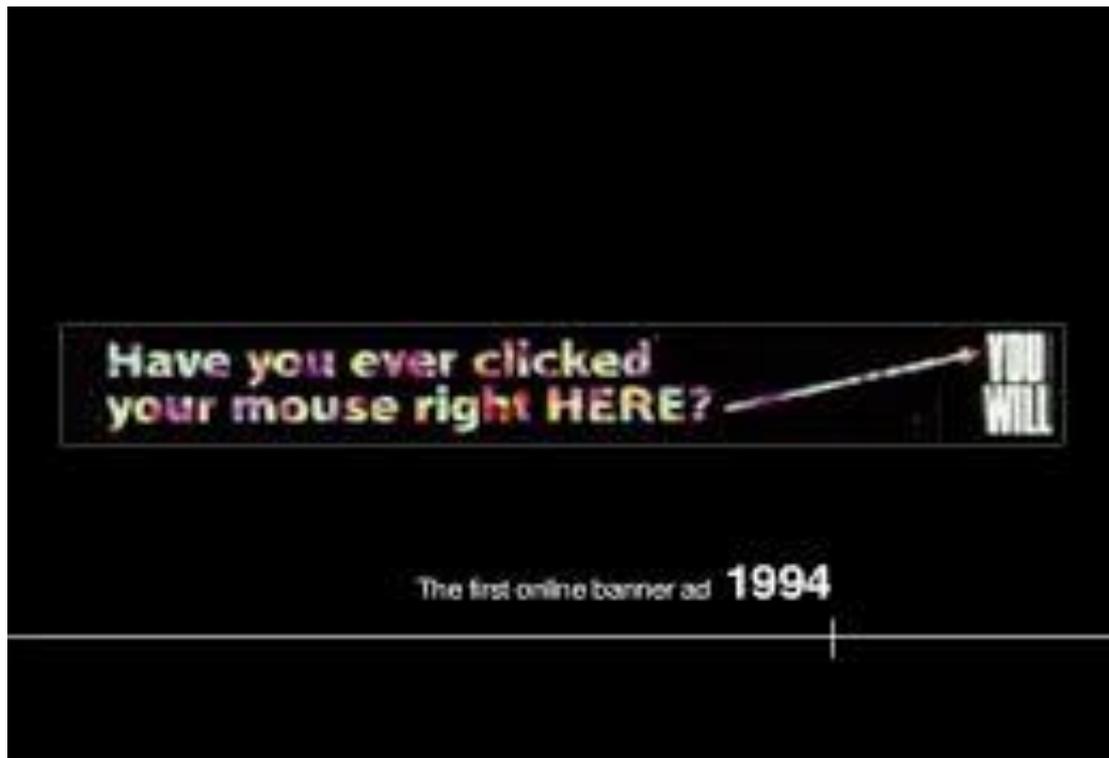
(DFP Expert - Brief History Of Online Advertising, 2015)

As the years went by, from 2000 onwards marketing evolved and digital networks have been increasingly integrated into marketing plans and daily life, and digital marketing campaigns have become widespread as individuals increasingly use digital devices instead of visiting physical stores, using combinations of search engine optimization (SEO), search engine marketing (American Marketing Association-The Four Faces of Digital Marketing, 2020) (SEM), content marketing, influencer marketing, content automation , campaign marketing, data-driven marketing, e-commerce marketing, social media marketing, social media optimization, e-mail direct marketing, display advertising, e–books, and optical disks and games have become commonplace. (Wikipedia - Digital marketing History, 2020) Non-Internet platforms that include digital media such as television, cell phones (SMS and MMS), callback, and on-hold mobile ring tones are protected by digital marketing.

In the 2000s and 2010s, as the proliferation of devices capable of accessing digital media led to sudden growth, digital marketing became more sophisticated. Statistics produced in 2012 and 2013 have shown that digital marketing continues to expand. Consumers became highly dependent on digital electronics in everyday life with the advent of social media in the 2000s, such as LinkedIn, Facebook, YouTube and Twitter etc. Consequently, they were asking a seamless user interface through multiple channels for product knowledge search. The shift in client behavior has increased the diversification of marketing technologies. (web.org - Making digital marketing work , 2020)

1.3. The impact of Artificial intelligence in Digital Marketing

Artificial intelligence is becoming more and more associated with digital marketing as technology is evolving and of course that has a very positive and helpful impact to the marketers and generally to the targeting and performance of digital marketing campaigns. To begin with, there is no question that Artificial intelligence and machine learning would affect the digital marketing industry in each possible way since they are reshaping the digital marketing 'area' we knew before their existence. (Geeks Chip - Impact of Artificial Intelligence on Digital Marketing, 2020)

So, as it's obvious there is no doubt about 'if' artificial intelligence is reshaping and has an impact on digital marketing industry, but the real question is 'how' is this happening. Artificial intelligence has an immense opportunity in the field of digital marketing and now I am going to analyze you how it impacts digital marketing. (Relevane - Impact of Digital Marketing, 2020)

➤ Firstly, one very important impact of artificial intelligence in digital marketing is the **predictive marketing**, which can make the life of digital marketers simpler and easier as considering the decision-making process. Predictive marketing is a strategy that describes the best marketing tactics to be used in a specific situation. (The Startup - How is Artificial Intelligence Revolutionizing Digital Marketing?, 2020) This is happening by the Artificial intelligence Data Analytics Assistant to figure out which marketing campaigns and activities are most likely to succeed. (Shift - The Impact That Artificial Intelligence Will Have on Digital Marketing, 2020) Although predictive marketing isn't a brand-new practice, by applying artificial intelligence it would be more open and manageable. In practice, that means tasks, which normally take too long from humans to extract and analyze data, now with the help of artificial intelligence are taking a fraction of the time. (inc.42 - How Digital Marketers Are Leveraging AI Tools And Automation In Advertising, 2020) The impact that companies will have if they use predictive marketing to make data-driven decisions is having high valuable insights of their customers. Just to give you an example, they will know how customers will make purchases, which will give them many benefits, such as effective use of marketing budgets! Also, when we talk about predictive marketing, we cannot let out predictive analytics since it's a big part of predictive marketing. Predictive analytics, when combined with analytical resources, enables companies to classify their future customers or possible reactions by using customized data collected over time. (Magnificent - Intelligent conversions: Understanding the Impact of AI in Digital Marketing, 2019) As human beings, many of our choices are not founded on logic. Emotions, confidence, empathy, communication skills, inner satisfaction and community all play a crucial role in persuading us to purchase a particular product or make a specific decision. Artificial intelligence algorithms are rapidly incorporating the ability to recognize these primary emotions and deliver insights that make prospecting more efficient for

potential buyers. For example, you have sales data for thousands of customers and the various products they have purchased. Without the aid of artificial intelligence algorithms, all you'll see is a bunch of complex data, rows after rows, product codes or names that will not only lead you everywhere but are also very complex to understand.

➢ Another worth telling impact is **personalization**. There is no denying that lately, digital marketing is turning more and more in personalization and it's changing from the mass engagement approach it used to have the past years. The introduction of artificial intelligence played a decisive role in this and consequently has a very important impact on digital marketing. This ensures that the tools for profiling and data analysis adapt the content in real time, which helps to optimize every single conversion. It allows for more comprehensive and refined personalization, powered by Machine Learning. And this is the most critical field where artificial intelligence comes in. Smooth user interface is what keeps the viewer moving. Intelligent algorithms are used to capture even a single customer's report through searches, consumer profile, purchase pattern, etc. All websites are now offering a better engagement chat interface that will certainly add character of personalization. In some cases, customers are very difficult to handle. Yet, unlike people, bots never lose patience. They are available 24 hours to manage several requests at the same time, resulting in tangible results. Nevertheless, a chatbot must be able to comprehend the complexities of a language in order to offer a relaxed experience of compelling answers. So, personalization is able to be used on multiple platforms from Facebook to Email and all in between and would certainly a positive impact on digital marketing by succeeding results with higher conversion rates. (Unidrim - Impacts of Artificial Intelligence on Digital Marketing, 2020)

➢ Furthermore, we couldn't overlook the fact that artificial intelligence increases the **return on investment (ROI).** Specifically, artificial intelligence through Machine learning helps people understand current trends and patterns of behavior. The marketing and artificial intelligence intersection ensures that consumers obtain the right triggers at the right moment. They will automatically send custom messages to each user, which is the next step of purchase. According to research, the population of the world posts 3.25 billion images per day. This huge number of photos can be leveraged by artificial intelligence to identify customer behavior, purchasing habits and needs. With these technologies, payment can be made quicker than it has ever been. It could also resolve security issues related to online payments. Machine learning allows us to gather ample data from user experience and adds improved database schema to the inventory. Depending on the audience's interest, it offers a better decision-making algorithm that brings out a high Roi. (aithirity - Using AI And Personalization To Provide A Complete Brand Experience, 2019)

➢ The last very important impact of artificial intelligence on digital marketing that I will mention is the **dynamic pricing**, which brings much bigger profits to the companies. To be more specific, dynamic pricing, is known as rising

pricing, demand pricing, real-time pricing or algorithmic pricing, is where the price is adjustable based on demand, supply, competitive price, subsidiary commodity prices. Price can also vary from customer to customer based on their buying habits. Dynamic pricing allows manufacturers to be more responsive and adjusts prices in order to be more personalized. Dynamic pricing uses algorithms to detect the ideal pricing for these conditions, maximize sales results, and reduce the guesswork for all this pricing chaos. With artificial intelligence, you can understand what is happening much quicker, and you can change the price whenever it's necessary. It is a strategy that businesses use to balance supply and demand in the existing economy. (Geeks chip - Impact of Artificial Intelligence on Digital Marketing, 2019) The easiest method is to find a balance between price and availability that provides the most revenue. It aims to give consumers different pricing based on external variables and their purchase characteristics. Other approaches include customer differentiation (which it might be considered unethical) and product differentiation, for example a hotel room with a great view or one with a view to the street.

(Alerin - Leveraging AI for dynamic pricing, 2020)

2. Scope and Methodology

In the second chapter is presented the method, which is been used in this thesis and of course the main goal that this research was done.

2.1. Scope

The main aim of this literature review is to encourage businesses to increase the use of artificial intelligence in their digital marketing strategies. By reading this study and understanding the basic concepts, you may begin to ask the right questions which may lead to the effective implementation of artificial intelligence in marketing processes and the collection of relevant data. By researching artificial intelligence and Artificial Intelligence software solutions, applications and digital marketing channels, it is possible to obtain a deeper understanding of the options for the business to begin this phase of automation and technology to maximize the use of resources and develop personalized content for marketing customers and stay competitive in today's evolving markets. Moreover, another objective of this thesis is to understand what artificial intelligence and digital marketing is and how these two can be combined and help you bring better and easier results. Another goal of this thesis is to examine what are the ways in which artificial intelligence is embellishing digital marketing as well as to discuss not only the benefits but also the possible risks and downfalls of artificial intelligence in digital marketing. The outcome of this research will encourage marketing specialists to identify what are the appropriate areas for implementing artificial intelligence in digital marketing, what to avoid, and then how to make the most use of artificial intelligence.

2.2. Research Questions

So, after making crystal clear the scope of this literature review, now it is time to present you all the research questions, which will be answered in this research. The following are the research questions (RQ) for this dissertation:

RQ 1. What is the impact of Artificial intelligence and machine learning in marketing?
RQ 2. What are the uses of Artificial intelligence in digital marketing?
RQ 3. What are the benefits of Artificial intelligence in digital marketing?
RQ 4. What are the risks of Artificial intelligence in digital marketing?
RQ 5. Which are the methods that are used in digital marketing?
RQ 6. Which are the artificial intelligence technologies?
RQ 7. What is the future of Artificial intelligence in digital marketing?

