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**HOW CHATGPT IS CHANGING DIGITAL MARKETING ACTIVITIES:
THE ALELUYA’S CASE**

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Firma dello studente

Valentina Lopera G.

This thesis is dedicated to the person that advised me to write this note.

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INTRODUCTION

Artificial intelligence has permeated our reality in a way that years ago would have seemed like a plot from a science fiction movie. This new discipline that aims to simulate human intelligence in machines is a reality in which researchers have been working for more than half a decade, and which seems to be the new normality we are facing. Through this thesis, the evolution of artificial intelligence in history will be briefly exposed, and the basic foundations of this science will be explained with the aim of understanding its potential for multiple industries. Especially since the rise of artificial intelligence coincided with the era of digital marketing, diverse opportunities and approaches appeared in the marketing industry, in which we will mostly focus throughout the thesis.

With the advent of artificial intelligence, new developments with a promising future have appeared, such as ChatGPT. This is a chatbot released to the public in November 2022 and which through AI is capable of generating human-like text responses in a conversational manner. ChatGPT in a matter of months has turned into a promising chatbot for almost all industries due to the large amount of information that it is capable of amassing, its ease of use and the speed of response.

However, although AI sounds like the perfect ally for companies, it is not a very light reality either, since artificial intelligence has generated great skepticism and fear in the public due to the scope it can have. Especially in the case of ChatGPT there are still many legal loopholes and moral implications that need to be defined and which will be analyzed through this paper. Likewise, we will analyze the opportunities that ChatGPT represents when it comes to transforming digital marketing activities in companies, since it has the potential to perform tasks in a more efficient, innovative and friendly way, which makes it a strategic tool for the companies.

Additionally, this thesis will explain the process of implementing ChatGPT in the email marketing activities of the Colombian startup Aleluya. For this implementation, two segments were randomly selected from the company's cold leads database, in which the first segment

would receive a copy generated by a human and the second segment would receive a copy generated by ChatGPT. Both types of emails contained a CTA that aimed to encourage said leads to take action to become clients of the Aleluya company. Through this implementation, we identified what type of information is necessary to obtain adequate results from ChatGPT and how it can be trained to obtain better results. Likewise, at the end of the thesis the results of the implementation of ChatGPT for email marketing activities are presented and some recommendations are given regarding the use of this tool and how to improve the results in possible future implementations.

ARTIFICIAL INTELLIGENCE BACKGROUND AND ITS POTENTIAL IN MARKETING

The beginnings of artificial intelligence

The beginnings of artificial intelligence go back to the year 1931 when the Austrian mathematician Kurt Gödel published the incompleteness theorem, which was a basis for logic and computational science and served to expand the programmatic concepts of artificial intelligence (*Russell & Norvig, 2016*). Then came neural networks and the limits of intelligent machines, and it was in the 1950s that the golden years of AI occurred due to the unprecedented amount of research on these topics. One event that marked the 1950s was when British scholar Alan Turing introduced the Turing test in his paper titled "Computing Machinery and Intelligence," which covered the question: Can machines think? and it was accompanied by a peculiar hypothetical exercise: The Imitation Game. In its original conception, it did not involve a computer but instead it included three human participants in three separate rooms, connected to each other by a screen and keyboard. In one room there was a man, in another a woman, and in another was the person who was going to play the judge (gender irrelevant), and the woman had to try to convince the judge that she was the man (*Turing, 1950*).

After explaining this exercise with humans, Turing proposed it again, but this time involving a computer as the participant. The human tester had to ask the other two players (a human and a computer) open-ended questions in an attempt to identify which one is a human. If the tester couldn't identify which player is a human, the computer was assumed to be intelligent and it passed the Turing test (*Taulli, 2019*). This test had a great impact at that time and for many years was a benchmark in the industry. Although it has its limitations since it only measures the ability to imitate human behavior, without being purely intelligent and leaving aside other aspects that form a human (*The Turing Test (Stanford Encyclopedia of Philosophy), 2021*).

Then by 1956, Stanford researcher John McCarthy defined the term artificial intelligence as "*the science and engineering of making intelligent machines, especially intelligent computer programs. It is related to the similar task of using computers to understand human intelligence,*

but AI does not have to confine itself to biologically observable methods" (McCarthy, 1956). Which means that machines (through programs) have the ability to be intelligent, imitating human intelligence by making use of the cognitive functions of the human mind, such as learning, decision making and problem solving.

From there, new languages and systems began to be invented, and new theorems were built, which laid the foundation for the following years. Also as the years passed and driven by technological development, computers began to improve in speed, affordability, accessibility and ability to store more data, which was an excellent formula to speed up new developments (*Russell & Norvig, 2016*).

There are multiple milestone developments in the following years, some references were in 1993 when The Worldwide RoboCup Initiative was created with the goal of creating autonomous robots that could play soccer which promoted the development of robots and impressively displayed what robotics and AI were capable of. Also, in 1997 the Deep Blue chess supercomputer created by IBM defeated the world chess champion Gary Kasparov, marking the first time that a machine beat a human being in a competition of this discipline. As robotics services became increasingly interested in AI, commercial products such as iRobot were developed, selling millions of vacuum cleaners for domestic use, which allowed this technology to become more immersed in people's daily lives. Then by 2009, Google's first autonomous car appeared on a California highway (*Ertel, 2017b*) which meant a new paradigm break and new players became interested in investing in this technology. Another important milestone was the launch of voice assistants like Siri (Apple), Amazon (Alexa) and Google (Nest) because ordinary consumers began using conversational speech to talk on their phones in order to accomplish some task (*Kuzminykh, 2022*). In the following years everything accelerated exponentially and the milestones began to be more continuous until reaching the current moment in which we have advances that a while ago we would have thought were part of a science fiction plot.

The following graph from Our World in Data showcases the results of a study conducted in 2021 about the magnitude of technological evolution in recent years analyzed from different human capabilities. We can see that those capabilities have increased so strongly that they have been able to match the average level of human performance (*The Brief History of Artificial Intelligence: The World Has Changed Fast – What Might Be Next?, 2022*). The graph focuses on

the last two decades of AI development and analyzes 5 of the human perceptual capabilities, which are handwriting recognition, speech recognition, image recognition, reading comprehension and language understanding. It is especially interesting the exponential development of language comprehension, which had a very low performance by 2018, and by 2019 the performance drastically changed and the AI system was even able to surpass the performance of humans who performed the same test. However, it should be clarified that language understanding is not something that was born in 2018, it is instead a capability that has been laying its foundations since the 60's, but in recent years it has regained great interest and the developments have been exponential.

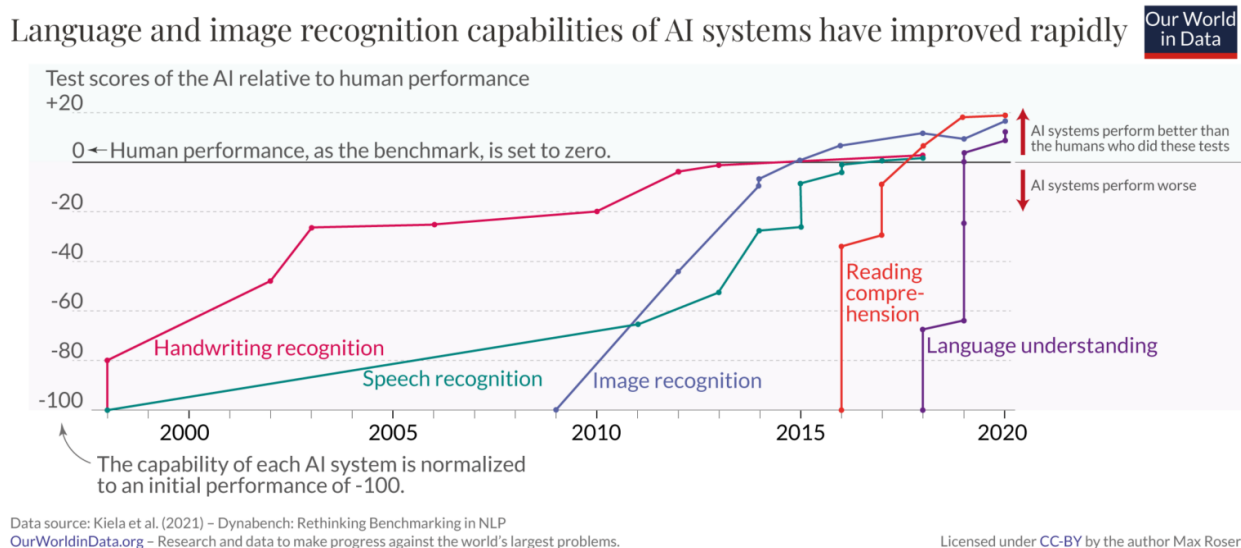


Figure 1. Language and image recognition capabilities of AI systems have improved rapidly.
Source: Our World in Data

All of this allows us to infer that AI is not something that magically arose in the last 10 years, but on the contrary, it is something that has been developing for approximately 80 years and that in recent years has generated more attention due to its great impact on daily life and the great opportunities it represents for industries and society. In addition, the development of AI has been also driven by the creation of new technologies, the explosive growth of datasets and the progress of computational load that is becoming faster and more efficient.

What is artificial intelligence?

In recent years, our everyday language has been impregnated with multiple technological terms that we now use interchangeably. However, given that these technologies are here to stay and to change the way we work, it is important to understand them in order to know how to take advantage of them and how they will impact our society.

AI can be defined as "*the study of how to make computers do things that at the moment people are better at*" (Rich and Knight, 1991) which refers that AI is trying to make computers capable of mimicking human behaviors, with the motivation that one day it will be achieved. To create Artificial Intelligence, two basic pillars are necessary: the algorithms and the data to train them (Tauli, 2019). When we talk about algorithms, we refer to the series of organized steps that describe the process that must be followed to solve a specific problem (Fadul, 2004). In summary the algorithms are the ones in charge of providing the instructions (logical thinking) to the machine, and the data is the input to train the machine when following the instructions.

Another definition provided from IBM states that artificial intelligence is the broader term used for the technique of making computer-based robots work and act like humans, which is used to predict, automate, and optimize tasks that have historically been performed by humans. From this perspective, it is considered that AI started as a statistical method for making decisions through computers, but now it refers to any type of technology that can reason, learn and make decisions, which are tasks that normally require human intelligence (IBM, 2023). Taking into account this definition, we could say that Artificial Intelligence uses algorithms to create machines that are able to learn from their own experience, reconfigure themselves to new scenarios and perform tasks in a similar way as we (humans) would do.

There are hundreds of cases of use of artificial intelligence in daily life, just to highlight a few, there are intelligent assistants that simulate tasks performed by humans, also mobility applications that predict traffic routes and recommend travel routes, and even stores like Amazon Go that debit from customer's personal accounts using facial recognition when making purchases, without the need for salespeople. In the case of the banking and insurance systems, through AI risks can be predicted and financial decisions can be made. Another example is object analysis and content segmentation or cross-selling through recommendations.

Within artificial intelligence there are two other massively used terms, which are forms of AI, these terms are machine learning and deep learning (Taulli, 2019). In NVIDIA's Figure 2 we can see how AI contains both terms and how over the years each has had its turning point in history.

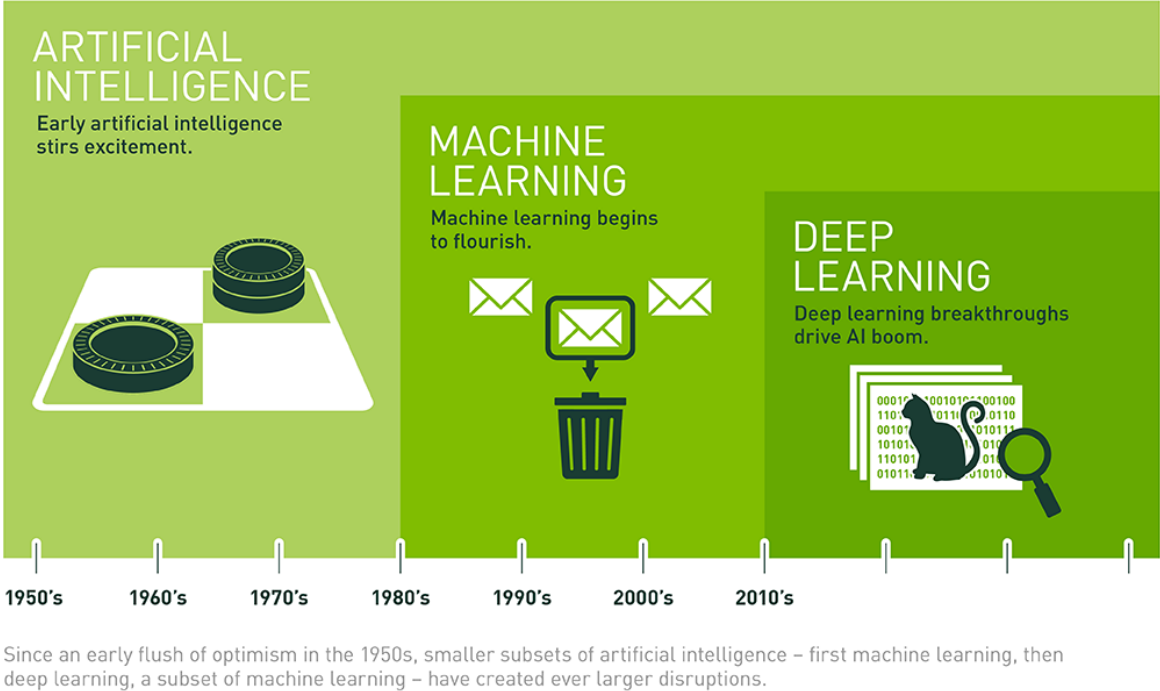


Figure 2. Composition of AI and development through the years. Source: NVIDIA

This graph shows that machine learning is a specific knowledge of AI that began to flourish from the 80s and deep learning, which is even more specific, began to flourish only in the 2010s, which shows that it only has a little more than 10 years in the industry. Below we will proceed to explain both terms in more detail to see how they are related and what they mean for the industry.