Research Questions	Theoretical Framework	Research Methods	Results chapters
What is the impact of Artificial intelligence and machine learning in marketing?	Insights from marketing experts & tech experts	Desktop research	1
What are the uses of Artificial intelligence in digital marketing?	Insights from marketing experts & tech experts	Desktop research	5
What are the benefits of Artificial intelligence in digital marketing?	Insights from marketing experts & tech experts	Desktop research	5
What are the risks of Artificial intelligence in digital marketing?	Insights from marketing & tech experts	Desktop research	5
Which are the methods that are used in digital marketing?	Insights from marketing experts	Desktop research	3
Which are the artificial intelligence technologies?	Artificial intelligence, big data, machine learning, deep learning, neural networks	Desktop research	4
What is the future of Artificial intelligence in digital marketing?	Insights from marketing & tech experts	Desktop research	6

2.3. Research Methodology and Limitations

The methodology, which it is used for this thesis is literature review. I chose this because it is a research method that I would be able to analyze collective evidence in a specific field of study. It may also help me to have an overview of this field in which research is complex and interdisciplinary. In addition, a literature review is an excellent way to synthesize research findings to show evidence on a meta-level basis and to recognize areas in which further research is required, which is a critical component of developing theoretical structures and constructing conceptual models. A literature review can be the best methodological tool to provide answers to a variety of research questions. For example, reviews are useful if a researcher needs to test theory or facts in a particular field, or to investigate the validity or accuracy from a certain theory or of conflicting theories.

This method may be narrow, such as examining the impact and relationship between artificial intelligence and digital marketing or it may be wider, such as examining collective evidence in the field of digital marketing and artificial intelligence. In addition, literature reviews are valuable for the purpose of presenting a summary of a

particular topic or study issue. Usually, this form of literature review is performed to determine the state of information on a specific issue. Literature reviews could also be valuable if the goal is to engage in theoretical growth. In such cases, a literature review provides the foundation for the creation of a new conceptual model or theory and can be useful in mapping the development of digital marketing and artificial intelligence study over time.

Moreover, there were some limitation while conducting this thesis. Since the field of artificial intelligence is very broad, quite new as well as very technical, so this thesis will focus only on artificial intelligence at a theoretical level and will discuss the use of artificial intelligence from a marketing perspective due to the lack of my technical background. This indicates that not enough academic research has been done on the subject, and if it is, it is already too old and no longer representative of the present state, or it is too narrowly based on another field of artificial intelligence. In addition, a variety of knowledge is based on experience, common sense and the correlation of different sources made by me and is therefore difficult to cite. The technical requirements and the development of Artificial intelligence algorithms, the set of rules by which Artificial intelligence makes decisions, will not be addressed in depth in this thesis. Examples of the use of Artificial Intelligence in fields apart from digital marketing would be briefly covered, however, in order to illustrate the existing strengths and implementations of technology to give the reader a better understanding of what Artificial Intelligence is and what it could be used for in the present and in the future. While opening key Artificial intelligence ideas, there will also be space for creative thinking on how Artificial intelligence can be used to resolve marketing related challenges that a business might be facing. In view of the rapidly evolving technology, the results of this study will undoubtedly be out of date within a short amount of time, and this thesis should be read, keeping this one in mind.

I set the deadline of November 2020 to stop collecting news and updates of innovations in the area, as it keeps growing every day, and without this limitation, this thesis may never end. Nevertheless, the principles of artificial intelligence and digital marketing will still remain, even as new technical developments will arise and existing technologies will be transformed. This inevitably does influence this thesis, as all new developments could not and would not be published due to the timeline and the intent of this thesis is not to present anything relevant to Artificial Intelligence for business.

3. Digital Marketing Methods

In this chapter, it is going to be presented the most common and effective methods of digital marketing. So, after analyzing in the first chapter the definition and the most important parts of its background, now I will be more specific with the ways it is been used from the most companies.

3.1. Social Media Marketing

Social Media Marketing (SMM) is the use of social media websites and social networks to advertise the goods and services of a business. Social media offers businesses with a means of attracting new consumers, engaging current customers and supporting their core values, vision or tone. Most social networks have developed-in data analytics tools that allow companies to monitor the development, effectiveness and interaction of ad campaigns. Companies target a wide range of customers via social media marketing, including existing and potential customers, present and prospective staff, writers, bloggers and the public in general. (Investopedia - Social Media Marketing (SMM) Defined, 2019) At a strategic level, social media marketing involves the management of a marketing campaign, governance, reach and creation of a company's preferred social media "community" and "sound.". (Hubspot - The Who, What, Why, & How of Digital Marketing, 2019)

Many social media platforms allow users to provide specific geographic, demographic and private information that will allow marketers to customize their content to what's really likely to interact with users. Since Internet users could be deeper divided than most other traditional marketing platforms, companies will be able to ensure that their focus their attention on the audience they would like to address. (WordStream - Social Media Marketing for Businesses, 2020) The most common channels they are used in social media marketing, at least in Greece, include:

- ➢ Facebook.
- ➢ Twitter.
- ➢ LinkedIn.
- ➢ Instagram.
- ➢ Snapchat.
- ➢ Pinterest.

Every channel is being used for succeeding different goals. That's happening mainly because of the audience that is included in each social media platform. For instance, because in Facebook is being used from older people than Instagram, a politic campaign will be preferred to run in Facebook. Moreover, there is a big variety of goals that can be targeted and be benefited. (Wikipedia - Social media marketing, 2020) The most important and commonly used from the marketers, (of course it also depends on the sector of each business and their goals) are traffic, engagement, awareness and conversions. It is worth telling to say that after the last updates that Facebook and Instagram released about e-commerce for the marketers, they are able to set up their online store into these social media platforms and the customer can do the whole purchase there. Moreover, mostly the B2B companies run social media campaigns for lead generation in order to get more clients. (Science Direct - Elements of strategic social media marketing: A holistic framework, 2017)

The following image has captured the most popular social platforms for 2020, with the Facebook being the most used from 2,48 billion active users and the Snapchat the less commonly used with 294 million active users.
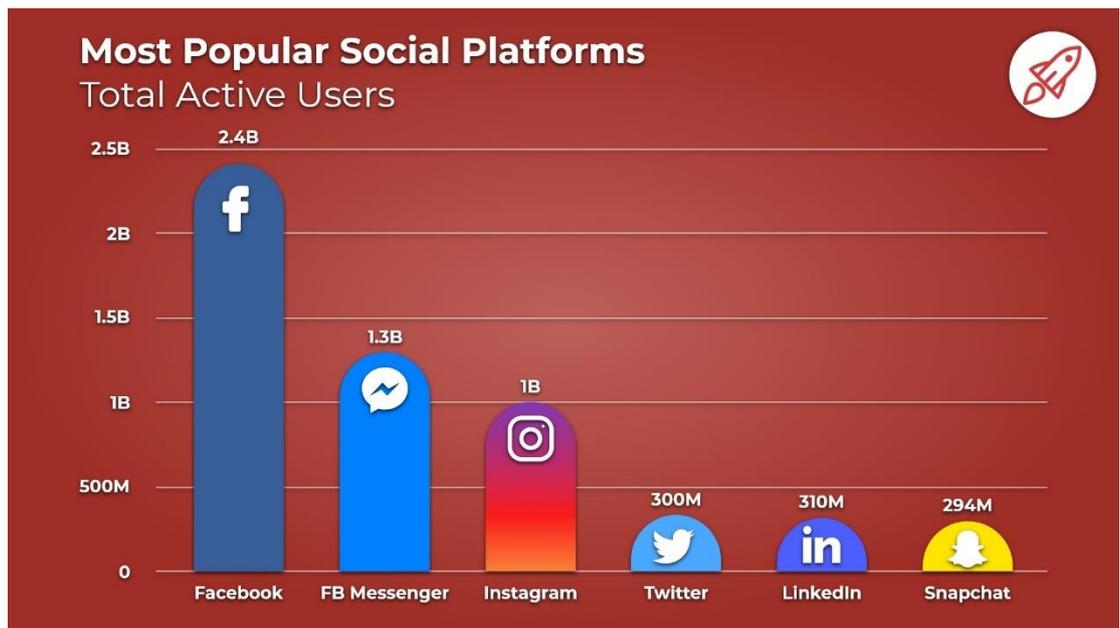
(Broadband Search - Key internet Statistics to know, 2020)

3.2. Google Ads

Another digital marketing method is Google Ads, which previously was known as Google AdWords. They were firstly introduced to people in 2000 and after some years, Google launched the rebranding of Google AdWords as Google Ads on July 24, 2018. (Wikipedia - Google Ads, 2020)

(Wikipedia - Google Ads, 2020)

Google Ads is a digital advertising channel created by Google, where marketers deliver short commercials, service offers, price promotions as well as videos to internet users. Ads can be placed in search engine results such as Google Search (Google Search Network) and also on non-search websites, mobile apps, and videos (Google Display Network). (Tutorial Point - Digital Marketing - Google Adwords, 2017) Services are delivered in a pay-per -click (PPC) pricing system. Pay-per -click (PPC) is a web marketing method which is being used to attract traffic to websites where the marketer pays the Google when the ad is clicked by the customers. When a user searches in Google, google ads conducts an auction to decide which search ads are shown on the search engine results page as well as the location of the ad. (Google Support - Google AdWords is now Google Ads, 2018) Thus, the expense of a google ad promotion based on a range of variables, such as the maximum amount that a marketer is willing to spend per click, the keywords are offered, the relevance and frequency of ads and clicks and of course it's always also a matter of competition between the field of companies. Here, you can take a look of how a search ad is looking like. (Google Ads - Creating my first Ad, 2018)

Διαφήμιση · www.cobiro.com/googleads/signup ▾

Sign Up For Free - Google Ads

Create online ads to reach customers that are interested in the products you offer. Create a free website and pick and choose from a variety of marketing applications. Creation of ads. Online marketing platform. Marketing plan. Advertisment creator. Grow your business.

Google Search
Get on top of the search results.
Google Search with Cobiro.

Website Builder
Build a modern website for free
It's easy and requires no coding

Google Ads Shopping
Be present in the Shopping Feed.
Increase website traffic.

Company
We're made to make you grow.
We provide you with marketing tools

The Google Ads framework is based, in part, on cookies and in part on keywords decided by marketers. Google provides these features to put a copy of ads on pages where they think it would be relevant. Advertisements can be distributed locally, nationally or globally.

Lastly, one thing that is worth to talk about is the last restriction on ad content that google announced few months ago. Specifically, in March 2020, at the start of the Coronavirus pandemic, Google banned all face mask keywords from being available for ads as part of the Google policy to discourage businesses from seeking to profit on the pandemic. (Google - Coronavirus (COVID-19) Resources and Updates, 2020)

3.3. E-mail Marketing

Email marketing is the act of delivering a marketing messages, mainly to a set of people, through e-mail. In its broadest meaning, any email sent to a prospective or present customer may be called email marketing. It contains utilizing email to send ads, ask business, or offer sales or donations. (Wikipedia - E-mail Marketing History, 2019) Email marketing campaigns usually intend to reach one or more of the three key purposes of bringing new clients, promoting business with valid customers, increasing brand loyalty and confidence, etc.