Machine learning

Machine learning first appeared in the 40s thanks to the first mathematical model of neural networks introduced by Walter Pitts and Warren McCulloch (Russell & Norvig, 2016). Machine learning was developed slowly and steadily over the years but it gained much more popularity in recent years thanks to big companies like Facebook and Google. Machine Learning (abbreviated as ML) is defined as the study of computer algorithms that improve automatically through experience (Mitchell, 1997), in this definition we can infer that the determining phrase is "learning through experience". Another definition of ML was proposed by Arthur Samuel in

1959 who says that "*Machine Learning is the field of study that gives computers the ability to learn without explicitly being programmed*" (Samuel, 1959) which shows that in this approach there is greater freedom for the AI to learn.

According to these definitions, what makes it special is that instead of being programmed to do specific things (such as checking temperature), ML allows the system to learn how to perform specific tasks on its own by deciphering patterns in the data, which increases the accuracy in the performance. This is quite interesting as programmers do not have to write highly detailed instructions on what to do, instead, instead these instructions should be able to give "free will" to the system to learn from the data that currently exists. For example, through these models, applications such as Uber can predict user demand for drivers, and Spotify can associate listener preferences with the preferences of other listeners who have similar musical tastes in order to recommend content to users (Dobler, 2022).

As Machine Learning has evolved, different approaches have been created which can be used depending on the nature of the problem to be solved. The following are the used approaches:

- Supervised learning: In this case the machines are trained using labeled data and, based on this data the machines can predict the outcome. A classic example where this method is used is image classification. For example, if we have a large database of animal images and each image uses labels that define what each photo represents (like shape, size, color), once the system is trained, it is able to identify which animal appears in each image. What can be limiting in this case is the need to have all the data labeled, as it can take a lot of time and effort (Taulli, 2019). This model is also considered supervised learning because a human is literally in charge of "teaching" the model what to do when labeling all the data (*What Is Generative AI?*, 2023).
- Unsupervised learning: In this model there is no categorization or tagging of data like in the supervised learning so the model requires a more advanced level of reasoning. The most common example in this case is clustering, which takes unlabeled data and uses algorithms to group similar items together (Taulli, 2019). The process usually starts with guesswork and then there are iterations of the calculations to get better results. One of the most common examples in marketing is customer segmentation, where a group that has

similar characteristics is likely to share interests and preferences, then these customers are grouped together and can receive more personalized recommendations.

- Reinforcement learning: This is a behavioral learning model since it works as a trial-and-error process, where the learning improves based on the positive or negative feedback (reinforcement). This feedback is done by the gain or loss from achieving or failing at something. After this, the system learns to behave in a given environment based on the actions and the results of the action (*Taulli, 2019*). In marketing, companies that sell to specific audiences can use real-time bidding platforms, A/B testing and automatic ad optimization which work with this learning model. For example, a company that runs ads in its marketplace through marketing and advertising platforms powered by unsupervised learning will be able to identify which audiences are more receptive to that advertising and these will be shown to them more outstanding and frequently (*9 Real-Life Examples of Reinforcement Learning, 2022*).

Deep learning

Deep learning (abbreviated as DL) is a relatively new subfield of machine learning, and it was around 2010 when it began to boom in the industry, for example, it was only in 2015 that Google started using it for its search engine (*NVIDIA, 2023*). Deep learning is defined as a type of system that allows processing large amounts of data to find relationships and patterns that we humans are often unable to detect (*Taulli, 2019*), which takes AI to a higher level of understanding.

The word "deep" refers to the number of hidden layers in a neural network, which provide much of the power for learning by mimicking how the human mind actually works. In neural network architecture, information received from the outside passes through several layers before being converted into a response, these layers help optimize and refine accuracy. A clear example is virtual assistants and chatbots that use deep learning to help understand the speech and language used by humans when interacting with them (*IBM, 2023b*). For example, in the case of animal identification from images, deep learning could give better results. Although machine learning can give good results, it also has its limitations if the assigned characteristics are misplaced or if they are not exceptions are not taken into account, the accuracy of the model would be affected.

If we go into a little more detail to understand how deep learning tries to mimic how the mind works, it is important to explain that the process of ingesting and processing data is done through a complex network based on the assignment of weights. This network is the artificial neural network, which is a function that includes units (also called neurons) and in which each unit has a value and a weight that determines its relative importance in the model (*Taulli, 2019*).

This neural network is composed of 3 elements which are the input layer, hidden layer and output layer. The input layer is the one in charge of receiving input data, from this layer it is passed the inputs to the first hidden layer and then the hidden layers perform math calculations at different levels, adapting their settings while receiving new information. One of the challenges when creating neural networks is deciding the number of hidden layers, as well as the number of neurons in each layer, because the higher the number, the heavier and more complex the model will be. For example, some cases where deep learning is commonly used are in computer vision, speech recognition, natural language processing and recommendation engines (*Amazon Web Services, Inc, 2023*).

With these definitions in mind (which are still very global), we can begin to understand that artificial intelligence is a huge science that requires a lot of technical knowledge not only in programming, but also in mathematics, statistics and even other human areas. But its complexity is also a reflection of its power, which is why AI represents a sea of opportunities where it can be applied and which will be exemplified in the following chapters of this thesis.

Conversational AI

According to IBM, conversational AI refers to technologies, such as chatbots or virtual agents, that users can talk to. Conversational AI uses big data, machine learning and natural language processing to help mimic human interactions, recognize voice and text inputs and translate their meanings into multiple languages (*IBM, 2023c*).

Since natural language processing is an important component of conversational AI, it is important to define it. First of all, when we speak of natural language, we are referring to the language that has evolved naturally as a means of communication between human beings, as opposed to the language that has been created, for example, for computers (*Cambridge dictionary, 2023*). Therefore, it merely refers to the normal language we humans use to communicate with each

other. So, when we specifically talk about natural language processing, it refers to a set of computational techniques used for the automatic analysis and representation of human languages, which is motivated by theory. NLP can be used for different tasks such as natural language translation, information retrieval, information extraction, text summarization, question answering, topic modeling, and sentiment analysis (Chowdhary, 2020). Also, according to IBM, NLP refers to a part of AI that focuses on giving computers the ability to understand text and spoken words in the same way as humans do. This is mainly possible through statistics, machine learning and deep learning models whereby computers can process human language either in the form of text or speech in order to "understand" its full meaning, which means even understanding the intentions and sentiments in it (IBM, 2023e). In simpler words we could say that NLP is a branch of AI focused on how computers can process (natural) language as humans do which is vital when building conversational AI systems.

Some of the benefits of conversational AI is that it is cost efficient because small and medium sized companies can use it instead of having customer service departments. Also it can increase customer involvement and the sales since chatbots can be more accessible in real time for customers and they are very scalable for interested parties (Emergen Research, 2023). Conversational AI is especially used by companies to develop chatbots, voice assistants and interactive voice response systems. Some use cases where they can be used in the business environment can be customer service, sales and marketing, data collection or even the Internet of Things (Galic, 2023).

According to Emergen Research, in terms of revenue, the following are the top companies in Conversational AI services for the year 2022.

Top Conversational AI Companies	Country	Revenue USD
Nuance Communications Inc (Microsoft Corp)	United States	1.4 Billion
Watson Assistant by IBM	United States	303.8 Million

Azure Bot by Microsoft	United States	143 Billion
Lex by Amazon	United States	21.3 Billion
Inbenta	United States	14.2 Million
Senseforth.ai	United States	11.3 Million
Avaamo Inc.	United States	9.7 Million

Table 1. Top 10 Companies in the Conversational Artificial Intelligence Industry by Revenue.

Source: Emergen Research

At the end of 2022, those were some of the companies that positioned themselves more strongly in the market for their economic performance and which were characterized by offering virtual assistants or chatbots to other companies as a B2B service. An interesting fact is that all the companies on the list are American and have been in the sector for several years, a good example is Nuance, the oldest and most consolidated company on the list, since it was created in 1992. On the other hand, there are examples that do not follow this trend, such as Senseforth.ai which was founded in 2017 and today is one of the leading providers of conversational AI services. Among its range of solutions are pre-built enterprise bots, which are used for customer care, sales, HR, IT support and knowledge management (*Emergen Research, 2023*).

Given that within conversational AI we find chatbots and virtual agents, we will proceed to define both terms in order to have a clearer vision of these since they represent different use opportunities.

Chatbots

According to IBM a Chatbot is defined as a computer program that uses artificial intelligence and natural language processing to be able to understand customer questions and then automate responses to those questions simulating human conversation (*IBM, 2023d*). Chatbots are commonly understood as a program that can be executed from a computer and its objective is to respond as an intelligent entity to the questions asked by users, in a similar way to how a conversation between humans works.

Commonly when talking about Chatbots, the term conversational AI appears, which can be easily confused but have different meanings. Where the difference arises is that chatbots are a type of conversational AI, but this does not mean that all conversational bots are conversational AI. For example, chatbots that are not based on conversational AI technology are those based on rules which use keywords or other language identifiers in order to trigger pre-written responses during the conversations (*Bishop, 2023*).

The first chatbot was invented in 1965 and its name was ELIZA. This chatbot was intended to give answers to users based on keywords, which means that the user couldn't really have human conversations where there was an understanding of what was being said, instead the chatbot could only have a basic conversation based on some predefined rules (*Taulli, 2019*). It is worth noting that at that time ELIZA had a focus as a psychoanalyst. The user could type in questions and ELIZA would recognize the keywords and then ask questions related to the topic (digging further into the whys) which indirectly helped the user better understand situations. Another step forward in the history of chatbots was the creation in 1995 of ALICE (Artificial Linguistic Internet Computer Entity), the first online chatbot inspired by ELIZA, which had the mission to recognize patterns in order to have conversations with people without the need to have a perception of the conversation as a whole (*Wallace, 2009*). However, ALICE did not have intelligent features and could not generate human-like answers in which emotions or personal attitudes were expressed (*Adamopoulou & Moussiades, 2020*).

During the following years, the technology continued to evolve and new functionalities were created which allowed chatbots to perform daily activities in people's lives. The development of AI chatbots took a big leap when smart personal voice assistants were built into phones or when home speakers were capable of understanding voice commands and were even able to drive home devices and deal with calendars and emails (*Adamopoulou & Moussiades, 2020*). A good example is when in 2010 Siri appeared, which was a breaking point because chatbots started to be used as a personal assistant and after this they began to become more intelligent, and another home assistants such as Alexa started to be introduced.

It should be noted that chatbots, in addition to imitating human interaction and amusing people, are useful in diverse fields such as education, business, e-commerce, entertainment and even health (*Shawar & Atwell, 2007*).

According to a study carried out in 2022, innovation in AI through its applications such as chatbots, has become an essential technology to improve the operational performance of organizations since it optimizes processes and achieves greater efficiency (*De Andrade & Tumelero, 2022*). Basically, the application of AI-powered chatbots contribute to the efficiency of the company thanks to the assertiveness, availability, effectiveness and speed of attention. Therefore from a business point of view, chatbots are a great opportunity for companies to put a layer of automation and self-service in front of customers in a friendly and familiar way, which helps to reduce costs and at the same time improve companies' customer service.

Finally, the chatbot market in recent years has become highly competitive due to the presence of many small and large players. This fragmentation is due to the relative ease of developing conversational bot applications using open-source frameworks, APIs, and development platforms. Because of this, numerous small-scale vendors have entered the market, contributing to its fragmentation. (*Mordor Intelligence, 2023*).