It is important to keep in mind that email marketing has some messaging choices. A single email can reflect direct marketing or contain related content to the organization. The first is regarded as a marketing campaign and the second as a newsletter. The idea is never meant to be completely autonomous, but inevitably related to the online business marketing purposes. Besides the newsletters and promotional emails already noted, there are catalogs, digital invitations, reminders and correspondence messages. Despite the option that email marketing brings to companies, it could not be used carelessly without even any distinguished strategy. Targeting and developing an email marketing campaign could be formulated months in advance, with a lot thought and awareness of the desires of the audience. In the following picture is captured the whole history of e-mail marketing, which began is 1971 and it is still continuing until today, and the future is even more promising because of every day grow it is showing to business digital marketing. (Business News Daily - How GDPR Is Affecting Email Marketing, 2020)
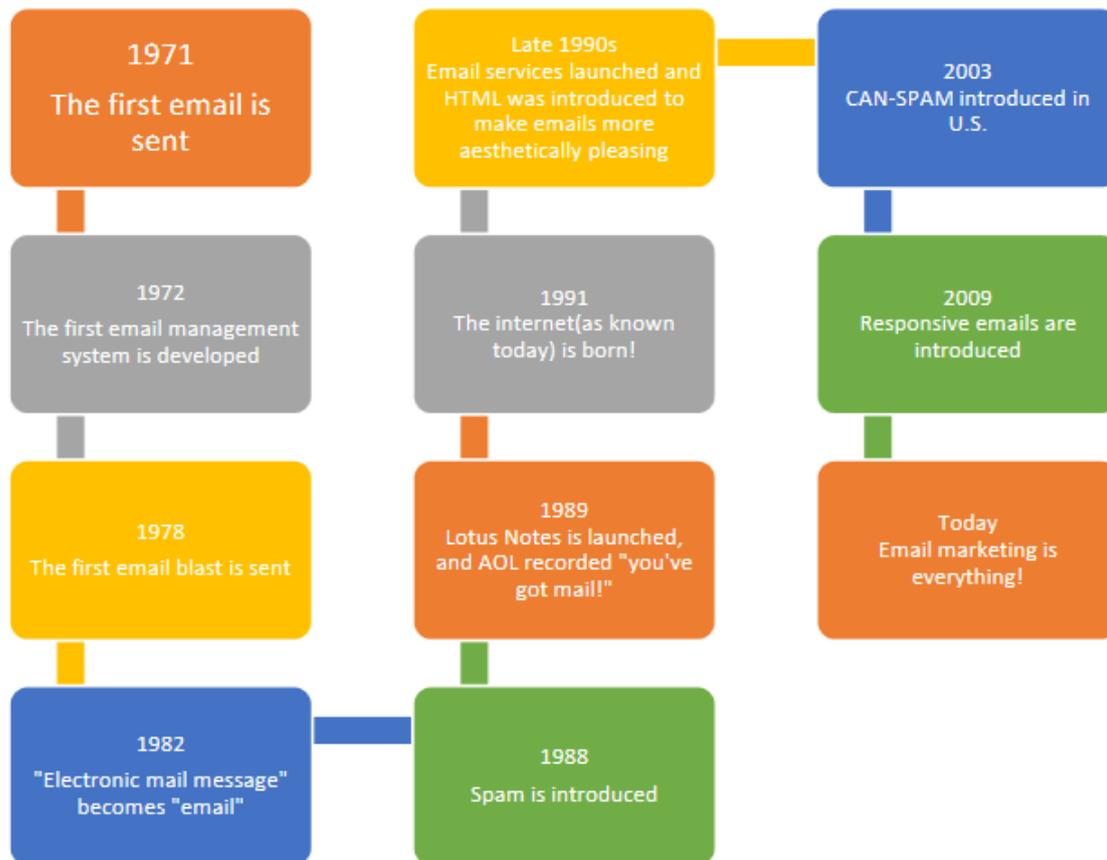
(Fractional CMO - The Importance of Email Marketing for Manufacturers, 2019)

It has historically been difficult to estimate the performance of e mail marketing since market segments could not be clearly defined. Email marketing has the advantage of enabling marketers to target returns on investment and monitor and evaluate efficiency. It allows marketers to see feedback from users in real time as well as to monitor how successful their campaign is in attempting to achieve market penetration, exposing the scope of the communication network. At the same time, nevertheless, it also makes it nearly impossible to capture the more personal nature of such marketing campaigns, like television ads.

Something that changed all the procedure of email marketing was the GDPR law. After this law, email marketing campaigns have had to adapt to comply with the EU's data privacy law and the marketers need careful thought before setting up an email marketing campaign. In short, e-mail marketing under GDPR assumes that, as an e-mail marketer, you ought to obtain your free, relevant, informed and unequivocal consent. You need to follow new practices in order to achieve compliance:

➢ New user opt-in permit rules
➢ Proof of consent storage systems
➢ A process through which customers can ask to delete their personal information (Mailjet - GDPR and Email Marketing, 2020)

3.4. Content Marketing

Content marketing is a method of marketing aimed at producing, publishing and delivering online content to a specific audience. It is mostly used by companies to:
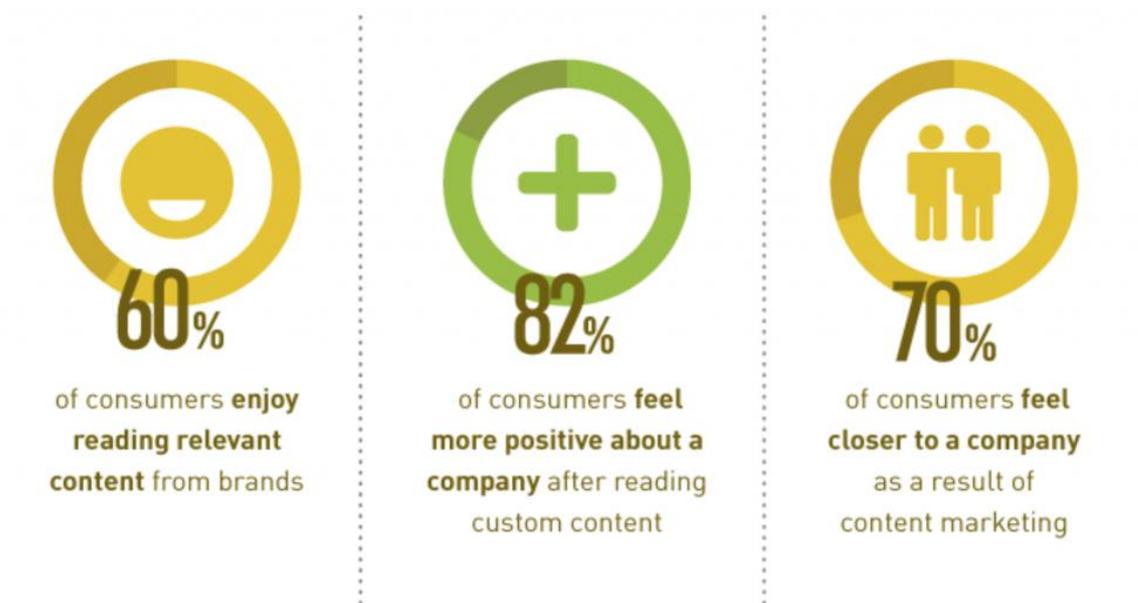
⇨ gain attention and attracting leads
⇨ bring traffic to website
⇨ enlarge the customer base
⇨ generate or scale up on-line sales
⇨ raise up brand awareness
⇨ engage an online target audience

Content marketing targets potential and turns potential into consumers through the production and distribution of useful free content. (Wikipedia - Content Marketing, 2020) marketing helps marketers develop sustainable customer loyalty, offers useful knowledge to customers and generates a desire to buy goods from the business in the future. (ResearchGate - The Art of Feedback: An Interpersonal Transaction) This fairly new method of marketing does not include direct sales. Instead, it establishes confidence and deep relationships with the viewer and brings even better results which last longer and this method could also be called inbound marketing. (Rebecca Lieb. Content Marketing: Think Like a Publisher - How to Use Content to Market Online and in Social Media, 2011) It acts as an effective communicator among the business and the consumer, who aims never to give up and deliver more valuable content in order to be able to influence the behavior of the customer. Once the communication circle is built, it is simpler to provide information, to encourage new ways of thinking, or just to motivate, as their focus has already been earned. Digital marketing establishes the playing field for content to be published, above are among the most common content development channels for businesses:

✓ Articles
✓ Blogs
✓ Case studies
✓ Digital newsletters
✓ E-books
✓ E-mail
✓ Images
✓ Infographics
✓ Microsites
✓ Mobile content
✓ News releases
✓ PDFs
✓ Podcasts
✓ Research Slideshows
✓ Social media
✓ Traditional media
✓ Videos Webinars

✓ White papers

In this following picture are captured the four main reasons why companies worldwide are increasingly adopting content marketing into their marketing strategy and as you may see the results are much more than promising.


60% of consumers **enjoy reading relevant content** from brands

82% of consumers **feel more positive about a company** after reading custom content

70% of consumers **feel closer to a company** as a result of content marketing

(atelierish - Why is content marketing important learn the importance of content marketing for your business)

Concluding, appropriately described content marketing strategy is a way that it could improve a lot things and bring significant benefits to the company. (Forbes - What Is Content Marketing?, 2019) Some important of them are:

⇨ Enhances communication and encourages built customer relationships.
⇨ Raises up the traffic a company's website and turns visitors to customers, as I already have mentioned before.
⇨ Offer the business a certainty that product awareness is raised and also that the picture generated is considered to be accurate.
⇨ Reflects the company's clear intent by increasing its efficiency and effectiveness.
⇨ Guarantees the brand awareness on different social media platforms.
⇨ Let the consumer worry less about purchasing and buying more impulsively.