Virtual Assistant

A virtual assistant can be defined as a software program developed to understand the user's needs and has become inevitable in our daily lives (*Zhou, 2016*). A virtual assistant can be also understood as a software-based personal digital agent that helps people to perform daily activities (somewhat similar to a human personal assistant), such as setting clock alarms, scheduling an appointment, making calls or typing messages (*Joshi, 2018*). In addition to those proposed definitions, it is important to emphasize that virtual assistants are an evolution of AI-driven technology and are not just limited to texting and typing (*Gran, 2022*), which allows them to differentiate from chatbots.

Also, there is usually a lot of confusion between virtual assistants and chatbots, as we don't know if they are the same or different technologies. According to Taulli, both technologies have a lot in common, for example, they both use NLP to interpret language and perform tasks. But in the end they are different since chatbots are mainly focused on companies and are developed with the aim of fulfilling customer service and sales functions. In contrast, virtual assistants are designed to help everyone (common users) in their daily activities (*Taulli, 2019*).

The origins of virtual assistants go back to the 1950s when a group of academics at a laboratory built the first voice assistant for hands-free dialing, also called "Audrey". This was the starting point of VA and over the years further developments were made. In the early 2000s, the history of the voice revolution reached a decisive turning point: the Watson question-and-answer system competed with the best champions of the popular Jeopardy! quiz show and it was able to beat them in total points. Watson thus, at that moment, became the first system capable of processing natural language as quickly and reliable as a human being. This victory laid the groundwork for the next series of intelligent digital products that could be controlled by voice. And so, two months after Watson's success, Apple introduced Siri to the world, which has been a vital development since the supply of conversational assistants increased exponentially, including new capabilities in each release. For example, the following years saw the emergence of important assistants such as Google Assistant (2012), Cortana (2013), Amazon Alexa (2014), Google Home (2016) and Bixby (2017) (*Kuzminykh, 2022*).

Therefore, in general terms, there are two possible types of input for a VA, which are a voice interface (such as Apple's Siri) or a text interface (such as Google Assistant). A key point of virtual assistants is that the end user can speak using their natural language, rather than having to use specific commands or an adjusted computer language, which makes the experience much easier for the end users. Also, the user interface for these services can be accessed from the user's device, whether it is a smartphone or a specific device so that they can control objects, answer questions and even make recommendations for themselves (*European Commission, 2018*).

AI in the digital marketing age

Digital marketing

Digital marketing first appeared as a term in the 1990s, which is evidence that it was a truly new term. But it appeared in very different times than today, since the internet was just getting structured and was mainly static and without communities by that time. In fact, the first banner advertising was published in 1993 and the first crawler was created in 1994 which marked the starting point for SEO strategies (*Kingsnorth, 2019*). After Google was born in 1998 (*Hall & Hosch, 2023*), the new and modern era of the internet started which meant a boost for digital marketing strategies since services like digital mail and MySpace appeared. With the appearance

of new social networks and the development and propagation of the internet, digital marketing evolved over the following years to become today one of the most important activities when structuring company strategies.

According to Kotler and Armstrong, digital marketing can be defined as a form of direct marketing in which sellers or companies interact with consumers through interactive technologies such as email, websites, forums, online newsgroups, interactive television, mobile communications, etc. (*Kotler and Armstrong, 2009*). Kotler, which is the father of modern marketing, also defines it as a set of activities carried out on the Internet by a company or person in order to attract new businesses and develop a brand identity (*Kotler et al., 2019*). Digital marketing is an approach in which companies broaden their focus from the traditional mediums of communications and include the ones powered by digital technologies in order to promote the brand and interact with customers. This allows companies to communicate in a way that can be more massive and effective with the plus that allows businesses to gather huge amounts of information to better focus their efforts.

The following table shows traditional and basic models that have been used through the last years in order to structure companies' digital marketing strategies and which are still valid nowadays. This summary helps to understand basic concepts that are commonly used in the marketing context and which allow companies to build and focus their marketing strategies and activities.

Model	Description
The 4P's	Establishes the strategy and represents the 4 pillars of marketing, which are Product to sell, Price to sell, Place as a location for sale, and Promotion as the advertising channel. The 4P's model is a tool to build a strategy from the company perspective (<i>Kotler and Keller 2006</i>).
The 4C's	It's an approach useful to structuring a marketing strategy from the customer's perspective. It stands for consumer, cost, convenience and communication. Consumer refers to the worth perceived of the product. Cost refers to the affordability and value of the product. Convenience refers to how easy

	and barrier-free the purchase is. Communication refers to the ability to generate interest and build a relationship with the clients (<i>Lauterborn 1990</i>).
Porter's five forces	It refers to competitive positioning and includes 5 forces that may affect a company, which are: Threats of new entrants, Bargaining power of suppliers, Threat of substitute products or services, Bargaining power of buyers and Intensity of competitive rivalry. When a company has fewer threats, its competitive position in the market will be better.
Brand positioning mapping	It is a conceptual map that has an X axis and a Y axis, and allows us to see how the company is facing the competition regarding some specific characteristics defined by the company. A classic example of variables that can be used is price (low and high) and quality (low and high).
Customer lifetime value	It allows magnifying the true value of the customer since it allows calculating the benefit that can be obtained from a customer throughout their entire customer lifecycle. Basically it is an operation where all the expenses related to the acquisition are subtracted from the income generated by a client.
Segmentation, targeting and positioning	It focuses on understanding the customer, for which similarities in geography, demography, behaviors, and psychographic factors must be identified, which will allow them to be grouped by segments to better guide marketing strategies.
Boston Consulting Group matrix	It focuses on the categorization of products taking into account their market share and market growth. The categories are stars, dairy cows, dogs, and question marks. Stars refers to products with high share and growth. In the case of dogs, they have low market share and low growth. Instead dairy cows have a low growth and question marks have low market share.

Table 2. Most common marketing strategy models. (*Kingsnorth, 2019*)

In addition to the one presented, there are more terms and methodologies used by marketing departments but these are the basic ones which will be mentioned through the paper.

As we have seen, the internet boom is what has allowed the development of digital marketing and through time the Internet has changed the way consumers interact with businesses, which has transformed the whole marketing industry. This has turned many traditional strategies, techniques and structures obsolete and unsustainable for current businesses because they are not applicable any more to the new reality (*Edelman, 2010*). Therefore, digital marketing goes hand in hand with technology and the internet and for this very reason it has been inevitable that the rise of artificial intelligence will also permeate this sector.

In a broad sense, digital marketing involves specific activities such as SEO, paid search, display advertising, social media, user experience, CRM and retention, personalization, customer service, content strategy and analytics and reporting (*Kingsnorth, 2019*); and all those areas can be approached by AI since personalization and data collection are useful in almost any case.

In the following section we will dig deeper into how marketing departments can take advantage of AI in their day to day activities. It is important to keep in mind that even if it represents huge opportunities for companies, it also includes challenges, for example digital marketing strategies have to stand out in a digital world oversaturated by companies competing with their own campaigns.

Potential application of AI in digital marketing activities

As we have learned through the paper, Artificial intelligence has changed the way customers interact with brands and services. Nowadays, AI enables companies to use human capabilities and perform human cognitive tasks in a more efficient way which has the potential to elevate the company's offerings and services according to the real needs of the customers.

It is worth noting that applications of AI are effective for both B2C and B2B companies (*Van Esch & Black, 2021*). According to Nair & Gupta, the following are applications of AI in digital marketing activities.

Potential applications	Description
AI smart content curation and content creation	For businesses it is more effective and less demanding to create, organize and share content for a target audience, using tools powered by AI like Jasper, Wordsmith and Dall-E, etc. Also, with the data gathered, the content can be better customized according to the user preferences which can increase the engagement and conversions. For example, with the information collected from users based on their browsing or previous actions on a website or app, new products or services can be recommended in order to offer users content that is really relevant to them.
Voice search	Voice searches is a trend that has grown in recent years due to the use of virtual assistants. Companies that want to be updated with the new trends and make the life of their customers easier do not have to create their own voice system, on the contrary, they can use the systems already developed by large companies such as Amazon, Apple or Google. This is done with the aim of increasing traffic and commercial leads. To achieve this, companies must ensure that their websites incorporate long-tail keywords and mimic people's natural speech patterns.
Programmatic media buying	It refers to the automated purchase of advertising spaces. Here we can talk about Sell-side platform, Demand-side platform and Ad exchanger. These are platforms that allow publishers, advertisers and agencies to buy and sell ad impressions and ad spaces. With this automation companies can be more efficient since they don't have to invest too much time in the negotiation because it can be automated according to the settings chosen.
Propensity modeling	It is an approach in which users are segmented according to the probability of performing certain actions in the customer journey. This is useful since companies can generate greater retention and conversion of users and therefore improve their ROI. For these models it is required to analyze different data which can come from historical data, third parties or

	<p>second parties, which mainly help to define the conversion propensity of the users.</p>
Predictive analytics	<p>Thanks to AI, companies can find meaningful patterns in data which once they are analyzed, they are useful for predicting user's behaviors. These behaviors include a user's probability of conversion, the price at which users might purchase products and services, and the probability of returning customers.</p> <p>In digital marketing, this could be used to improve the knowledge of users in order to offer them something that they really want. In addition, it allows users to identify triggers for decisions and it helps optimize the frequency of content or notifications sent. Another case use can be in deciding which influencers may be the best candidates based on the probability of success according to the data collected.</p>
Lead scoring	<p>Artificial intelligence can be useful when assigning a score to customers according to the information that the company has about them and their level of engagement with the brand. The higher this score, the higher their chance of conversion.</p> <p><i>Nair & Gupta</i> propose 3 models to assign these scores. The demographic model is based on demographic information of certain segments. The second is the model focused on the online behavior of users in their conversion process. And the third is the model that focuses on user engagement with the brand. Those models can be used to better understand how to score users according to certain segments.</p>
Ad targeting	<p>Since companies can collect easier data from customers, companies can better target ads for customers and it can be personalized in real-time. Also AI has the potential to reduce the time and effort invested in ads campaigns since it suggests setting when the person is adjusting the campaigns on the platform.</p> <p>Through pixels installed in the code of the websites, companies can track the behavior of</p>

	<p>users and store the data. This allows them to better target the ads and personalize the messages shown to the users. Also can be useful when expanding the audience reach when suggesting new attributes.</p>
Dynamic pricing	<p>Allows companies to better target their prices according to the threshold of each user. Users that will pay the full price without the need to get a discount will get the full price. But users that are primarily motivated by discounts or lower prices will have the chance to get discounts. This technique can be useful to increase sales and maximize profits. Also this can be applied according to the demand and supply of products or services, and example can be the pricing model of Uber.</p>
Web and app personalization	<p>Websites and apps can be personalized according to the characteristics of each user which can be achieved by using the behavior history or the personal data of users. For example if customers are logged in their personal account, through AI the company can identify their behaviors and habits and relate it to the information already registered. Then the company can decide what kind of content and options to show in order to personalize the experience, increase their metrics and meet their objectives.</p>
Chatbots	<p>Chatbots powered by AI can automate customer service in order to answer common questions, solve issues and facilitate communication with users.</p> <p>Some cases in which chatbots can be useful in marketing are in welcoming customers, answering frequently asked questions and getting general information of leads which can include contact information and info about their needs. Also it can be helpful to schedule calls or appointments and meetings.</p>
Retargeting	<p>Since many users will not immediately convert after the first click in ads, companies may use techniques as retargeting. When retargeting is powered by AI, the ads can</p>

	adapt according to the actions of the users, for example if they abandoned the website exactly in the shopping cart, companies can focus on offering discounts to motivate them to finalize their purchase or can send them reminders with the products added in the shopping cart in order to finalize their purchase.
Dynamic emails	Through mailing platforms powered by AI the emails can be better targeted according to the characteristics and propensity of the users to convert. With these platforms emails can be sent in an automatic way according to those characteristics.
Marketing automation	Companies can use tools powered by AI in order to automate their marketing activities. Some tools commonly used are Hubspot, Marketo, Pardot, etc. These apps help in gathering data, optimizing processes, personalizing campaigns and tracking the whole customer life cycle which helps to release time of the marketing departments and which can be invested in more strategic tasks.

Table 3. Potential application of AI in digital marketing activities. Source: (Nair & Gupta, 2021)

Strategic approach of AI in marketing

The paper “*A strategic framework for artificial intelligence in marketing*” proposes an interesting approach in which artificial intelligence is divided into 3 types of intelligences and each one has a different degree of strategic and emotional thinking. This approach is an approximation about how natural human intelligence works. For example, in companies there are people who perform better for operational tasks, or there are others who are better at analyzing information and making strategic decisions or on the other hand, there are people with excellent soft skills which allow them to read the emotions of others and influence their behavior. Therefore, if there is a strategic distribution, each person should work in the area in which their skills are most related.

Due to this reasoning, *Huang and Rust* proposed a strategic planning framework for AI which is divided into three stages that form a circular process, in which each stage works as an input of the following stage. This proposal allows for a more strategic division and for the process to be in continuous iteration and improvement.

As we discussed previously, AI is an area of computer science that tries to mimic human intelligence in a natural way. In this sense, the paper written by *Huang and Rust* proposes that AI can be designed with the focus of having multiple intelligences that can be applied according to the tasks to be performed, just like how the mind of humans work. The paper proposes 3 intelligences which can be applied individually or at the same time, according to the desired output to be achieved (*Huang & Rust, 2020*):

- Mechanical AI, is a consistent intelligence that focuses on automating the execution of repetitive and routine tasks. This intelligence involves a lower level of creativity and judgment by the machine. It also has a solid ability to collect and integrate data from different sources and its input would be essential for the other levels of intelligence.
- Thinking AI is the intelligence used to process data in order to be able to make decisions, conclusions or even personalizing experiences. This intelligence requires a higher level of strategic thinking and can be useful for creating better interaction services that increase the value for customers.
- Feeling AI, is an intelligence that focuses on two-way interactions that involve humans or that demands to analyze feelings and emotions of the human being. Due to its capacity to recognize and respond to emotions it is able to personalize relationships in a deeper sense which is the perfect match for customer understanding activities. One of the advantages is that it allows companies to capture insights in a cost efficient manner and with a bigger scale.

Additionally to this, the paper also proposes three stages for the strategic planning framework, which are used sequentially (*Huang & Rust, 2020*):

- Marketing research: Refers to the action of collecting data to conduct industry, competitor, and customer analysis in order to better understand the market and the customers needs and desires. At this stage it is vital to get a huge amount of information and good quality data since it would be the inputs for the following stages.
- Marketing strategy: When talking about strategy, this paper focuses on the three sub steps which are segmentation, targeting and business positioning strategies. Segmentation refers to dividing the market into chunks, in which each chunk is differentiated by having customers with unique needs and desires. On the other hand, targeting is the ability to choose the correct segment in which the company should focus its marketing actions, for which it is necessary a more advanced domain to be able to select the segment. Finally, positioning is responsible for uniting the attributes of the product and the benefits it offers to customers with the aim of finding a competitively advantageous position in the minds of customers, which demands speaking to the emotions of customers.
- Marketing actions: Refers to specific actions that are performed with the aim of executing the strategy defined in the previous step. The actions can be related with standardization, personalization and relationalization activities. When talking about relationalization, it stands for the act of personalizing relationships.

In the following figure it is summarized the relation between the marketing stages and the levels of intelligence. We can see that each type of activity in each marketing stage is connected to a level of intelligence that can be used. The fact of defining which intelligence should be applied depends on the purpose it is gonna be used for.

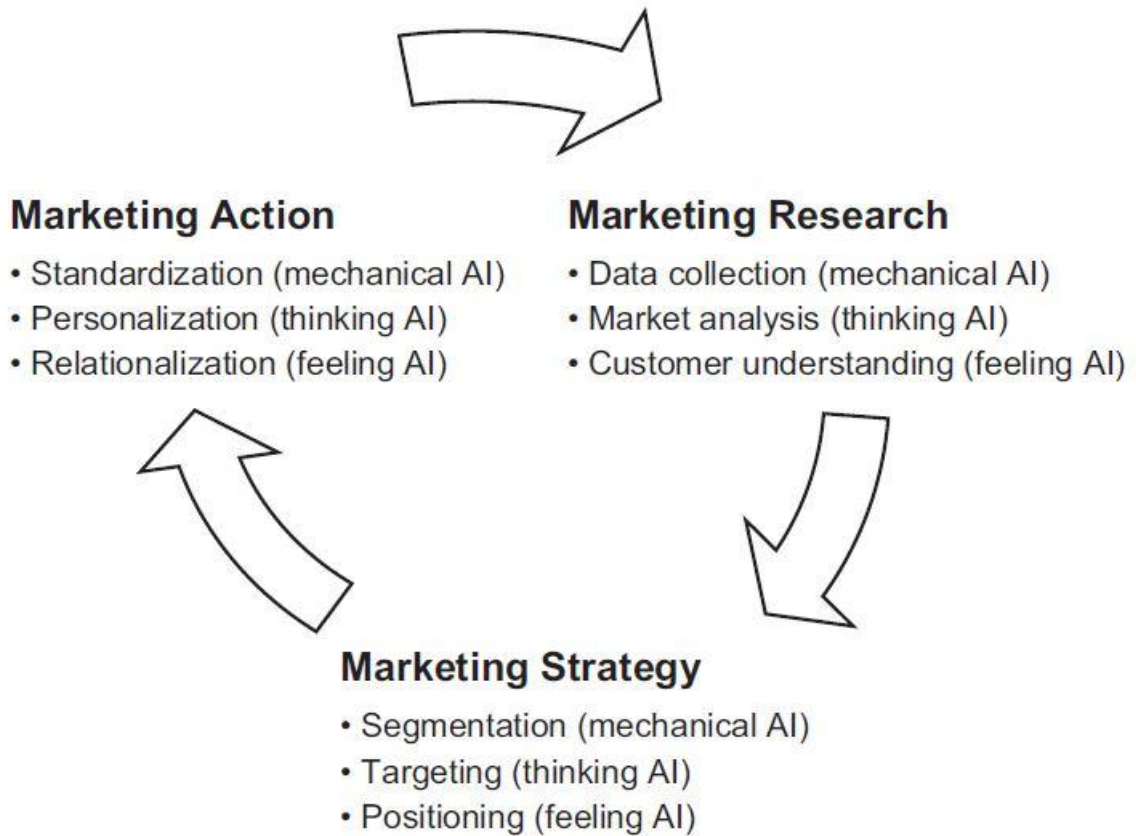


Figure 3. Marketing stages and levels of AI intelligence. Source: (Huang & Rust, 2020)

According to [Figure 3](#). We can see that each intelligence has applications in each stage, which we will briefly expose in the following paragraphs (Huang & Rust, 2020).

Mechanical AI in the case of market research can be useful for repetitive tasks that can be automated, such as obtaining tracking data and monitoring user behavior. In marketing strategy, Machine AI is used to identify preference patterns based on customer information so that the system can segment the user base. Finally, in the marketing actions stage, this intelligence can be applied for standardization activities thanks to its level of consistency. Other examples of use cases might be robots that help package, distribute, and deliver products or services.

On the other hand, AI Thinking is at a higher level of intelligence. In marketing research, it can be useful for market analysis purposes; For example, it can help identify competitors or competitive advantages of the product with the data already collected. In the case of marketing strategy, AI Thinking can be used to recommend the best target segments that the marketing

department can approach to focus its marketing actions, this requires system autonomy to make decisions. Furthermore, by being able to recognize patterns from data, it can be used in marketing actions for personalization purposes. A good example is the recommendation system used by large technology companies such as Netflix to recommend content, products or services according to the personality of each user.

Finally, AI Feeling is much more specific because it is necessary to integrate specific data from each individual and their context, for this reason its main problem may be obtaining the data. For example, this intelligence can be used to establish conversations about products with users, but it can also be used for more advanced cases such as identifying the emotional state of the customer based on their facial expressions, which can be useful to generate more empathy with them. . A typical example is customer satisfaction services where systems can recognize and respond to customer feelings. The differentiating factor of Feeling AI is that it allows marketing activities to be adapted in real time based on the reactions that users have.

In order to dig deeper in the use cases, in the following graph it is exposed some examples of how the different intelligences can be approached from the 4Ps and 4Cs marketing framework. As explained before, the 4Ps and 4Cs are two commonly used theories that are applied in order to structure successful marketing campaigns. The 4Cs is more focused on the side of the user which combined with the 4Ps give a more integral approach to the marketing strategies.

	Current practice	Emerging practice	Future research
		Marketing research	
Data collection	<ul style="list-style-type: none"> Scattered surveys, experiments, interviews, panels, sales (e.g., scanner data), and syndicated data (e.g., TNS) Semi-structured behavioral big data Data are delayed, out of context, and ad hoc 	<ul style="list-style-type: none"> Integrated multiple sources of data collected automatically by mechanical AI (e.g., IoT, sensors, and wearables) Unstructured behavioral, opinion, and sentiment data Data are real-time, during a customer's experience, and in context 	How would privacy and data security affect marketing's use of AI for data collection?
Market analysis	<ul style="list-style-type: none"> Statistical analysis for structured data Theory-driven hypothesis testing 	<ul style="list-style-type: none"> Big data analytics for unstructured data Data-driven exploration 	How to balance data- and theory-driven market analysis?
Customer understanding	<ul style="list-style-type: none"> Qualitative focus groups for customer insights Observe customer behavior, choice, and reactions to marketing actions Psychometrics for inferring customer thinking and feeling 	<ul style="list-style-type: none"> Feeling analytics for customer insights with scale Understand customers in their own words and expression Direct insights from customer interactions with conversational AI Deep learning and NLP for contextual customer thinking and feeling 	What algorithms and models are needed for feeling AI?
Segmentation	<ul style="list-style-type: none"> Segment based on a few variables a priori Aggregate customer equity model (e.g., acquisition rate, churn rate) 	<ul style="list-style-type: none"> Discover novel segments based on unlimited number of variables Individual customer lifetime value model (i.e., segmentation of one) 	How best to visualize segmentation?
Targeting	<ul style="list-style-type: none"> Target segments Trade off target segment size and effectiveness 	<ul style="list-style-type: none"> Target individuals more Flexible targeting and retargeting (aggregate and disaggregate) 	What happens when the customer is AI?
Positioning	<ul style="list-style-type: none"> Human judgment and intuition 	<ul style="list-style-type: none"> AI-based optimization of positioning 	How should marketers and AI collaborate, to resonate with customers?
		Marketing action (4Ps/4Cs)	
Product/Consumer	<ul style="list-style-type: none"> Conjoint analysis decides attribute levels Market testing Aggregate sales as customer adoption Product life cycle 	<ul style="list-style-type: none"> Mechanical AI automates service and product process Thinking AI for product innovation Feeling AI for service interaction Customer value 	How is AI best used in developing new products to meet customer needs and wants?
Price/Cost	<ul style="list-style-type: none"> Price menu on websites or apps Segment-based price discrimination Humans handle price negotiations 	<ul style="list-style-type: none"> Mechanical AI automates price setting and updating Thinking AI personalizes pricing Feeling AI negotiates and bids prices 	How to manage AI-based price negotiation?
Place/Convenience	<ul style="list-style-type: none"> Self-service/physical distribution Unskilled labor provides homogeneous shopping assistance Frontline employees' variable emotional labor 	<ul style="list-style-type: none"> Mechanical AI automates distribution, logistics, and delivery Thinking AI personalizes shopping Feeling AI interacts with customers 	How to manage customer disengagement due to place automation?
Promotion/Communication	<ul style="list-style-type: none"> Skilled labor-intensive media planning Relying on creative executives' talent Delayed response to customer reactions to promotions 	<ul style="list-style-type: none"> Mechanical AI automates promotional executions and media planning Thinking AI for content creativity Feeling AI for emotion sensing and reaction 	How to use AI to build strong relational bonds?

Figure 4. Use cases of the three AI intelligences in various areas of marketing organized by 4Ps/4Cs. Source: (Huang & Rust, 2020)

In the case of the product/consumer, artificial intelligence can be used to automate processes such as monitoring user behavior, with the aim of personalizing products according to their preferences. Another case is to use AI to maintain real-time conversations with customers about products or services and learn their perceptions about them. It can also be useful to identify which attributes would be most valuable to include in a product, which helps in the innovation processes of the companies.

In the case of price/cost, AI can be very useful in setting prices and managing payment methods. For example, Thinking AI helps to understand the level of economic readiness that certain customers have, which helps to set the most profitable prices for the company and allows them to be dynamically adjusted in real time according to reactions. Since Feeling AI allows enterprises to have conversations with customers, this can be used to negotiate prices with them so that both parties feel like they are winning in the process.

For example, in the case of place/convenience, machine AI can be used to automate and facilitate user access to the products or services offered by the company. On the other hand, Thinking and Feeling AI can be used to personalize those interactions in order to have greater customer satisfaction.

Lastly, for promotion/communication, tasks like segmentation, scheduling, publishing, and content promotion can be automated with machine AI. Additionally, content can be adapted and personalized according to each customer's preferences through Thinking AI. Finally, content performance can be tracked and adjusted according to user reactions using Feeling AI.

However, these intelligences have limitations. For example, when capturing data, a lot of context information is lost, which is vital for emotional analysis. Also, when collecting all the necessary data to train the models, you can end up invading the privacy of the users. Also, the results of the AI so far are not 100% reliable as the systems used do not have cognitive reasoning, which can lead to errors and affect the confidence of the AI and marketers. In addition, at this point the AI does not have the capacity to have a neutral position, so the results strongly depend on the input and instructions that it receives. Finally, by the time this paper was written there were no machines that could adequately react to people's emotions, so by now we don't even know if customers are actually ready to interact with machines that have this ability to react emotionally in a genuine way.

THE CHATGPT OUTBREAK

What is ChatGPT?