3.5. Search Engine Marketing

The last digital marketing method that it will be mentioned in this thesis is Search Engine Marketing (SEM). It is a type of digital marketing that is defined as a collection of methods to advertise the website of a company by increasing its placement on the search results pages. (Wikipedia - Search engine marketing, 2020) The search engine marketing strategies include two main concepts: search engine optimization (SEO) and paid search ads. SEO focuses on enhancing the website's position on unpaid organic search results by modifying the content and layout of the website. (Search Engine Land - The State of Search Engine Marketing) Paid search ads, on the other hand, generates company exposure and traffic by buying ads on search engines. Search engine marketing includes more paid search ads rather than search engine optimization, which includes more organic search engine result pages. (Search Engine Land - Does SEM = SEO + CPC Still Add Up?, 2018) With this picture you will make crystal clear in your mind the difference between them. More specifically, in the upside of this following picture are captured the paid results and in the downside are captured the organic results.
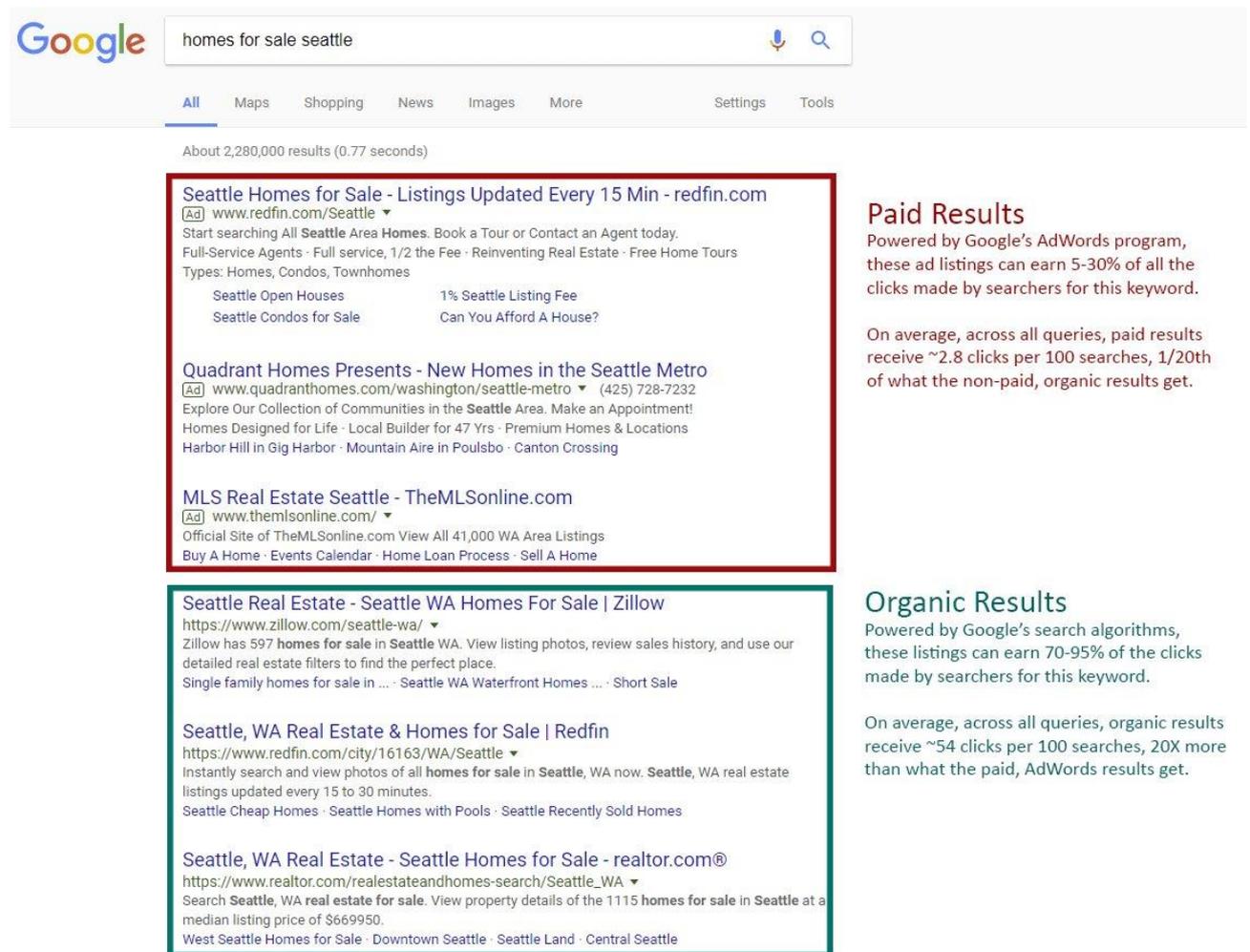
(The Startup - Organic SEO vs Google AdWords : Which one's right for you?)

There are two targeting models that are commonly used in paid search ads:

- Cost-per -thousand (CPM) ad is a common model. Usually, it calculates the overall expense of running an ad. For example, if it costs 10€ for an ad to show 1000 times, so a change of 10€ will be implemented per 1000 times the ad has appeared. (The Startup - Organic SEO vs Google AdWords : Which one's right for you?)
- Cost- per -click Advertisement (CPC), instead, only costs to marketers when their advertisements are clicked on search engine results pages despite the total amount of ads which are shown or displayed. Ad click-through costs are focused on advertisers offering competitive ad space promotions and are calculated by competing offers, keyword competition and specific search engine success metrics for marketers and landing page content. (Spotlight - Paid vs. Organic Search: The Story (Right Now), 2020)
  There are several explanations why marketers prefer a SEM strategy. Firstly, building a SEM profile is simple and can easily build up traffic depending on the level of competition. (Wikipedia - PageRanks, 2020) The customer who uses the search engine to find material appears to trust and rely on the links displayed on the search engine results. Nevertheless, a substantial amount of internet vendors does not purchase search engine optimization to achieve higher ranking search results, instead choose paid links. An increasing number of online marketers allow search engines, like Google, to crawl content on their websites and put targeted ads in them. (Surfsideppc - Search Engine Marketing (SEM): Complete Guide 2020, 2020) From the point of view of the online retailer, this is an expansion of the payment settlement and an added opportunity to participate in paid advertisement campaigns. And therefore, it is nearly impossible for marketers with small budgets to retain the highest rankings in an increasingly competitive search market. (scribendi - SEARCH ENGINE MARKETING VERSUS SEARCH ENGINE OPTIMIZATION: WHAT'S THE DIFFERENCE?)

4. Artificial Intelligence Technologies

The purpose of this chapter is to present the key concepts and fields of Artificial intelligence and to help the reader to become acquainted with technologies and the development of Artificial intelligence. One of the biggest blessings of the millennial generation is the data accumulated over the last few decades. Given the fact that people remain unaware of the opportunities that data might have given companies years earlier, data opens up the way businesses work on a day-to-day scale.

People are unable to process huge amounts of data like the computers can do. John McCarthy, who can be considered as the mentor of artificial intelligence, explains it as follows: "It is the science and engineering of making intelligent machines, especially intelligent computer programs."   Take advantage of the benefits of data can provide, personalize and offer impeccable customer support which is available 24/7.

The main purpose of research of artificial intelligence is to develop technology that enables computers and machines to work intelligently. The general problem of simulation of intelligence has been divided into many different sub-problems. These compose of unique features or functions that researchers consider an intelligent system to show. The key parts and fields are listed below. Of course, it's not all of them, I just captured the ones that have gained the most coverage.

4.1. Problem Solving

Early scientists have built algorithms that mimic step-by -step analysis which people do while solving puzzles or making logical assumptions. By the late 1980s and 1990s, Artificial intelligence research had designed strategies for dealing with unclear or missing knowledge, using probabilities and economics principles. (ResearchGate - Problem solving using artificial intelligence techniques, 2019) Such algorithms proved to be inadequate to solve big reasoning problems since they suffered a "combinatorial explosion": they were increasingly weaker while problems got stronger. Even people rarely use the step-by -step reasoning which early Artificial intelligence research could model. They handle almost all of their issues with simple, intuitive decisions. Based on the problem and its working domain, various kinds of problem-solving agent have been identified and used at the individual level with no apparent internal state with a problem-solving algorithm. (Geeks For Geeks - Problem Solving in Artificial Intelligence, 2020) The problem-solving agent works systematically by identifying problems as well as a number of solutions. So, we may assume that problem-solving is part of artificial intelligence that includes a range of techniques including a tree, B-tree, heuristic algorithms to solve a problem.

Steps problem-solving in artificial intelligence: The problem of artificial intelligence is specifically related to the existence and behaviors of people. So, we require a set of measurable steps to solve a problem that makes it easier for people to operate. (Wikipedia - Reasoning, problem solving, 2020)

Here it will be mentioned the steps that need to be taken to solve the problem:

- ➢ Goal Formulation: This one is the first and basic step in problem-solving. It prepares limited steps to formulate an aim / goal that involve some measures to accomplish the objectives. Currently, the target formulation is based on Artificial intelligence agents.
- ➢ Problem formulation: this is another step, which is part of the core steps in problem-solving that determines what action are required to reach the

specified objective. In artificial intelligence, this core part is based on the software agent, which consists of the above components to be formulated by the related problem. (Aima - Knowledge, reasoning, and planning, 2019)

Aspects to implement the associated problem:

- Initial State: This state needs an initial condition for the problem that begins the artificial intelligence agent forward into a defined target. In this phase new techniques often initiate problem domain solving by a particular class.
- Action: This level of proposed methodology operates with feature with a particular class extracted from the original conditions and all potential behavior performed in this stage. (Internet Archive - Artificial intelligence : structures and strategies for complex problem solving, 2018)
- Transition: This phase of proposed methodology incorporates the current action taken by the former execution phase and gathers the final phase to progressing it to their following stage.
- Goal test: This stage decides that the defined goal accomplished by the unified transformation model or not, at any time the aim succeeds pause the operation and forward into the next stage to regulate the cost to accomplish the objective. (Internet Archive - Artificial Intelligence : a new synthesis)

4.2. Knowledge Representation

Knowledge representation is a sector of artificial intelligence that emphasizes on the architecture of digital representations which capture world knowledge which it might be useful in order to be solved difficult problems. The explanation about the representation of knowledge seems to be that the traditional procedural code is not the best methodology to be used to solve complex problems. Knowledge representation has the ability to make complex software looks easier. So, as to resolve complex problems using artificial intelligence, an oversized amount of data and a few mechanisms for manipulating that knowledge to form solutions, is required. (Wikipedia - Knowledge-representation , 2020)

A very interesting approach is that of Randall Davis of MIT institute in a key 1993 paper on the topic, where he sketched out five particular functions to investigate a knowledge representation framework:

  i.   Knowledge Representation (KR) is most essentially a proxy, a replacement for the thing itself, used to allow a person to decide the implications by thinking instead of operating, e.g., via thinking about the universe instead of taking action in it.
 ii.   It is a few philosophical commitments, such that, the answer to the question: into which aspects should I think of the universe?
iii.   It is a fragmentary theory of intelligent reasoning, communicated as far as three parts: (a) the basic idea of intelligent reasoning by the representation; (b)

the collection of assumptions by the representation sanctions; and (c) the sequence of observations suggested by the representation.
iv. Another input to this realistic effectiveness is the suggestions given by the representation for organizing data in order to promote the inferences suggested.
v. It is a means of human communication, e.g., a vocabulary where we tell facts about the world. (Research Gate - Review of Artificial Intelligence, 2019)

Now it is time to make a brief overview of the methods of representation of knowledge. These methods are:

❖ **Semantic Networks**

Semantic networks are an option of approaching for the representation of knowledge. In Semantic networks, people can reflect their knowledge in the type of visual networks. This network contains nodes, which are representing objects and arcs that are defining the relationship between the objects. Semantic networks are able to categorize the object in a variety of forms, and they are also able to connect the objects. Semantic networks are simple to follow and can be not difficult to expanded. This representation includes mainly two types of relations:

a) IS-A relation (Inheritance)
b) Kind-of-relation

In the following diagram, I have represented the different kind of knowledge in the form of nodes and arcs. Each object is related to another object by a certain relationship. Specifically, there are some statements that I am going to represent in the form of nodes and arcs. (Edureka - What is Knowledge Representation in AI? Techniques You Need To Know)
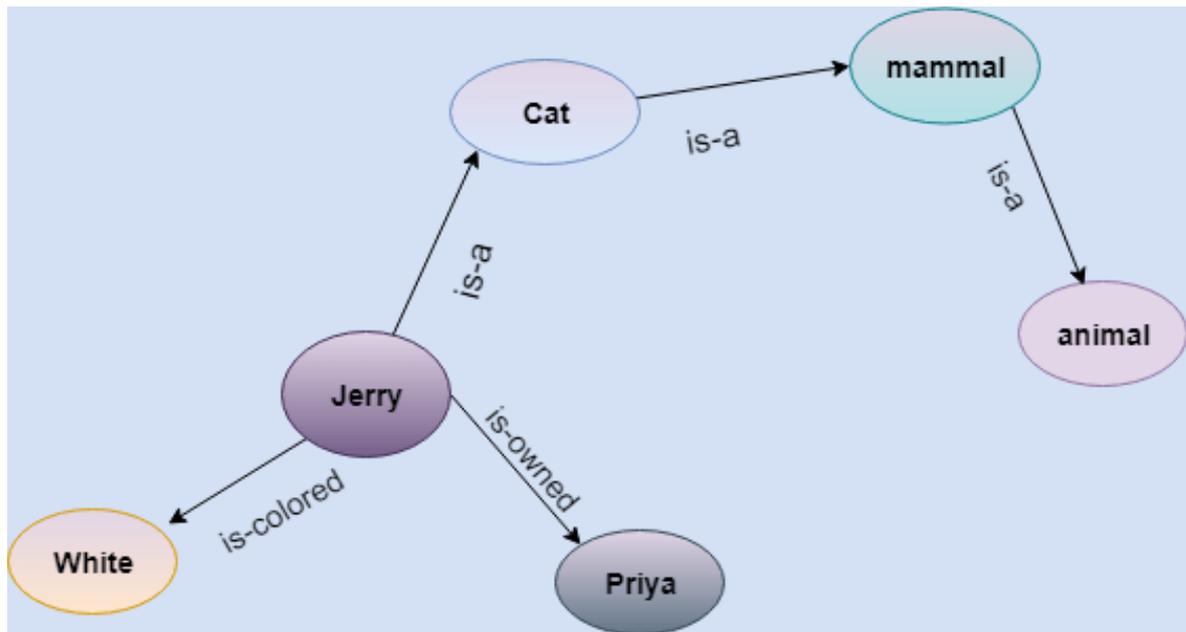
Statements:

Jerry is a cat.