OpenAI defines its ChatGPT product as a model that interacts conversationally, which is capable of answering questions and make new ones to continue the conversation, it is also able of admitting its mistakes, and it is even capable of rejecting inappropriate requests when they are asked by users (*OpenAI, 2023*). By now it sounds like a chatbot that is more autonomous because it is even able to question the prompts that were made. Then, when asking to ChatGPT, it defines itself as an AI language model based on the Generative Pre-trained Transformer architecture, which is built with more than 175 billion parameters. The main goal of this model is to generate human-like text responses in a conversational manner. This model is characterized by the fact that it can understand and generate text in a wide variety of languages and which has been trained with a large amount of data obtained from the Internet” (*ChatGPT, 2023*). This definition is more technical and allows us to begin to magnify the magnitude of knowledge and complexity of the model.

ChatGPT is an artificial intelligence chatbot developed by OpenAI, an American startup. OpenAI was co-founded in 2015 by Elon Musk and Sam Altman and has been supported by huge investors such as Microsoft (*Browne, 2023*). ChatGPT is a free chatbot that by today has the ability to generate answers to most of the questions that users choose to ask for. Upon its public launch in November 2022, it was quickly hailed as the best AI chatbot of all time and managed to get over a million users to sign up in the first five days of its launch (*McKinsey & Company, 2023*). Also, according to a study by UBS it has become the fastest growing consumer app in history, surpassing apps like Instagram and TikTok.

It is common to think that ChatGPT is something that magically appeared at the end of 2022, but in reality, it is something in which OpenAI has been working on for years. In June 2018, OpenAI launched its first iteration of the GPT model, being the base architecture of what we know today as ChatGPT, and this base allowed it to demonstrate the power of unsupervised learning (*Marr, 2023*). The following table specifies the most important milestones in the history of ChatGPT and allows us to understand its magnitude.

Version	Release year	Number of training parameters	Main feature
GPT-1	2018	117 million	Language comprehension tasks
GPT-2	2019	1.5 billion	Text generation skills and production of coherent multi-paragraph text.
GPT-3	2020	175 billion	Advanced text generation capabilities, such as writing e-mails and articles, and even creating poetry and programming code.
GPT-4	2023	170 trillion	Able to track user intent, generates fewer offensive or dangerous results. It offers greater precision and maneuverability. Also, it allows you to search on the Internet in real time.

Table 4. A Short History Of ChatGPT. Source: Forbes. (Marr, 2023b)

When we talk about parameters, we refer to the values in the neural network that are optimized during training. If there are more parameters the model will be able to process and store more

information which makes it also more complex. It is worth noting that the more complex the model, the more computationally expensive it will be to be run because the machine will need more capacity and time (*Marr, 2023*).

To better understand what ChatGPT is, it is important to understand how the model behind it works. First at all, when we talk about Generative Pre-trained Transformer, it refers to a type of AI and it stands for 3 different concepts:

- Generative modeling: Refers to the model's ability to predict and create the best possible response based on its understanding of the language (*Amazon Web Services, Inc., 2023b*).
- Pre-training: It is the technique of training the model with large amounts of data so it can be able to identify patterns and understand how the natural language actually works. Then when this is done, it can be configured to perform specific tasks (*Plevris et al., 2023*).
- Transformers: It is a deep learning architecture model that makes use of self-attention techniques in which different information inputs are processed at the same time. To achieve this successfully, a weighting system is used so the model is able to give more relevance to those inputs with greater weight. This model is useful as it allows to capture more text and generate longer text streams (*Amazon Web Services, Inc., 2023b*).

Also, it is important to highlight that ChatGPT is also considered a large language model (LLM). According to Gartner, a large language model can be defined as a specialized type of artificial intelligence that has been trained on large amounts of text in order to understand existing content and which is capable of generating original and new content (*Gartner, 2023*). As previously explained, the language model used by ChatGPT has been trained with massive information available on the Internet from which the model is able to calculate which sequences of words are more likely to occur than others, taking into account the previous words in the sequence (*Gregersen, 2023*).

Also, Gartner lists some capabilities that ChatGPT can perform such as generating and improving prose and code development, summarizing text and classifying content, as well as answering questions and making translations of different languages (*McCartney, 2023*). Another example are early adopters of ChatGPT, which enthusiastically used the chatbot to produce computer code, college-level essays, poems, and even jokes. However, people who create content

for a living, including copywriters or creatives, or even tenured professors, are concerned that they may be replaced or that they will not be valuable anymore for the industry (*McKinsey & Company, 2023*). This may have a certain degree of truth, although the focus that OpenAI has tried to give to ChatGPT is to become a support and complement tool in people's tasks, with the aim of making their lives easier so that they can add value in new ways.

In different articles Forbes has exposed how ChatGPT can have great impacts on different industries. For example, in business it can automate tasks through chatbots, in education it can be customized to create tutoring systems for students, in entertainment it can help create scripts for movies or games, and even in health, it can help in the clinical decision making or interpretation of clinical literature (*Marr, 2023*).

The user interface is quite clean and clear, in which the user on the left has the text box that allows you to start a chat and which occupies 80% of the screen. On the left side, the user has a simple menu with the option to create new chats so that they are divided according to their function, there is also the option to upgrade to ChatGPT Plus and finally there is a configuration option. In the text box the user can write in a natural way as he would write to a friend or an assistant through chat and there is no character limit or an established structure.

Although ChatGPT works with natural language, there are some techniques to obtain better results, such as using role play in order to simulate situations or characters within the conversation or sticking to prompt structures to make it more clear. Also, ChatGPT has the ability to deliver results in different text structures such as tables, mental maps, outlines, json, csv, xls and markdown. This makes it more flexible for the users since it is easier to understand the information that is provided (*Alarcón, 2023*).

ChatGPT also makes use of hyperparameters, which can be useful when it comes to customizing the results it returns. Among the hyperparameters used are the numbers or responses expected, the temperature of randomness and the cumulative probability distribution, which are not recommended to use at the same time to not confuse the chatbot (*Alarcón, 2023*). They are explained in more detail below:

- n: refers to the number of responses expected in the response returned by chatGPT.
- Temperature: it is a parameter that controls the randomness of the answers, at a higher temperature greater creativity is expected and at a lower temperature the answer will be more standard (*D, 2023*).
- Top_p: it is a way of controlling the degree of concentration of the probability distribution of the answers, which means that it is the degree in which the system selects the most probable words to continue the thread. For example, the closer to 1, the more diverse and random the response will be, and the further from 1, the more conservative the response will be (*D, 2023*).

ChatGPT Plus

ChatGPT Plus is the paid version of ChatGPT, which currently has a fixed cost of €20 per month. In broad terms, OpenAI mentions on its website 3 great benefits of this paid version, among which are having general access to the service with priority responses even in times of high flow, also a much faster response time, and additionally, this version provides priority access to new features or improvements to the users (*OpenAI, 2023*).

At first glance, it may not seem like a very attractive proposition since the free functionality works quite well. However, if we go into detail, we can notice that this paid version represents greater opportunities, since it gives the right to directly use the GPT-4 model, which is the most recent and powerful (*Plevris et al., 2023*). As shown in [Table 2](#), this model is trained with many more parameters, which mainly increases its capacity and precision in answers and at the same time is capable of having a more comprehensive understanding of the conversations.

According to OpenAI, the difference between GPT-3.5 and GPT-4 can be subtle in the case of casual conversation. A real difference can be seen when the task to be carried out increases in complexity, and that is when GPT-4 presents itself as a more reliable and creative model, capable of handling more nuanced instructions than GPT-3.5 (*OpenAI, 2023*).

The following image displays different official tests that are currently carried out to assess the capabilities of humans in different areas. In this case, these tests were performed by ChatGPT3.5

and ChatGPT4, which allows evaluating in which areas these chatbots perform better, but also allows comparing the performance of both technologies, in order to demonstrate their improvements. It is worth clarifying that this experiment was carried out by OpenAI, in which they used the most recent versions of exams that were initially designed for humans, and for which they did not perform any specific ChatGPT training.

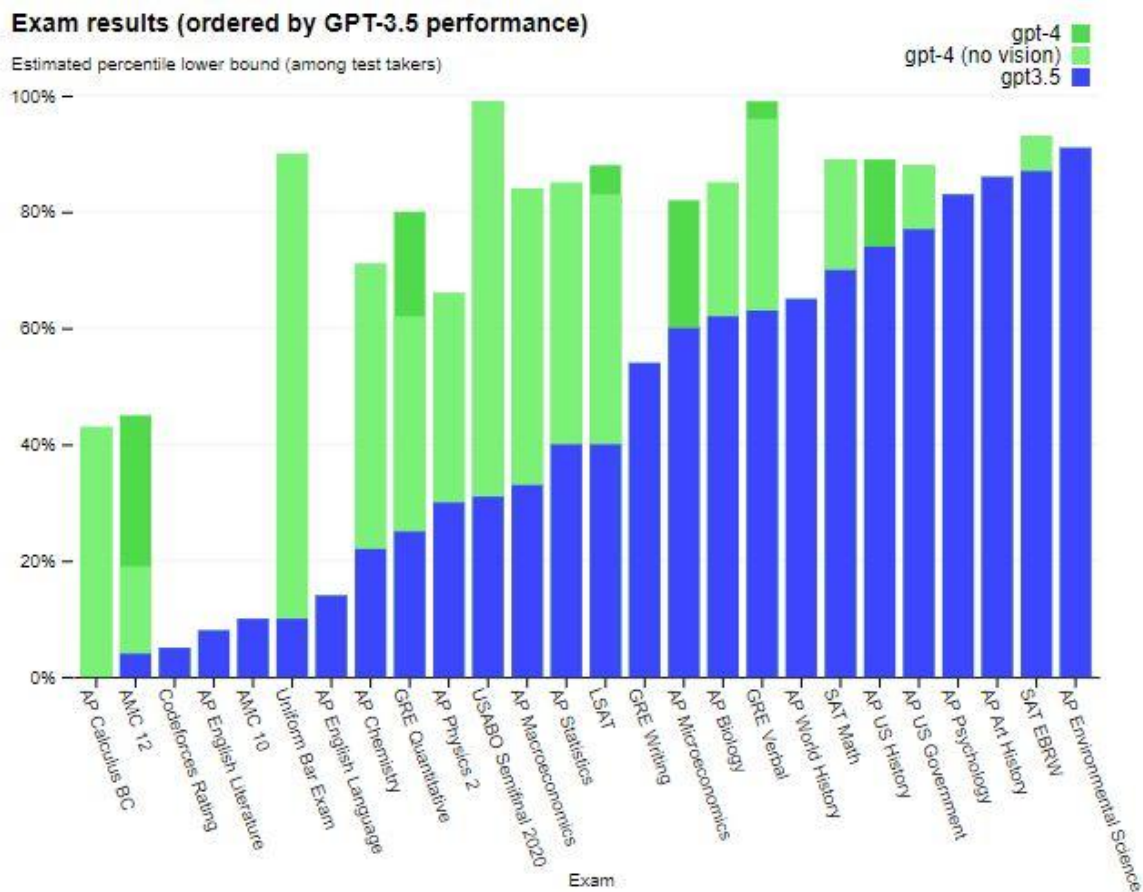


Figure 5. Exam results performed by ChatGPT3.5 and ChatGPT4

As can be seen in [Figure 5](#), both versions of ChatGPT have the same performance in tests such as AP history, AP psychology, AP world history, GRE writing, AMC 10, AMC 12, English literature and Codeforces rating. In the rest of the tests, the ChatGPT 4 performance was always better than ChatGPT3.5 which allows us to measure its power since in 17 of 26 tests it is capable of surpassing itself with this new version. It should be noted that these are standardized exams that are done by states or schools to measure people's knowledge, and in the specific case of the ChatGPT experiment, this Chatbot was not trained.

In addition to the direct access to ChatGPT4, ChatGPT plus also allows (by June 2023) access to two of ChatGPT's beta features, which are Browser with Bing and Plugins and which open up a world of possibilities that expand the capacity of this tool.

Browser with Bing means the ability to browse in real time for up-to-date information from the internet. This means a great advantage compared to the free version of ChatGPT, since the training process of the free version was made based on the knowledge and information available until September 2021 (*Plevris et al., 2023*). This means that the normal version is unable to effectively respond to queries that require data generated after this date, since it does not have the context to respond.

The other functionality is the possibility to install Plugins designed specifically for these language models in order to broaden the range of cases in which ChatGPT can be used. Some of the more notable plugins include Expedia, Instacart, KAYAK, Shopify, Slack, Wolfram, and Zapier (*OpenAI, 2023b*). These plugins can be searched and installed directly from the plugin store that is inside ChatGPT. Once they are installed the user can write the text message in ChatGPT specifying the task to be carried out using said plugins, and then ChatGPT will deliver the results running the specified plugin.

ChatGPT API

First of all it is necessary to define what an API is. The acronym API stands for “Application Programming Interface”. It is built to allow two applications to communicate with each other through a set of rules and protocols (*AWS, 2023*). A case example is the phone's weather application, which is able to "communicate" with the software system of the meteorology institute in order to obtain the weather information that will be displayed to the user on the phone.

APIs are interfaces commonly developed by companies to make their services more widely used. Just a couple of months after the launch of ChatGPT, OpenAI decided to also launch its API, this allows developers to integrate the GPT model with other applications, products and services, opening up a sea of possibilities for companies and even for the development of services “not related to chats”. Because of this, large companies quickly integrated the GPT model with their products, among these companies are Snapchat, Quizlet, Instacart, Shopify, among others. A use

case is Instacart's AI system, which once integrated with ChatGPT is capable of assisting grocery shoppers with meal preparation planning and the quick-buy process for necessary ingredients (Wiggers, 2023).

Basically, this API allows companies to use the GPT model to create more specific and specialized services. For example, a teaching institute can create a chatbot with this model with the aim of giving students quizzes and complementing the learning resources so that they can expand their knowledge outside of class. In the case of marketing, there are companies that have begun to integrate their WhatsApp channel with ChatGPT in order to deliver human-like text responses based on your business needs. This allows companies to take advantage of the entire ChatGPT experience by customizing it for their customer service tasks.

Applying ChatGPT in real-world scenarios

So far the main feature of ChatGPT is that it can produce specific content for almost any industry and it can quickly answer questions that users may have. However, in the following paragraphs we seek to highlight how different industries can take advantage of ChatGPT according to the needs of each industry in order to promote efficiency, satisfaction and innovation.

It should be clarified that ChatGPT can be applied in many more industries, but these were selected as a reference, also it is limited to the capabilities that ChatGPT has at the time of writing this thesis.

Field	Some use cases
Business	Supply chain management, selection of suppliers, market research and forecasting, marketing, business analytics, customer service and sales.
Finance and banking	Investment management, banking, customer service, fraud and risk detection.
Healthcare	Patient triage, medical diagnosis and

	treatment recommendations, medical education and research and development.
Education	Personalized learning, teacher support, online tutoring and research.
Law	Legal research, review of contracts and documents, legal advice and drafting of documents.
Software development	Code generation, documentation, review and optimization of code.
Media and Entertainment	Content creation, brainstorming, curation of content and script analysis.
Manufacturing	Improve communication between machines and people, knowledge management, co-creating on engineering processes.

Table 5. Some cases of ChatGPT's use (Ray, 2023).

Business

There are many ways in which ChatGPT can be implemented in this industry. One of the most common user-facing ones is the implementation of customer service chatbots that allow users to ask questions, get product recommendations, and get help in transaction processes (Abdullah et al., 2022).

Although, in the business case there is a wide range of applications for ChatGPT. For example, it can be used in supply chain management, since it is capable of making demand forecasts based on historical data of the company's products or services. Also it can be useful at making quick and informed decisions taking into account the production and inventory of the company. Another case could be the selection of suppliers, in which ChatGPT is able to evaluate and recommend potential suppliers based on different factors such as quality, price and delivery time. Other areas might be business analytics, human resources, marketing, e-commerce, accounting,

finance, retail, real estate, and even insurance. Overall, ChatGPT has the strength to do tasks more efficiently and accurately while saving cost (*Bahrini et al., 2023*).

Finance and banking

ChatGPT has the ability to help improve customer satisfaction and transform the way the financial industry traditionally works. Some of the tasks it can perform include stock price prediction, investment recommendation, portfolio management and optimization, which can be performed in a similar way to how financial robotic advisors work (*Ali & Aysan, 2023*).

In the financial case, for example, virtual advisors can be created to give investment recommendations according to the characteristics and risk tolerance of each individual (*Bahrini et al., 2023*). On the company side, it can be used to analyze large amounts of data, whether financial or otherwise, in order to identify patterns, and at the same time provide information on market conditions and trends, which is highly useful when making informed decisions. It can also assist in reporting. Even, in more specific cases, it can help in fraud detection and risk management, which can be identified by ChatGPT when detecting patterns of suspicious activity, which at the end can mitigate the risks. It can also be used to create marketing or sales focused content, such as social media copy, emails, and advertising. (*Ray, 2023*).

Healthcare

In the first instance, ChatGPT can help medical professionals to diagnose conditions by analyzing a patient's medical information and history, and by classifying the symptoms of diseases to offer treatment recommendations based on each user's health needs (*Ray, 2023*). Also, ChatGPT could predict future health problems with the same data, which would be a great advantage as with less effort users can be aware of potential problems and can treat them in time.

Also, with the existing data, ChatGPT can generate customized treatment plans to provide a better experience for users. It can even assist in the analysis of images such as X-rays in order to provide more accurate support to caregivers. It can even support telemedicine by expanding care in remote areas or, in a more advanced case, it could provide real-time feedback in surgical processes (*Hariri, 2023*).

More specifically, in this sector, chatbots can be created using GPT with the objective of advising on health issues or even easily educating users about various conditions or symptoms. From the healthcare staff side, a chatbot could help in the classification of patients, in order to determine the urgency of the patient's conditions and the appropriate course of action for each one (*Ray, 2023*).

Education

ChatGPT can be used as a support for educational tasks, it can help to generate personalized learning experiences since it can create learning paths adaptable to the performance of each student, it can also recommend learning resources, answer educational questions and give comments on the student's assignments (*Fraawan & Khasawneh, 2023*). In general, ChatGPT has the potential to become an online learning companion or assistant that challenges users with exercises and at the same time provides explanation and feedback on their resolution.

Teachers can specially use this tool to save time when preparing quizzes or exams, it can also help to assess them without grading them, and it can even give feedback to students. ChatGPT can also facilitate online discussions and can be a source of exchange of ideas to create new dynamics in class. Regarding research topics, this tool can be a source of suggestions for research ideas and methodologies and can be helpful to develop convincing arguments (*Bahrini et al., 2023*).

Law and Legal Services

In order to provide ideas and recommendations in legal research, ChatGPT can be used to analyze large amounts of legal data, including laws and regulations, which can be used to generate quickly and accurate legal arguments. Likewise, this technology can be used to analyze and identify patterns and trends, which allows finding insights that can be useful to support legal cases (*Abdullah et al., 2022*).

ChatGPT can also be used for drafting contracts or legal documents, as well as reviewing them to identify potential legal issues, such as ambiguities or inconsistencies that may require closer review. As in other industries, legal advice chatbots can be created from GPT to help clients solve

legal questions and queries so that they can better understand legal jargon, and can analyze their legal options in order to make informed decisions (*Ray, 2023*).

Software development

ChatGPT can be used to generate code snippets based on natural language descriptions provided by the user. It also enables code optimization by identifying inefficiencies and recommending improvements, which helps developers to improve the performance and efficiency of their code. ChatGPT is also capable of reviewing code to identify potential problems and provide recommendations in natural language to improve the code quality and reliability (*Fraivan & Khasawneh, 2023*).

It can also help with the less pleasurable tasks for programmers, such as code documentation, as it can provide recommendations based on current best practices and standards in order to create a concise and easy-to-understand documentation, or it can even generate tutorials to use different programming languages (*Hariri, 2023*).

Media and Entertainment

One of the great opportunities in this regard is the creation of coherent and structured content, which includes scripts, plots and dialogues for movies, television shows, and even video games. In practice, once the creative mind inputs the information about the genre, tone and style of the content, ChatGPT is able to recommend ideas that can be more creative and attractive than common ones. Another way to capitalize on it, is when writers input their current scripts and ChatGPT helps by identifying potential stories, dialogues, or pacing issues, which make it easier for writers and directors to create more compelling and audience-engaging content (*Ray, 2023*).

In general, ChatGPT could be used to create content that is based on storytelling content in which we can also find music videos, commercials and other forms of media. Also, it can be used as a personalized tutor, for which the user has to assign a role and train according to their needs.

Manufacturing

According to the paper "*ChatGPT for design, manufacturing, and education*" there are many opportunities in the field of manufacturing. Among them is the possibility of improving collaboration between people and machines, since the current manufacturing systems can be

overwhelming for engineers; this helps to create friendlier interfaces of communication by using natural language in the systems. Also, ChaGPT can improve knowledge management at companies and it can be used to co-create innovation processes in design and engineering. It can even be used to educate employees within the manufacturing industry about technical issues. It's good to highlight that by now it can be more accurate for social end questions instead of specialized and technical ones since ChatGPT is trained with the technical knowledge and its creativity is not able to exceed experienced engineers by now (Wang et al., 2023).

According to Statista, the following is a graph that shows how the different industries are doing by May 2023 regarding the use of ChatGPT in company functions.

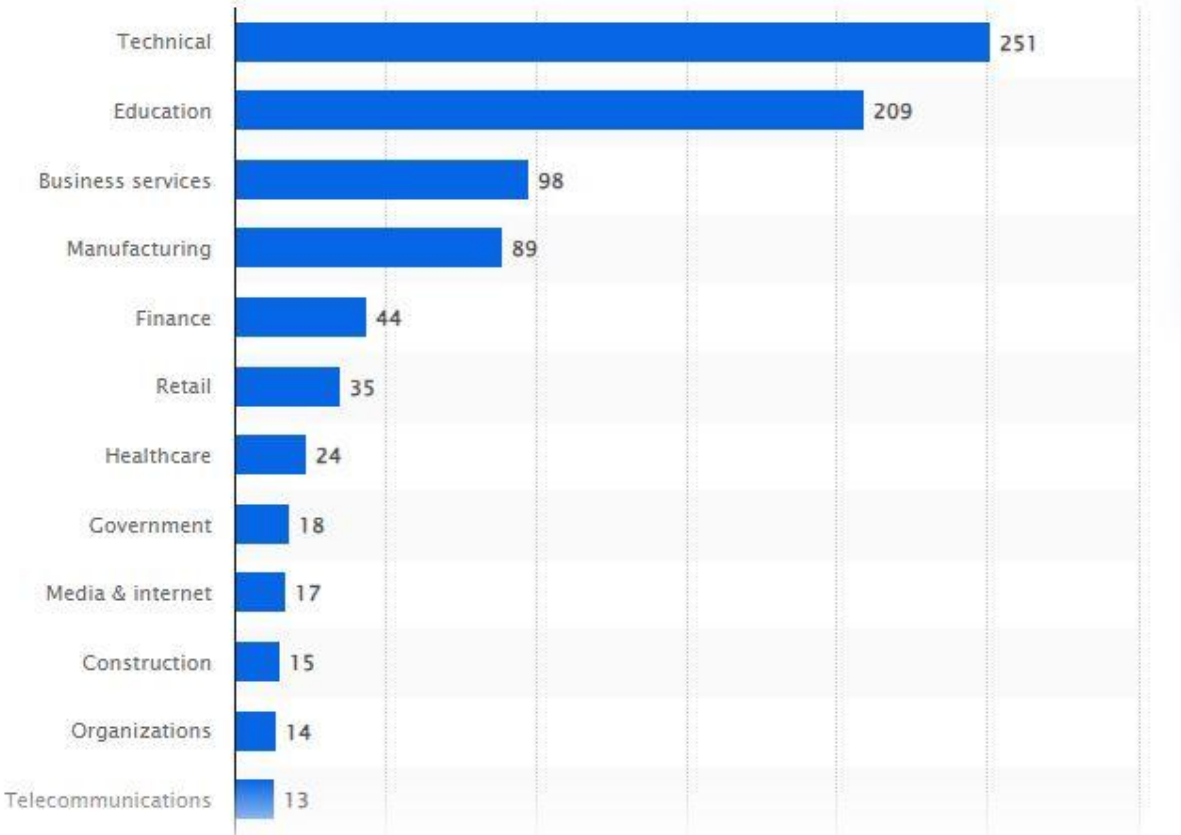


Figure 6. Amount of companies using ChatGPT in their business function in 2023, by industry. Source: Statista

According to this study, the industries that publicly use ChatGPT the most (measured by number of companies) are the technical, education and business services industries. It is not very surprising that the technical field has adopted ChatGPT so quickly, but what is interesting is that so many educational institutions have started using it, doubling the adoption of the business

services industry. Among the industries that have had the least adoption of this technology we can find the agriculture and cultural one (*Statista, 2023*).

It is also noteworthy that manufacturing companies have also had a very good adoption of this technology. For example, in this sector companies can use ChatGPT for basic activities such as automation of repetitive operational tasks, or materials data management and reporting. But if companies want to go into a more professional level, ChatGPT can be applied to the entire value chain in activities such as market research, product ideation, design problem solving, test scenario creation, and even supply chain analysis and management (*Lawton, 2023*).

Implications and challenges of ChatGPT

All the uses of ChatGPT in the various industries always represent dilemmas and implications that must be taken into account. For practical purposes these were grouped into the 3 areas that generate the greatest concern in society by now and which will be discussed below.