Jerry is a mammal

Jerry is owned by Priya.

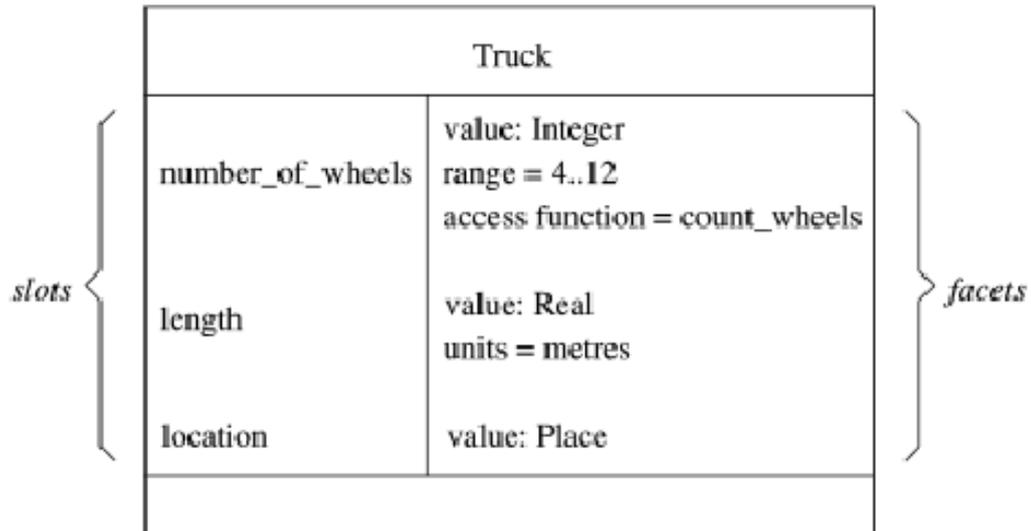Jerry is brown colored.

All Mammals are animal.

(Java Point - Techniques of knowledge representation, Techniques of knowledge representation)

❖ Frame Representation

 A frame is a structure-like record composed of a set of attributes to represent an object in the world and its values. Frames are the framework of artificial intelligence data that by reflecting stereotypes, splits knowledge across substructures. It is made up of a series of slots and slot values. Such slots may be of any type and sizes. Slots contain names and values that are referred to as facets. Facets: The different features of a slot are referred to as facets. Facets are frame characteristics that allow us to impose constraints on the frames. Example: When data from some specific slot is required, IF-NEEDED facts are named. Any number of slots can contain of a box, and a slot can have whatever range of facets, and facets could have had any number of values. A frame is also defined as a representation of slot-filter knowledge in artificial intelligence. Frames are generated from semantic networks and have further grown into the classes and objects of the modern day. It is not really useful for a single frame. The system for frames includes a number of linked frames. In the frame, in the knowledge base, knowledge for an object or event may be placed together. The frame is a sort of technology commonly used in numerous technologies, such processing of natural language and visions of machine. (Java Point - Techniques of knowledge representation, Techniques of knowledge representation)

 Moreover, as you can see, we may wish to specify limits on the number of wheels, offer a default, or estimate a value using a function presented as an access function. In the following example, an access function count wheels may calculate the range of wheels when a value is not before known.

Truck	
number_of_wheels	value: Integer range = 4..12 access function = count_wheels
length	value: Real units = metres
location	value: Place

(Reseach Gate - Example of a Frame-based Representation)

❖ Production Rules

The model of production rules includes a group (condition, operation) that say "if condition, then action." It primarily consists of three sections:

I.   The set of production rules
II.   Working Memory
III. The recognize-act-cycle

In production rules, the condition is tested by the operator and if the assumption holds, the production rule fires and necessary action is taken out about what rule can be enforced to a problem is decided by the situation part of the rule. As well as the action section executes the relevant problem-solving steps.

An example of production rules might be 'IF (at bus stop AND bus arrives) THEN action (get into the bus)' and 'IF (on the bus AND paid AND empty seat) THEN action (sit down).'

❖ Logical Representation

Logical representation is a language that has certain specific rules that have to do with ideas and has no representational confusion. It reflects a deduction based on different situations and formulates some essential rules of communication. Moreover, it contains a precisely defined syntax and semantics that help the implication of the tone. Using syntax and semantics, each sentence could be translated through logic.

Syntax:

- Syntaxes are the rules that define the logic of how we would create legal sentences.
- It defines which symbol we could use in the representation of knowledge.
- How to construct the symbols for them.

Semantics:

- The rules under those we can view the sentence in logic are semantics.
- Semantic also contains giving to each sentence a meaning. (Edureka - What is Knowledge Representation in AI? Techniques You Need To Know, 2019)

4.3. Machine Learning

Machine learning is the science of computer algorithms that by experience, progress automatically. Machine learning is a part of artificial intelligence that maintains a computer's built-in algorithms current, despite changes in the global economy. It is considered as an artificial intelligence sub-set. It also includes on the development of computer programs that are able to access and use data and learn for themselves. In a broad array of applications, like email filtering as well as computer vision, machine learning algorithms are used where it is not easy or impossible to create traditional algorithms to execute the tasks required. In order to search for trends in data and make meaningful choices in the future based on the examples we have the learning process starts with observations or data, such as examples, direct experience, or guidance. The main objective is to enable computers to learn automatically and change behavior properly without human involvement or help.

In addition, it includes computers learning the way that tasks can be conducted out without being expressly configured to do so. It includes computers training through the data, which will be given in order to those certain tasks are performed. It is possible to program algorithms advising the machine how to perform all the necessary steps to complete the task given for basic tasks assigned to computers, no effort is essential on the part of the computer. It could be difficult for a person to manually build the necessary algorithms for even more advanced tasks. In fact, helping the machine create its own algorithm can prove out to be even more efficient, instead of making human programmers define every required step.

The machine learning methodology uses different strategies to teach computers to perform tasks where there is no entirely satisfactory algorithm. One solution is to mark some of the correct answers as true in situations where large quantities of possible answers exist. This could be used to optimize the algorithm(s) it uses to define correct answers as training data for the software. For instance, the National Institute of Standards and Technology dataset of handwritten digits has often been

used to teach a program for the digital character recognition mission. For diverse uses, machine learning is used in different sectors. Marketing and e-commerce platforms, which concerns this thesis, based on the web search history of the users or prior purchases, ads may be tuned to provide reliable and tailored suggestions to their users. (Investopedia - Machine Learning, 2020)

In their method, the type of data they receive and display, and the nature of the task or issue they are expected to solve, the types of machine learning algorithms vary. Only a few of them will now be analyzed:

- Supervised machine learning algorithms

Using labeled examples to forecast upcoming scenarios, they will relate what has been experienced in the past to new data. The learning algorithm generates an implied process to make predictions for the output values beginning from the analysis of a known training dataset. After extensive practice, the system is able to offer targets for any fresh data. In order to adjust the model accordingly, the learning algorithm may also correlate its output with the right, expected output and detect errors.

- Unsupervised machine learning algorithms

In comparison, where the data used for training is neither identified nor identified, these algorithms are used. Unsupervised learning explores how systems can predict from unlabeled data a feature to explain a secret structure. The system does not work out the correct output, instead, it examines the information and therefore can build data set inferences to explain hidden structures through unlabeled data.

- Semi-supervised machine learning algorithms

They come somewhere in between supervised and unsupervised learning, as they use both labeled and unlabeled training data, usually a small number of labeled information and a large number of unlabeled data. The systems that use this technique can also increase the precision of learning significantly. Typically, semi-supervised learning is preferred where skilled and appropriate resources are needed for the obtained labeled data to train it / improve from it. Otherwise, it typically doesn't take extra resources to obtain unlabeled data.

- Reinforcement machine learning algorithms

It is a process of learning that communicates with its context by generating behaviors and finding errors or rewards. The most important characteristics of pattern recognition are test and error search and delayed reward. In order to optimize its effectiveness, this approach enables machines and software agents to automatically evaluate the optimal behavior within a particular context. As for the agent to learn

which behavior is better, simple reward feedback is needed; this is known as the reinforcement signal.

Concluding, machine learning allows large amounts of data to be analyzed. While it typically offers quicker, more specific outcomes to identify lucrative possibilities or hazardous threats, it may also take extra time and resources to train it properly. In the management of various volumes of data, combining machine learning with Artificial intelligence and cognitive technology will make it even more efficient. (Wikipedia - Types of learning algorithms, 2020)

4.4. Deep Learning

Deep learning is a function of artificial intelligence which mimics the human intelligence in data processing and the development of patterns for decision-making usage. Deep learning is a subfield of machine learning in artificial intelligence that has networks capable of learning unsupervised from unstructured or unlabeled information. It is also known as deep neural learning or deep neural network. In deep learning, the word "deep" comes from the use of several layers in the network. (Wikipedia - Deep Learning Defenition, 2020)Early studies found that a linear perceptron cannot be a universal classifier, but it can, on the other side, be a network with a nonpolynomial activation function combining a hidden layer of unbounded duration. It is a modern variant that addresses an infinite number of bounded-size layers, allowing functional application and optimized execution, while preserving theoretical universality over mild conditions. The layers are also enabled to be diverse in deep learning and to deviate broadly from biologically informed connectionist models, for the sake of performance, trainability and comprehensibility, from where the "structured" portion comes from. (Forbes- What Is Deep Learning AI? A Simple Guide With 8 Practical Examples, 2019)

The most of modern deep learning models are based on artificial neural networks, in particular coevolutionary neural networks (CNN), even though in deep generative models like the nodes in deep belief networks as well as deep Boltzmann machines, they can also involve propositional formulas or latent variables structured layer-wise. Each level during deep learning learns to process its input data into an increasingly abstract and complex representation. The raw input could be a pixel matrix in an image recognition application; the first representational layer can extract the pixels and encode edges; the next layer can formulate and encode edge frameworks; the third layer can encode the nose and eyes; and the last layer can identify that the face is including in the image. Notably, a deep learning process may learn which features can be optimally placed on their own level. (Expertsystem - Machine Learning Defenition)