Job disruption

Due to the great potential that ChatGPT has in multiple industries, great fear has been generated due to the possibility of job displacement. According to studies, it has been determined that AI can automate a large number of tasks that human workers previously performed (*Zarifhonarvar, 2023*). According to the World Economic Forum, since 62% of the total hours that employees work are focused on language tasks, it is estimated that 40% of all work hours could be affected by large language models such as ChatGPT. However, it is stated that activities that are highly likely to be replaced by ChatGPT can instead be transformed into more productive activities through automation and human cooperation (*World Economic Forum, 2023*).

Various papers state that in addition to empowering existing roles, ChatGPT has also created new roles and will continue to increase the demand for certain profiles. A good example is prompt engineering, which is a position to design appropriate prompts so ChatGPT can generate accurate and precise content. Also prominent are ChatGPT's language model trainers and optimization specialists, who basically tune the model at each iteration and also help to identify areas where ChatGPT can optimize existing processes to improve model performance, accuracy, and stability (*Chen et al., 2023*). However, it is important to keep in mind that this transition phase towards

new jobs can face a great barrier since workers need more training or update their skills and knowledge to maintain their competitiveness in the labor market (Zarifhonorvar, 2023).

The following image from the World Economic Forum shows the possible roles in which the demand will decrease and increase in the market due to the implementation of artificial intelligence in organizational activities by 2027. For example, this report predicts a 40% increase in the number of AI and machine learning specialists, as well as a significant increase in demand for business data analysts, big data scientists and information security analysts (World Economic Forum, 2023). On the other hand, the roles that have a greater chance of being replaced are mostly those that are based on administrative or secretarial functions, such as bank tellers and data entry clerks.

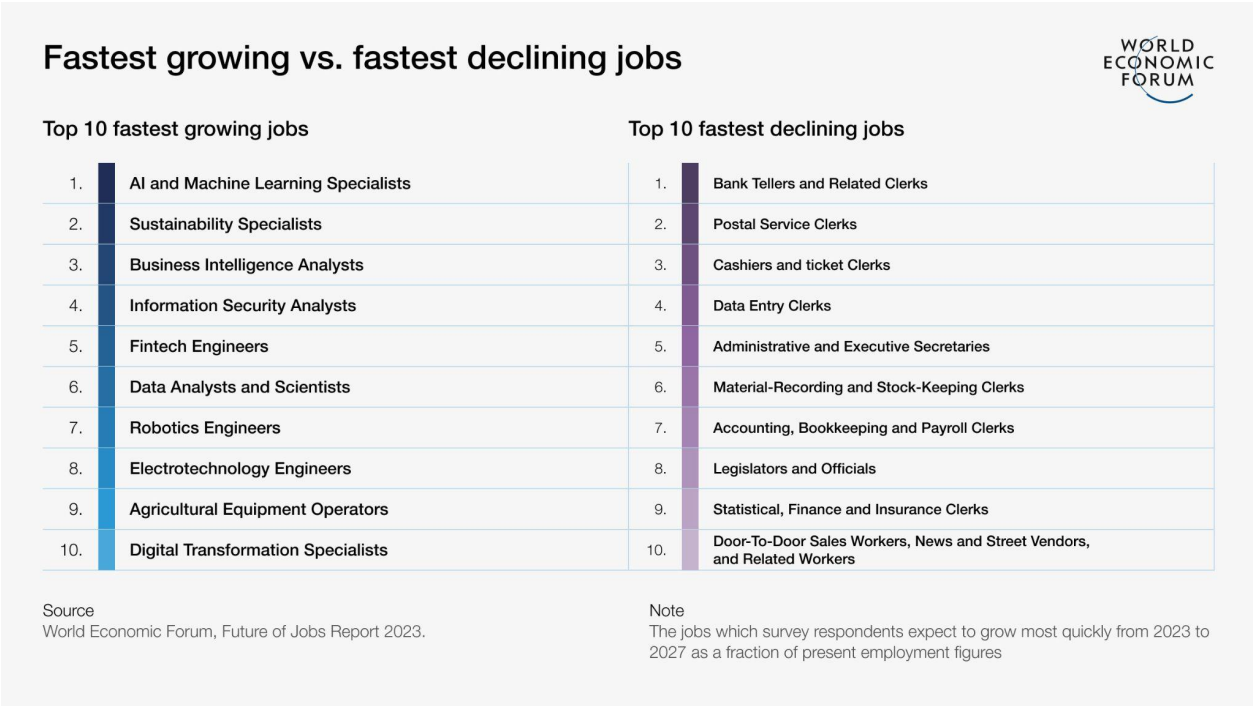


Figure 7. AI and machine learning specialists top the list of fastest growing jobs. Source: World Economic Forum, 2023.

It is important to highlight that due to all the changes that are expected in the labor sphere, the skills of workers will also be affected in the following years. According to the Future of Jobs Report, it is predicted that cognitive skills will quickly continue to be more important when recruiting workers. Among the companies surveyed for this report, among the skills that companies value most are creative and analytical thinking. These are followed by technological

literacy, self-efficacy, and socio-emotional attitudes such as curiosity, continuous learning, resilience, flexibility, and motivation (*World Economic Forum, 2023a*).

According to the information collected, it can be inferred that ChatGPT does represent the possibility of automating many tasks in almost all industries, however its implementation also means the creation of new jobs for which new technical skills are necessary and must be developed. Also, in this new era of automation and AI, workers must focus on developing their soft and strategic skills since these are the characteristics that continue to differentiate us from machines today.

Ethical dilemmas and regulations

One of the main issues that comes into play is the possibility of using ChatGPT for malicious or abusing purposes such as generating fake news since this tool allows users to generate text that is difficult to distinguish from human-generated text, which represents a chance to spread misinformation or manipulate public opinion. For example, companies or interested parties can create compelling arguments or marketing campaigns using the content produced by ChatGPT to manipulate users, which can be harmful and potentially dangerous (*Hariri, 2023*).

Another problem that causes concern is the biases in the responses produced by ChatGPT, this occurs due to the algorithms used, but mainly because of the training data and the fine-tuning process. This represents a problem because most of the data used for the training comes from massive internet resources which can have a limited diversity, but can also have biases in itself (*Zhou et al., 2023*). At this point, companies should be able to guarantee that their services do not discriminate against any type of group or individual based on certain characteristics.

Security, privacy and transparency issues must also be considered since ChatGPT has the ability to collect and analyze large amounts of data, including user personal data in order to adapt the outcome to the user's needs. This can lead to data breach if this information is not adequately protected. Therefore, to be transparent, companies must provide accurate and concise information to consumers so they understand that they are interacting with AI and their data is being collected and used in order to personalize the experience. Furthermore, users need to be able to understand how the models behind technologies like ChatGPT work and how they make decisions so that

once informed, users can decide whether or not to trust the validity of the results obtained (Rivas & Zhao, 2023).

In this scenario, the problem of authorship and plagiarism also appears, one of the most classic examples in academia is when students generate writings or creative works using ChatGPT. In those cases teachers are deprived when it comes to differentiating authority so they cannot evaluate students objectively (Zhou et al., 2023). For marketers this can also become a problem because departments can fall into a dependency on the automated use of ChatGPT, which could lead in the future to a lack of innovation in strategies and content generated.



Figure 8. Examples of potential risks of ChatGPT and strategic approach. Source: (Rivas & Zhao, 2023)

According to Rivas and Zhao, if there is an identification of the risks related to the use of ChatGPT and if the people in charge are able to implement mitigation strategies, the adoption of AI can be successful since it would be a responsible AI adoption. However, it is a fact that there are still many questions to be answered, such as who would be liable for a work that contains false statements or harms individuals? or who will be the intellectual author of something that was made using ChatGPT? Or even if ChatGPT can have a legal role in our society? These issues are still under discussion since, being a relatively new technology, the legal framework is barely being structured to fill the legal gaps. What is expected is that as it is adopted, regulations will be developed that limit the use of all generative AI.

CHATGPT AND DIGITAL MARKETING ACTIVITIES

AI-powered technology allows services to be optimized, simplified, and scaled, making them more powerful, cheaper and easier to be deployed and used by businesses. This ultimately leads to improvements in the quality of the services provided to the users and also increases the productivity of the companies. As technology has played an important role in almost every industry in recent years, marketing has not been an exception as this industry has also been impacted by technology and AI. In fact, AI has accelerated marketing performance by supporting activities ranging from automation to analytics (*Dwivedi et al., 2023*).

In general, chatbots are useful in the initial steps of a marketing process, as they help collect contact information, answer frequently asked questions and handle common technical problems which can directly or indirectly improve the volume of marketing conversations. Over time, chatbots have especially evolved in the digital marketing landscape as they are a tool that has the ability to automate part of the marketing process, which helps free up important time for marketing teams so that they can focus on more strategic projects or creative projects (*Kingsnorth, 2019*).

Thanks to ChatGPT's expertise, many possibilities arose as to how marketing departments can use this chatbot for much more specific tasks and with excellent performance. Below is a group of activities in which ChatGPT can be implemented according to market research.

Digital marketing activities

Digital strategy

ChatGPT has the potential to help marketers with strategic activities such as segmentation, targeting and positioning, as well as visualizing the company's strategic direction. For example, this tool can be used to identify profitable customer segments in a specific industry. In addition, thanks to its ability to search and analyze large amounts of marketing data, it can be useful at identifying patterns and trends that can be used to develop marketing strategies and campaigns. It can also be a source to structure models such as 4Ps, Porter's five forces or Boston Consulting Group matrix in order to build marketing strategies (*Ray, 2023*).

Market research

Thanks to the vast knowledge that can be digested by ChatGPT, companies are able to analyze in a quicker way how the company's products or services are positioned against competitors by brand comparison so they can better focus on strategies that enhance their brand. Also, with simple queries ChatGPT can help in providing insights and statistics about the consumer behavior and their demographic characteristics (*Dwivedi et al., 2023*).

Market research also could be carried out more efficiently since the vocabulary, perceptions and attitudes of consumers towards products or even the brand can be analyzed with less effort. In the case of product development, those departments can use ChatGPT to collect information in real time and from different sources so they can learn about current market trends and user behavior in order to develop new product innovations (*Rivas & Zhao, 2023*).

Content marketing

According to Kingsnorth, content is anything that can engage end users on the product or service offered, and it can be consumed in any medium that is capable of delivering the message that is intended to be shared (*Kingsnorth, 2019*). Content can be educational, commercial, or for entertainment purposes, but in general marketing content is characterized by its ability to change the perception or behavior of the consumer, and thus influence the process of selecting a product or service. Also, the content created with ChatGPT can be used in different formats, such as blogs, website articles, white papers, eBooks, case studies, how-to guides, Q&A sections, forums, news and updates, banners, infographics, podcasts, videos, among others (*Bala & Verma, 2018*). Maybe by now humans may perform better at telling stories, however ChatGPT is faster at writing, which represents a possibility to speed up creative processes that can be personalized as much as the user wants according to certain characteristics such as style and tone.

That said, once ChatGPT is given the company context and content style, it is capable of generating copy for social media posts or corporate emails, and it can even perform at more specific tasks such as the description of the products and services offered by the brand. It can also be used for analyzing data about target audience, and defining the messaging and tone in order to generate informative and engaging natural language responses (*Ray, 2023*). In addition to writing texts, another popular use is the generation of summaries of large amounts of information with

certain structure or format, which can save a lot of time. Also, grammatical errors such as punctuation and styles can be improved or fixed with ChatGPT according to a provided text.

Customer experience through chatbot based services

We already know that ChatGPT is a chatbot, the interesting thing about this technology is that it can be used through other chatbots to improve customer service experience and engagement for companies. ChatGPT is a chatbot composed of the GPT model, which is the generative AI language that can be used in the construction of chatbots in order to have effective query handling (*Dwivedi et al., 2023*). Chatbots powered by GPT can be primarily designed to answer user questions in natural language, offer product suggestions or handle transactions in real-time. An appealing fact for companies is that ChatGPT has the ability to examine customer behavior and preference data, which allows the service to be more customized as the relationship with the customer evolves (*Ray, 2023*).

One major advantage of ChatGPT is that it can be trained to provide 24/7 support while maintaining a human touch in order to reduce the dissatisfaction that users usually have due to repetitive, generic and impersonal responses that have existed with traditional chatbots. For example, customer service agents, powered by ChatGPT can identify and analyze relevant information to suggest possible solutions, but at the same time the chatbot can be funny, personalized and interactive. By automating these tasks companies can reduce the costs associated with human intervention and also can increase the efficiency and accuracy of solving problems where a human presence is not exclusively necessary (*Rivas & Zhao, 2023*).

Advertising

ChatGPT also allows the creation of personalized campaigns with the objective of obtaining leads. This can be achieved by analyzing customer data and generating messages that can match the needs and aspirations of potential customers. Also, it can be useful in the construction of commercial activities or strategies that can enhance brand recognition (*Dwivedi et al., 2023*).