With the digital era, which has contributed to an abundance of data in all forms and from every part of the world, deep learning has grown together. This data, simply referred to as big data, is derived from, among others, sources such as social media,

internet search engines, e-commerce websites and e cinemas. This massive quantity of data is easily available and can be shared by Fintech applications such as cloud computing. (Investopedia - Deep Learning)

This following image is capturing step by step the process of image recognition that it has been already explained few lines up.
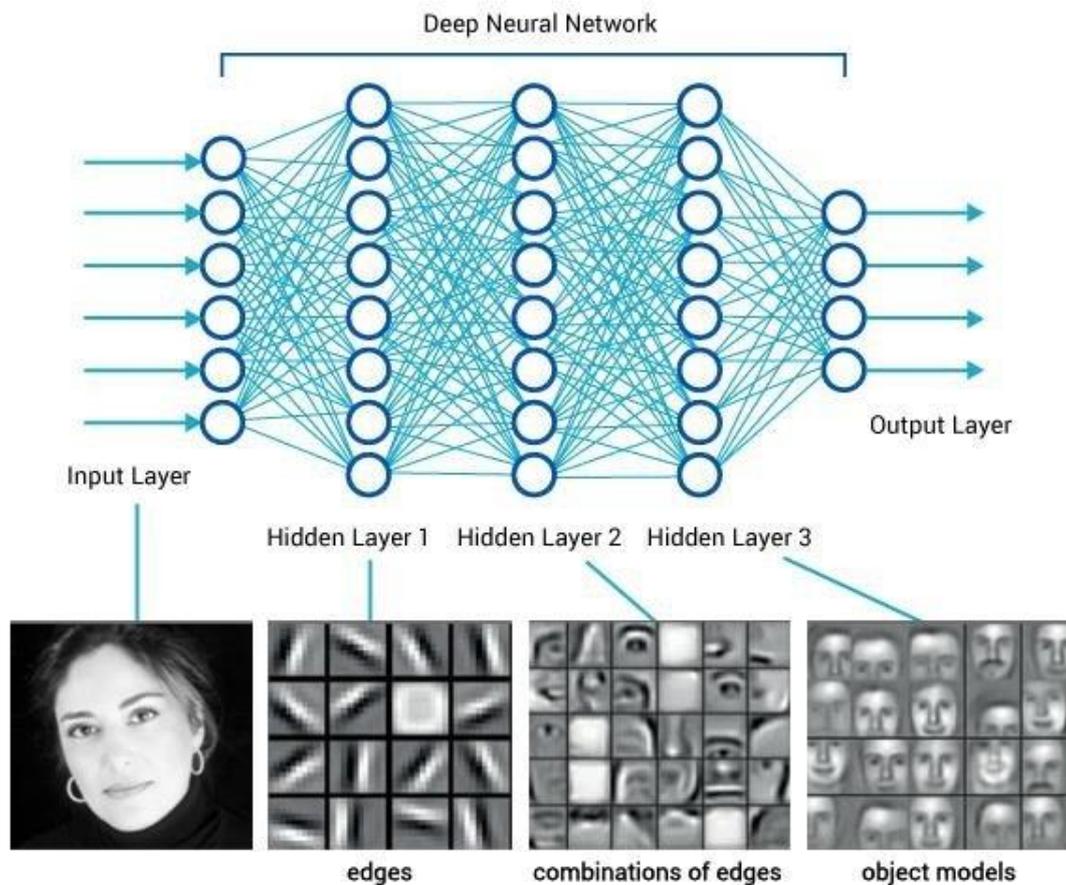
(Research Gate - Review of Artificial Intelligence, 2019)

4.5. Natural Language Processing

Natural Language Processing (NLP) is a subset of linguistics, computer science and artificial intelligence associated with the interactions among computers and human language, in fact on how computers are programmed to process and interpret huge amount of natural language data. It is designed to create software that produces and understands natural languages but instead of just programming or artificial languages such as Java or C, a user can have natural discussions with his or her machine. (Wikipedia - Natural_language_processing)

Natural Language Processing is one element in the technology sector's broader mission, which is to use artificial intelligence to optimize the way the world works. As a progressively technology-savvy society seeks innovative ways to communicate digitally with each other and with firms, the digital world has proven to be a game-changer for many businesses. The definition of community has been redefined by social media; the digital payment standard has been modified by cryptocurrency; e-commerce has established a new definition of the word comfort, and cloud storage has brought another degree of data management to the masses. Fields such as machine learning and deep learning, which I analyzed them earlier, are able to provide a world of all opportunities through AI. (Expertsystem - Natural language processing, 2020) To make sense of big data, machine learning is rapidly being used in data analytics. In order to replicate human conversations with clients, it is often used to program chatbots. Even so, without the creativity of Natural Language Processing, these potential machine learning applications will not be possible. (Invostepedia - Natural Language Processing (NLP), 2020)

In this part is going to be analyzed all the levels that systems interpret language.

- o Morphological level: Morphemes are the smallest units of meaning between the words, and in their position as the parts that make up the word, this level deals with morphemes.
- o Lexical level: This study of speech level explores how the sections of words (morphemes) interact to produce words and how minor variations can alter the meaning of the final word drastically.
- o Syntactic Level: At the sentence level, this level concentrates on text. Syntax focuses on the fact that the meaning of a sentence depends on sentence structure and dependency in most languages.
- o Semantic Level: Semantics focuses on how the meaning of words at an individual level can be defined by the context of words in a sentence.
- o Discourse Level: How sentences connect to each other. The structure and sentence patterns may have an effect on the sense of the sentences.
- o Pragmatic Level: Essential sense of situational understanding and world comprehension of words or phrases. What significance is most probable, generally, which will make the most sense. (Digitalguide - What is natural language processing?, 2019)

For computers to succeed human-like understanding of texts/languages, the primary objective of natural language processing is. Computer systems will have the ability to comprehend, draw inferences from, interpret, translate and produce precise and natural human text and language once this is done. (Towards Data Science - Your Guide to Natural Language Processing (NLP), 2020)

4.6. Neural Network

A neural network is a neuron network or circuit, or an artificial neural network consisting of artificial neurons or nodes in a modern sense. Therefore, a neural network is either a biological neural network consisting of actual biological neurons or an artificial neural network to solve problems with artificial intelligence. The biological neuron relations are described as weights. A positive weight represents an excitatory relation, whereas negative values indicate inhibitory connections. Both inputs are adjusted by a weight and summed. A linear combination is related to as this operation. (Computer History Museum - How do neural network systems work, 2020) Eventually, the amplitude of the output is regulated by an activation function. A reasonable performance range, for instance, is generally within 0 and 1, or it may be −1 and 1. Here you can see a simple neural network example:

A simple neural network

input layer   hidden layer   output layer
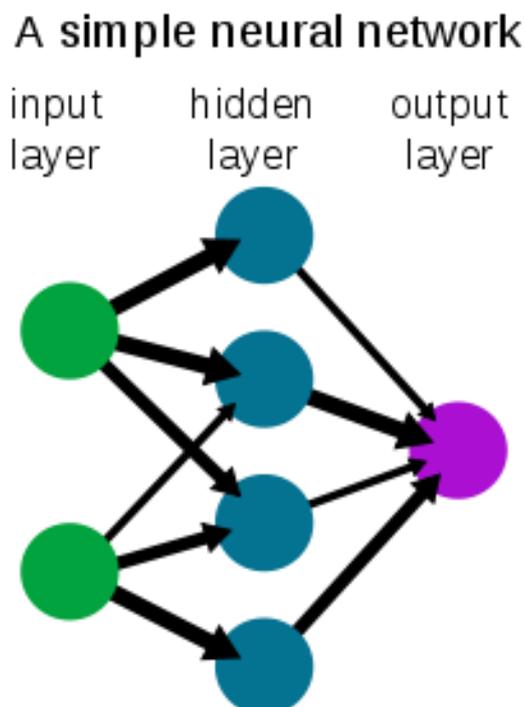
(Wikipedia - Neural Network, 2020)

The neural network functions in the same way as the neural network of the human brain. A neuron in a neural network is a mathematical process that gathers and classifies data according to a particular architecture. As a consequence, each neuron is linked to other neurons in the network via these synaptic connections, the weights of which are weighted, and the signals propagating via the network are reinforced or dampened by these weight values. (Explainthatstuff - Neural networks, 2020) The training process includes changing these weight values so that the end performance of the network offers you the right response.

The network has a close resemblance to mathematical approaches such as curve fitting and regression analysis. A neural network comprises layers of nodes which are interconnected. Every node is a perceptron and is comparable to a linear regression of multiples. The perceptron feeds the signal generated into an activation function that could be nonlinear by a multiple linear regression. Perceptrons are organized into interconnected layers in a multi-layered perceptron (MLP). Input patterns are collected by the input layer. There are categories or output signals in the output layer that input patterns will relate to. For example, a collection of quantities for technical security indicators might be included in patterns; possible outputs may be "buy," "hold" or "sell." Hidden layers fine-tune the input weightings till the margin of error is negligible for the neural network. It is presumed that hidden layers deduce salient characteristics that have predictive power over the outputs in the input information. This explains the extraction of characteristics, which achieves a utility close to statistical strategies such as evaluating the main variable. (Investopedia - Neural Network, 2020)

Neural networks are commonly seen in applications for financial processes, business planning, trading, business analytics and product maintenance. Neural networks have also received much interest in business applications like forecasting and marketing analysis solutions, identification of fraud and risk assessment. In the following chapter, you will see some applications on digital marketing specifically. (Wikipedia - Neural network, 2020)

5. Artificial Intelligence in Digital Marketing

Artificial intelligence is already playing a very important and transforming role to digital marketing. Artificial intelligence marketing uses artificial intelligence technology to make automated decisions based on data collection, data interpretation, and additional audience insights or economic patterns that may have an effect on marketing strategies. Artificial intelligence is also used in marketing campaigns where pace is the key. In order to learn which is the best to communicate with customers, artificial intelligence tools use data and customer profiles, then deliver tailored messages to them at the proper moment without interference from marketing members of the team, making sure greater performance. Artificial intelligence is used to increase digital marketers or to perform more strategic tasks that require less human nuance. Here it comes the artificial intelligence to take it to the next level and rock it.

5.1. The uses/shapes of Artificial Intelligence in Digital Marketing

 In 2020 we can say for sure that Artificial intelligence marketing is a fact! Specifically, it's a way to leverage consumer data and Artificial Intelligence technologies such as machine learning to predict the customer's next step and boost the customer's journey. Advances in Artificial Intelligence are giving businesses easier methods to use it. Artificial Intelligence will help create more successful marketing campaigns, boost the consumer journey, and transform the way companies attract, cultivate and turn prospects. The diagram above illustrates how Artificial Intelligence and machine learning can be integrated through every process of the customer's life cycle. (Social media Strategies Summit - 10 IMPRESSIVE EXAMPLES OF AI IN MARKETING, 2020)
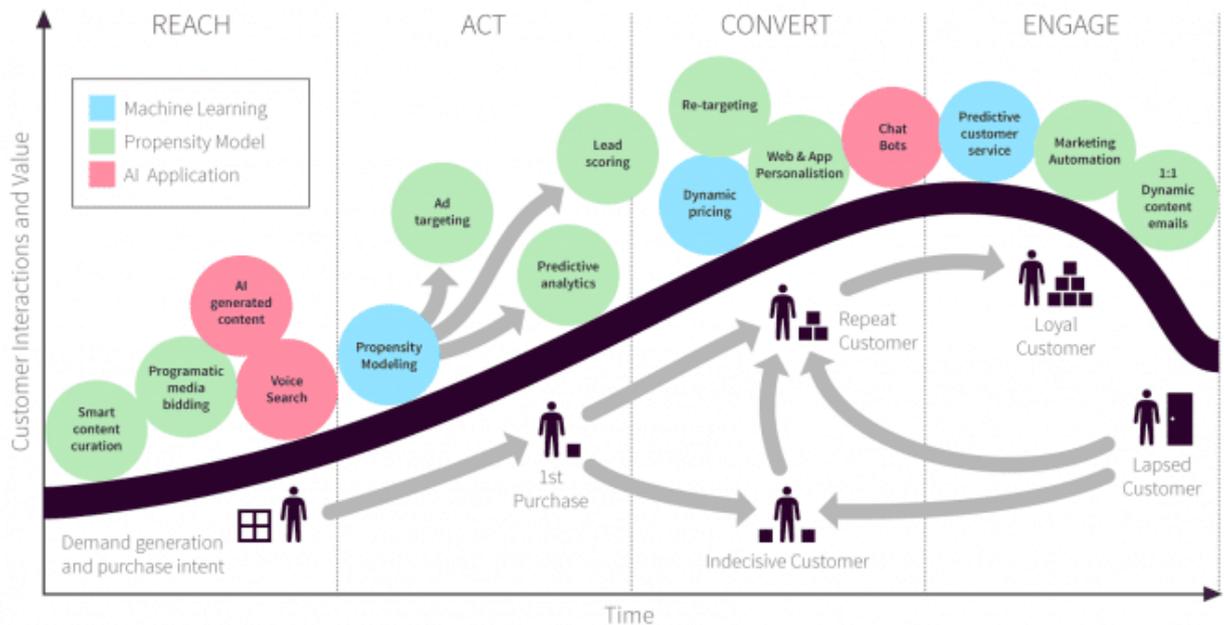
(Social media Strategies Summit - 10 IMPRESSIVE EXAMPLES OF AI IN MARKETING, 2020)

Digital marketers are already gaining high ROI (Return on Investment) from Artificial Intelligence technologies, as more companies are adopting this technology choice daily. By 2021, businesses are predicted to invest $57 billion on Artificial Intelligence networks (Forbes - 4 Ways Artificial Intelligence Can Improve Your Marketing (Plus 10 Provider Suggestions), 2019)

In this research is going to be presented just some of these methods, mainly the most common used and the most profitable ones.

1. Advanced customer profiling

For the performance of the digital marketing strategies, knowing your target audience and recognizing their needs, desires and expectations is important. It helps you to segment your email and content marketing and personalize your marketing messages and content with an objectively specified ideal consumer profile and buyer personas. Data suggests that such a strategy results in an increase of 171 percent in revenue generated by marketing. What Artificial Intelligence does best is to capture, evaluate, and process large sets of data. And this technology will provide you with access to advanced consumer analytics in 2020. In other words, you'll gain a deep understanding of the spending patterns and buying motives of your prospects. For people, it would be nearly impossible to crunch all the statistics and comprehend how customers behave while shopping and what makes them tick precisely. (Broad Suite - 8 Examples of AI in Marketing, 2020)

These types of data usually are:

⇨ Geo-specific events
⇨ Previous interactions with customers
⇨ On-site behavior
⇨ Similarities between types of prospect or customer

This sort of smart consumer behavior and behavior monitoring offers you useful insights into what they really want and expect from you. Luckily, you can offer the right and highly customized content, email campaigns, product reviews, or help to your audience and improve conversions with such accurate profiling.

2. Chatbots

Chatbots are AI-powered software that you schedule to strengthen customer discussions. You could program the chatbots with clear responses to commonly asked questions (such as what is your return policy?" or "what is the price of your services?"), so the chatbots can jump in and do the job for you instead of wasting the time and effort to answer every particular question from your clients. What's interesting is that they leverage machine learning, meaning that the more questions your clients pose, and the more such questions are answered, the better the program improves to answer them. Chatbots could be placed o n a website, on Facebook or on a customer service portal. You will find an opportunity to use the chatbot technology everywhere you communicate with your customers. Here you can see a real example of a website.
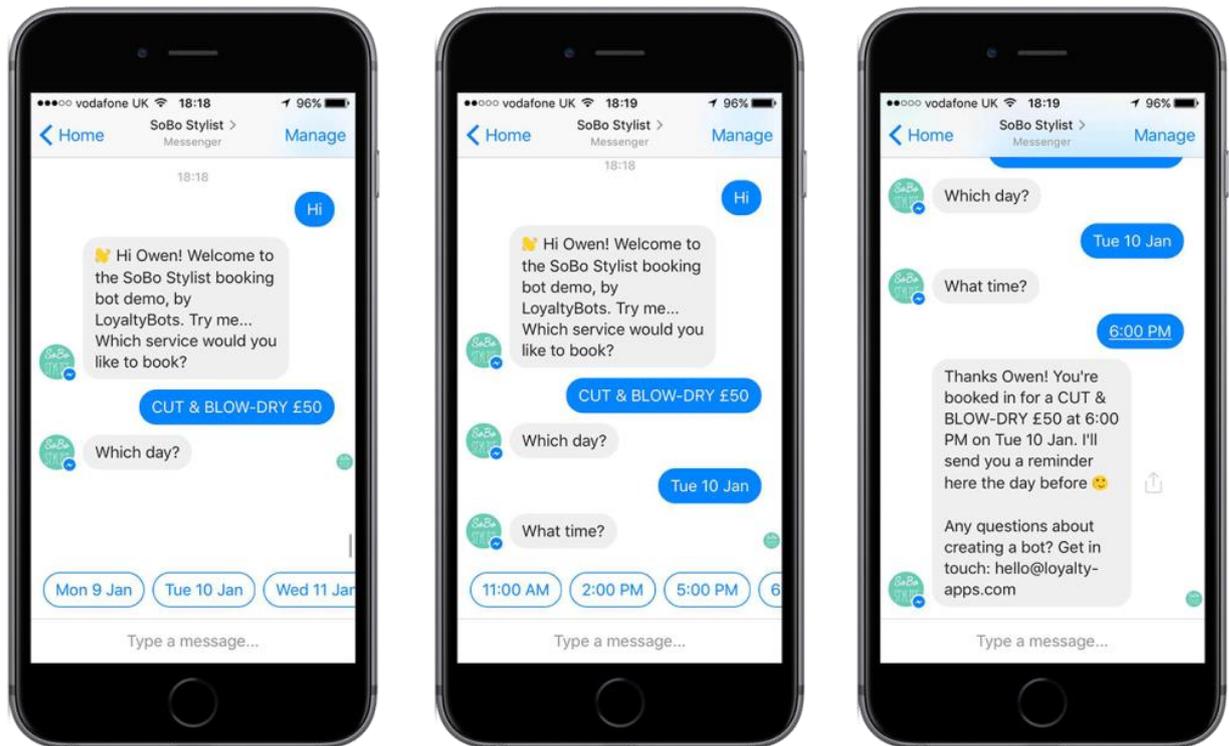
(Wordstream - 10 of the Most Innovative Chatbots on the Web, 2019)

To be more specific, I will mention just four roles that chatbots are playing in digital marketing:

a) Real-time communication: visitors can be transformed to clients via chatbots.
b) Data collection, cross-referencing and demographic analysis can be configured for them.
c) As they adapt their messages to the customer's needs, chatbots can effectively turn brand ambassadors. This builds trust over time and customers will become loyal to your brand.
d) They have an interface that is dynamic real-time and seamless.

Your customer service agents, however awesome they are, are just humans, and can only handle one call at a time. In addition, it is very costly to have someone available 24/7 to serve the customers from various time zones. (Ppcexpo - Chatbots in digital marketing, 2019)

3. **Content creation**

Content creation uses the power of artificial intelligence and data to give insights into content which could help marketers develop and refine their strategy and make their content even more valuable. Artificial intelligence is now capable of producing meaningful content. This does not make copywriters useless-at least not in 2020-but it will be used to build reviews and other forms of content pieces, which can be automated. (Sparklane-Group- 10 Examples Artificial Intelligence Marketing, 2020)

The majority of content intelligence systems implement a three-step process:

1) Data collection – This is typically from a number of sources, including web analytics, social media reports, consumer surveys, the CRM, and other market indicators.
2) Analysis – During this process, the system will use data to identify patterns, tendencies and associations.
3) Insights and Suggestions – After the data has been evaluated, the framework will offer actionable insights to improve the strength and relevance of your content, strengthen your ROI and better address your customer's needs. It can also make assumptions about future developments or how you can develop your content strategy in the future. (Smartinsights - How AI is transforming the future of digital marketing, 2020)

4. Dynamic Pricing

Dynamic pricing implements algorithms to detect the optimal pricing for these conditions, boost sales results and reduce the guesswork for all this pricing insanity. The simplest approach is to develop a balance among price and availability that provides the most benefit. Other approaches contain consumer differentiation (that many found unethical) and market segmentation, such as a hotel room with a decent view or a hotel room with a view of the street. Artificial intelligence could make dynamic pricing simpler and stronger. It enables continuous prediction, enabling real-time pivots for events. Although you can forecast a few of these events with past data, but not all of them. Define what's going on even quicker with artificial intelligence, and you can change the price in minutes instead of once per year. For human actions, quicker response times are greater. Artificial intelligence can analyze numbers quicker than humans, bringing them out of the process for faster performance. Artificial intelligence can help to rethink the way companies think of pricing with better data and quicker action. It can have a huge effect on sales to the tune of billions of euros by changing the way companies use their assets and promoting the responsive cycle of economic environment. (Open Data Science - Using AI for Dynamic Pricing: The Smarking Example, 2020)

5.2. The benefits of Artificial Intelligence in Digital Marketing

Through all these applications of artificial intelligence, which are mentioned before and of course of many others, there are coming up a number of benefits.

➢ Cost effective: Using an artificial intelligence tool is more economical than having a full-time employee. Since it is automated, the margin of error is negative, so when there is any problem due to human error, this helps to

balance the costs. These technologies can perform more tasks than humans and in a shorter time that reduces costs.

➢ Increase Campaign ROI: If leveraged properly, by extracting the most valuable insights from their datasets and acting on them in real time, digital marketers can use artificial intelligence to reshape their whole of marketing strategy. Artificial intelligence platforms are able to take quick decisions on how best to allocate funds along all media platforms or evaluate the most efficient marketing campaigns to interact with customers more consistently and get the most value out of campaigns. (Marketinginsidergroup - Top Benefits & Uses of AI in Digital Marketing, 2020)

➢ Saves the time: Company requires a bulk data processing and the information consists of several fields and entries. There is a high risk of inaccuracy and needs a lot of work in the way of executing this role by people, but it can be prevented with the aid of artificial intelligence. It not only decreases the risk of error, but also saves a lot of time. For several other uses, like implementing strategies, the extra time can be used.

➢ Real-Time Conversations: Companies may interact directly with customers in real-time via online conversations or events with artificial intelligence-powered resources. The 'decision-making moment' will significantly affect contact with customers. It directly impacts purchase decisions. In order to recognize any related conversations, artificial intelligence allows advertisers, researchers, and analysts to track these social conversations and other open platforms.

➢ Personalization: It just makes business sense to supply a customized service. They are more possible to buy it if consumers receive reading tips and product reviews that appeal to their interests. If they are satisfied with the service they offer and the communications they get from you, your rivals are more willing to go with you. It is fair that customizing your services and delivering a personalized experience would increase your sales and conversions, and the data supports it: 75% of customers choose to buy from a company which knows its name and purchasing history, and Forbes' research shows that digital marketers who offer customized web experiences earn double-digit returns in marketing results. (Ideatick - How artificial intelligence benefits digital marketing, 2020)

Artificial Intelligence's capacity is growing fast. It has already been introduced in their industry by digital marketers in creative ways to offer their consumers with greater satisfaction. The likelihood of it being involved in big digital marketing programs, ventures, and campaigns is growing with the evolution of artificial intelligence. In optimizing and speeding up different marketing campaigns, improving customer service and increasing conversions, artificial intelligence can be useful. So, since you can imagine, emerging technologies are able to make digital marketers' lives even easier. And we can expect that further developments would reinforce the methods and frameworks of artificial intelligence already in use. Artificial intelligence, in conclusion, is just getting better! (Marketing Evolution - Benefits of Leveraging Artificial Intelligence in Marketing, 2019)

5.3. Risks and Limitations of Using Artificial Intelligence in Digital Marketing

There are many advantages that artificial intelligence provides to digital marketing professionals, as I mentioned above. Nevertheless, nothing comes simple or without a price, as with artificial intelligence.

From my perspective, while chatbots are very beneficial, they can also be a challenge for people who are not so fond of technology. As a millennial, in engaging with a virtual assistant or getting premeditated responses to questions, I do not find a problem. Although the experience of communicating with a robot might not have been appreciated by a human of an older age. This may contribute to disappointment with consumers and disloyalty to the brand.

It was discussed earlier in this study that artificial intelligence operates as a cost saver. While it is true to some degree, without skilled support, artificial intelligence is not at the stage of functioning entirely. Not all software applications have the same creativity rate as artists do. Marketing professionals are definitely not designers; they are more, though, to be the most innovative professionals in the business sector. Humans are thinkers and sensitive and they are also very innovative. They can create thoughts; they can think out of the box. They see, they hear, they think and they feel a computer that can't. Their ideas are driven by the emotions that machines utterly miss. No matter how much a computer develops, it cannot and cannot imitate the human brain's innate intuitive abilities.

Privacy is potentially one of the main problems with the use of artificial intelligence. Organizations appear to misremember that they do not contribute to stored records, but to their consumers instead. Hayward offers advice to organizations by advising them to protect the privacy of customers, request permission to use data, and always follow the preferences of consumers. Professionals ought to be polite and respectful to get benefited of the data offered. Even though in order to help dissatisfied consumers, companies must protect the data generated by their customers and make it clear that they regularly ask their customers for permission to use the data and question what consumer preferences are. The role of digital marketers, after all is to create strong relationships and not ruin them.

Data thus not only creates opportunities, but can also maximize the expenditures of any organization. While data is free, it is a massive expense for organizations to store data and stocking up bad data is an unnecessary cost that should be prevented. This suggests that there are not the same prospects for companies with small budgets as multinational corporations. Data storage can cost hundreds and thousands of euros, or even millions and it is becoming a major problem for businesses with a growing volume of data. Marketers, therefore, fail to have the same opportunities as others do. For businesses, deciding what data to save and what data to delete may be difficult. Thanks to a marketing team risking missing data that could maintain their customer interest or other vital details, running such a method has its downfall. (Nibusinessinfo - Risks and limitations of artificial intelligence in business, 2019)

It also offers them with a challenge, despite algorithms creating an immense opportunity for digital marketers. It is crucial for advertisers to note that algorithms are logical, but often human actions cannot be rationalized. Marketers are thus actually neglecting an advantage that an algorithm might not locate.

With practice, artificial intelligence cannot be strengthened; if no different command is provided to them, they can perform the same role again. It can contribute to wear and tear over time. It stores a lot of data, but it is very different from human intelligence in the extent it can be processed and used. Moreover, the complex world cannot be tackled and they are unable to change their reactions to changing situations. We are continually bombarded by the issue of whether replacing humans with machines is very exciting. There are no emotions in artificial intelligence there's nothing quite like working with a whole heart or complete love for them. There is no feeling of belonging or of being together or of having a human connection. They fail to differentiate among hardworking person and an inefficient person.

Another important struggle is the high cost of artificial intelligence, but there is no such thing as a free lunch. Since it is a complex computer, it needs tremendous expenses. Besides the cost of installation, enormous costs are often needed for its repair and maintenance. Computer systems need to be modified regularly and adapt to the needs of the changing world. Even the cost of production is very high if there is a failure. Recovery takes a large amount of time, too. (Data-flair.training - Pros and Cons of Artificial Intelligence – A Threat or a Blessing?, 2020)

This one may be the last, but it is also the riskiest one and can have significant consequences. In certain sectors, human-intensive requirements have reduced with highly profitable technologies. If human beings do not contribute to their abilities in the future, then we can see that they will be displaced by computers in no time. Unemployment is the real concern of GDP being stable or not rising at the anticipated pace. People do not have the requisite abilities that are in demand. Due to this there is a large demand and supply gap.

6. Conclusion and Future Work

The main purpose of this last chapter is to conclude the observations of all the investigative questions were made in the previous chapters and to find out if digital marketing is really shaping by artificial intelligence. Moreover, it will be presented my personal learning acquired during the process of writing this thesis. Lastly, it is also about the future predictions of artificial intelligence that may happen on digital marketing.

6.1. Main Findings

The aim of the first investigative question was to address the current and unavoidable connection with digital marketing and artificial intelligence. Desktop research has shown that artificial intelligence technologies are now widely used for digital marketing operations. The study of various levels of artificial intelligence has shown that, for several years now, poor artificial intelligence has played a significant role in digital marketing activities. Research has also shown that strong artificial intelligence, mainly in the areas of data processing and personas targeting, which is building its foundation in digital marketing.

Another thing that it was investigated in this thesis is digital marketing and some of the most common methods that are being used from companies to be stronger in the market. So, after presented all those methods with some specific examples to be more understandable and all the benefits that can bring to the companies by raising the loyalty and the awareness from customers and of course that brings the results of raising up the profits.

It was also examined the four main types of machine learning but the most important are the two of them. Supervised learning is more frequent than unsupervised learning, but it is very difficult to determine the distinction between the parties, as mentioned before. One thing is for sure, machine learning capabilities can perform repetitive tasks and enable marketers to devote their time to tasks that cannot be done by machines. Even so, reinforcement learning is more efficient and can help professionals' complete assignments that require more imagination. The study showed that well-trained algorithms are able to function almost as well as marketing experts with the aid of machine learning. Consequently, machine learning technology is a huge benefit for any company in any sector with the correct amount of data.

The next investigative issue involved desktop analysis and advice for the experts to collect data on potential advantages that AI offers to the marketing community. It is also suggested that existing artificial intelligence tools will enable marketers to improve the efficiency of the company's website on search engines because of the various analytical tools available on the market now. The qualitative research also found that artificial intelligence tools positively influence social media marketing. The artificial intelligence tools have the advantage of producing more customized posts/ads on social media and providing dynamic pricing to each company's products and services.

In addition, the qualitative study offered the reader with a perspective into the benefits that digital marketers derive from artificial intelligence. By helping marketers to personalize visual and written content to the preferences of each user, artificial intelligence advantages from many different reasons. Then it is not only saves time but also in some cases it's also cost saving. And of course, as it is proven from all the arguments that have been said it is increasing the ROI and consequently, raising up the profits.

Concluding, as it was supported the last investigative question that was answered was about if there are any negative aspects of using artificial intelligence in digital marketing. Qualitative research has presented that there are also cases where the algorithm can be inaccurate or misrepresentative of the actual user profile, and although artificial intelligence tools can perform tasks just as individual people do. There are incidents where several individuals use a computer in situations where algorithms do not demonstrate real user behavior, despite algorithms improving over time as they are educated. On the other hand, from what it was supported in the benefits, artificial intelligence is a costly method that not every company can afford. Therefore, it is important for small businesses and individual entrepreneurs to determine whether investment in new technology is worthwhile. This may not be a drawback, however, but rather a challenge that must be solved by organizations. Similar to data storage, data storage is a minor cost for large corporations, but it may be inexpensive for a single trader.

6.2. Future Predictions

Many aspects of our everyday lives can change thanks to artificial intelligence technology. The method we search online would be correlated with one of those items. It is expected that more tech users will turn to voice search as artificial intelligence progresses in the processing language, which will change the way keywords are being used. This means that SEOs will be affected. I do not fully believe, as the author of this study, that this will impact marketers as much as both professionals say. It is a question of feeling relaxed. I believe that this is a matter of feeling comfortable. Because of privacy issues, awkwardness and versatility, many individuals who search online do not feel comfortable searching through voice search. Therefore, although voice search can be more popular, there may be restrictions that prohibit users from using this technology entirely. A voice search would be used more generally in my opinion, but not to the degree that experts say. However, I suggest that digital marketers keep track of the developments in this technology, and research that are being generated may produce voice quest for ads portraying responsibility, benefits, and any possible disadvantages.

In addition, based on the research I have made, my general opinion of this study is that marketing professionals do not think that they will lose their jobs because of the introduction of artificial intelligence and machine learning technologies. Moreover, I assume that there would be more work openings open at higher management levels in the future than there are now. The 2017 report conducted by Capgemini shows just that, this study found that, thanks to the introduction of AI, 4 out of 5 businesses have produced new jobs. So, digital marketers should not be scared to adopt artificial intelligence software, but rather educate themselves and there will be more opportunities ahead of them.

Emotion intelligence is another aspect that will definitely have an effect on the work market. Computers would most certainly not achieve the degree of emotional

intelligence that humans have in their hands for generations to follow. In the other hand, for ad production etc. it is likely that it would never have the same emotional intelligence as we get to address social issues or emotional intelligence. Therefore, advertisers understand that this capability will be a major asset in opening up work prospects.

Concluding, I honestly believe that artificial intelligence would be humanized in a way that does not fear words such as "robots" or "artificial" for all humans. Artificial intelligence could theoretically also be replaced to make customers more able to exchange data and communicate with virtual support. That would be a good direction to pursue for digital marketers, at least from a technology standpoint. Such a move will from my perspective, provide the digital marketing industry with more opportunities.

6.3.   Own Learnings

This whole research helped me in my evolvement in my career path since I am working the last three years as digital marketer and I adopted some of these strategics of artificial intelligence and it seems very promising. The research of artificial intelligence and its projected predictions would make a positive contribution to seeking a potential professional for me. A great contribution to the technical career is the development of a great deal of expertise in present and new technology. It is questioned if I would ever complete such a comprehensive review, instead, I overjoyed with the opportunity it has been, even though it was needed to make personal sacrifices in order to complete it.

I benefited most from the challenges faced during the writing of the thesis, and the sheer amount of knowledge found on artificial intelligence. It was difficult to determine what to hold and what to remove from this study because of the prominence of artificial intelligence as a topic in the media. It taught me how to analyze massive quantities of sources. The research of artificial intelligence and its projected predictions would make a positive contribution to seeking a potential professional for me.

Concluding I wanted to express my interest and my joy through all this research in order to conduct my thesis. I learnt many important things that I didn't know and I am sure that I am going to use them!

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