Through ChatGPT users can also optimize current branded content for advertising purposes, for example, users can use a product description as an input and from this ChatGPT can generate headlines or call-to-actions pieces in different languages. This chatbot can even test advertising

concepts so that advertisers can refine their advertising campaigns and improve their effectiveness before actually spending money and time on them (*Jain et al., 2023*).

SEO

The acronym SEO means "Search Engine Optimization" and basically refers to adjusting or optimizing the website so that it can appear organically (without paying) in the first search results of Google or any other search engine. It is valid to highlight that search engines use specific algorithms, which are regularly updated according to new criteria that determine the relevance of the content. Although there are various techniques to quickly increase SEO, Google seeks to avoid manipulation of algorithms and tries to identify sites that do not deserve to be at the top of the search engine results pages (*Bala & Verma, 2018*).

Google uses 'robots' to try to interpret and index the pages, these robots mainly review the structure, description and content of each site to identify if they are relevant and attractive for users (*Kingsnorth, 2019*). In this case, ChatGPT can be used to update yourself on new search engine standards, get keyword recommendations on specific topics, optimize content for SEO, or generate titles, meta titles and meta descriptions. It can be even used for more technical tasks such as generating Schema Markups to label the content of the websites.

SEM

ChatGPT is also used in Search Engine Marketing strategies which stands for comprehensive planning strategies to attract traffic mainly through paid actions. Therefore, it can also be known as paid search marketing. Among the most relevant platforms to execute those strategies are Google AdWords, Bing Ads and Yahoo Ads. For example, in this case, ChatGPT could be used to get updated in the new standards of each search engine and to create optimized content or descriptions for display advertising, search retargeting, site remarketing, mobile marketing and paid social advertising strategies (*Bala & Verma, 2018*).

ChatGPT may also provide suggestions for structuring successful marketing campaigns based on the inputs entered in order to generate awareness and engagement with the products and services offered by the company. Since ChatGPT is able to analyze customer data, it can generate descriptions that can match the needs and aspirations of potential customers which make the companies more appealing. ChatGPT is also capable of providing keyword suggestions to help

campaigns have a higher exposure (*Dwivedi et al., 2023*).

SMM

SMM refers to Social Media Marketing, which focuses on driving traffic to websites and businesses through social networks such as Facebook, Instagram, Twitter, LinkedIn, Spotify, Youtube, etc. The primary objective of SMM is that companies can promote their products or services through certain actions so they can build a link with their target audience through social networks. In this sense, it is important to create content that generates engagement because if users like it, they will genuinely share it and it will expand brand awareness with less effort. Usually content that is educational, fun, and creative has the ability to have this effect on users. For this reason, it is important to invest in producing the right content for social media, however, in social media these strategies must be personalized according to the standards of each network (*Bala & Verma, 2018*).

This is where ChatGPT can come in, it can be trained with the context and tone of the company, and according to the guidelines of each social network, it can quickly build creative and engaging content. Also it can be useful at creating compelling call to actions (CTA) in order to increase their conversion rate or it can be used to create storyboards, or building up creative ideas for posts.

Email marketing

Email Marketing refers to the activity of sending messages via email to a list of customers or subscribers, with the primary objective of building loyalty and promoting products (*Bala & Verma, 2018*). ChatGPT allows users to create interesting, convincing and personalized copies according to the brand and the characteristics of each audience, which can increase conversions. It can also be used to generate subject lines that are striking at first glance, which helps to generate a higher opening rate of the emails.

Also it allows to quickly perform A/B testing, since through ChatGPT users can create different versions of an email and once they are tested the company can decide which approach works better according to the metrics. It can even be used as a review and feedback tool as it can provide valuable information and recommendations to improve email writing. For example, the

users can upload a draft of an email to ChatGPT and they can ask it to identify if the copy contains words that could be spam triggers for email service providers.

In order to generate these emails it is important to define the basic inputs, such as who is the audience, what I want that person to do, and what they need to know or believe in order to take that action (*Sinclair, 2023*).

Web analytics

One of the most relevant aspects of a digital marketing strategy is the ability to obtain and analyze web analytics. This is an important aspect because companies need to be able to collect, measure, analyze the performance of their digital activities in order to make decisions. Unlike simple reports, web analytics provides analysis of the business from different angles so that the company can analyze them and make informed decisions that can improve business metrics such as ROI and conversion rate. Web Analytics tools include Google Analytics, Spring Metrics, Woopra, Clicky, Mint, and Chartbeat (*Bala & Verma, 2018*).

Web analytics is a powerful tool to collect data and analyze the performance of content and compare it to the market statistics. It can even be used to predict user or business behavior so the company can take the risk and make moves according to what they expect to happen. In a broad sense, ChatGPT can analyze large amounts of digital data in order to obtain insights and identify patterns to be able to make objective decisions.

Managerial considerations

In order to use ChatGPT for specific marketing tasks, it is needed to train the chatbot by providing clear and detailed information about the company so the AI model can create matching content. The more information the user provides, the better. For example, it should be specified what type of content is needed, what is the target audience and what are the requirements and restrictions of the query.

It is important to highlight that the content that is created by ChatGPT should not be the final content, it should be reviewed and adjusted because it may contain errors or may even have omitted information. Also it is good to validate that the message meets the tone of voice of the

business and that it is aligned with its objectives. This training process will become an iterative experiment, where the results of the queries must be reviewed and feedback must be given to ChatGPT so that it can refine it in order to reach the desired results and create attractive and persuasive content.

As we have discussed, ChatGPT is a valuable tool to help with marketing activities but it can also show some limitations and inaccuracies if it is not used correctly. According to the article "*Exploring the Implication of ChatGPT AI for Business: Efficiency and Challenges*" the following are the limitations that ChatGPT has for the marketing sector and which must be considered in order to guarantee a positive experience for the clients and to not to carry out implementations that may harm the company (Arman, 2023).

- Excessive dependence on automation: As we have already explained, one of the great virtues of ChatGPT is that it helps to automate routine tasks such as customer service, however the automation could mean a risk. If companies rely too much on this automation and leave out human contact, the personalization in customer interactions could be lost. Also, after a long time the responses provided by ChatGPT can be similar to the ones provided to other marketers which can be a problem because the identity of the brand can be harmed if the process is totally automated.
- Lack of Emotional Intelligence: ChatGPT has the ability to process and respond to customer inquiries in a very efficient manner, however to this day it does not possess the emotional intelligence and empathy as a human customer service representative. Therefore, this could result in a less satisfying customer experience and less connection, especially in more sensitive situations where emotional support is needed. To counteract the risk in these situations, companies should define what type of tasks or activities ChatGPT can handle and for which it should be redirected to purely human customer service.
- Data Privacy Concerns: In order to personalize ChatGPT's interactions with customers, it is necessary for the customer to be able to access personal information. However this may raise concerns about the privacy and security of user data. This is why companies must be transparent with users about how they use their data, and must be able to take measures to

protect it. Here it is important that companies make sure to clearly explain to users that their information is being stored and how and for what purposes it will be used.

- **Bias and Discrimination:** As we mentioned earlier, fairness is entirely dependent on the data the model is trained with. Then, if the data used contains biases or discrimination, the ChatGPT system would preserve it. For this reason, companies need to ensure that services that are powered by ChatGPT are trained on diverse and unbiased data sets and they must constantly monitor the responses to make sure it meets the standards.
- **Technical problems:** ChatGPT is not immune to bugs or errors, such as providing incorrect answers, since it is largely fed from inaccurate sources. Even ChatGPT can hallucinate, as it can produce content that seems 100% safe and convincing but is not real. For this reason it is crucial to validate the results of the information generated by ChatGPT with other data sources to avoid misunderstandings. If the information is not validated, this could result in frustrating experiences for users and could end up damaging the company's reputation.

The great power of ChatGPT also means a great responsibility for companies, so they must be aware of the ethical considerations involved in the use of ChatGPT in marketing activities. Because of this, the paper “*Marketing with ChatGPT: Navigating the Ethical Terrain of GPT-Based Chatbot Technology*” specifies the main aspects that must be considered to counteract the indirect effects of ChatGPT and if they should be taken into account by companies, consumers or both. Those will be exposed on the following [Table 6](#).

Ways to Make Ethical Use of AI in Marketing	Primary Stakeholders
Ensuring transparency	Companies - Consumers
Addressing bias	Companies - Consumers
Prioritizing privacy	Companies - Consumers
Conducting a risk assessment	Companies - Consumers
Being responsible	Companies - Consumers

Continuous monitoring	Companies
Encouraging ethical decision-making	Companies
Human oversight	Companies - Consumers
Recruit data science experts	Companies
Develop best practices AI marketing	Companies

Table 6. Comprehensive Overview of Ethical Considerations and Stakeholders in AI-Based Marketing (Rivas & Zhao, 2023)

Transparency, which refers to the fact that companies must be honest about the data they collect and their entire use process. This allows consumers to understand how their data is being used so they can thus make informed decisions about their privacy. This also helps build trust between businesses and consumers, which is essential for developing long-term customer relationships.

In general, companies using ChatGPT should establish a clear ethical framework in order to guide the decision-making of those in charge, and at the same time train their team on ethical guidelines so that the company can monitor and test that the content produced complies with ethical guidelines. If the people who train the model and make the prompts are responsible and have a strong ethical foundation, the results obtained will also be ethical and human-centered.

Also, when Rivas refers to recruiting data science experts, he means that it is essential for marketing departments to be able to hire data experts that help them to understand how AI works in general, so they can better focus their efforts and be able to analyze and interpret marketing data to boost their strategy. Companies have a large amount of data that, if cleaned, processed and analyzed in depth by a specialist, can generate value and offer a different perspective.

ALELUYA'S CASE

Company description

Aleluya is a B2B startup based in Medellín, Colombia. The language used is Spanish and the translation of the company's name into English means hallelujah. Aleluya focuses on offering HR, Social Security and payroll services for small and medium-sized companies in Colombia. Currently more than 10,000 companies make use of its services offered through its digital platform, which is characterized by using the best practices in technology, as well as a friendly design. Because of this, its value proposition is focused on offering HR, social security and payroll services with a friendlier and faster user experience and with more affordable prices, compared to the big tech companies (*Aleluya, 2023*).

The three modules on which focuses the company will be explained below:

- The payroll and electronic payroll issuance module allows the company administrator to perform both actions in less than 5 minutes regardless of the size of the company, making it as simple as possible and avoiding the use for multiple Excel files.
- The social security module is responsible for the automation of the social security affiliation process, so the HR employee does not have to enter the website of each social security provider to carry out the registration of each employee. So thanks to Aleluya this process can be done without having to leave their website.
- Finally, the HR module focuses on managing the entire onboarding flow of employees, in which each new person that is hired by the company is added to the platform to record all the personal data. Then the information provided is validated and the documents needed to formalize the contract will be signed within the platform in order to finalize the hiring process.

Aleluya's marketing strategy.

A marketing strategy is basically a company's plan to reach its potential consumers and convert them into real customers. The following table specifies in a simplified way the pillars of the

marketing strategy of the company under study. The objective is that these definitions serve as input when training ChatGPT to be able to have more accurate results.

Topic	Characteristics
Marketing Mix	Product: HR, Social Security and payroll automated services. Price: Freemium. Place: Online platform. Promotion: Advertising, SEM, WOM, personal selling.
Value proposition	Aleluya helps those responsible for Human Resources, social security and payroll tasks to save time and avoid risks of penalties. This is done through a platform that automates end-to-end HR, payroll and social security processes.
Differentiation approach	Speed, reliability and accompaniment.
Brand's personality	<p>Aleluya is a brand that loves what it does and which seeks to transmit the passion for doing things differently. Also, the brand tries to spread good vibes to others and seeks to create services that once companies acquire they can shout: Hallelujah!</p> <p>It is an irreverent company, which speaks openly and takes positions because they are sure that their product is the best in the country.</p>
Tono	Irreverent, simple, funny, close to people and empathic
Values	Reliability, agility, tranquility, freedom, enjoyment (of work) and simplicity.
Customers persona	Represented by the main roles that Aleluya looks to approach: Administrative Assistant (Adriana), Human Management Leader (Paula), General manager (German), Independent accountant (Consuelo).
Audience	Demographic characteris:

	B2B Age: 35 - 50 years Educational level: College, technical, university. Occupation: Human resources and accounting. Purchasing power: Medium and medium-high
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Table 7. Aleluya’s marketing strategy. Source: Aleluya

Email Marketing Toolkit

Email is one of the most effective touch points in companies for which it is one of the main opportunities to spread the “Aleluya Effect”. However, to achieve this successfully, a unified tone must be maintained and certain requirements must be met in the structure of the messages. That's why the next paragraphs will be focused on defining the email marketing toolkit needed to create new copies for the company.

Email’s tone in Aleluya

- Irreverent: Aleluya tells the truth openly, the company is not afraid to speak out against those things in which it does not believe, because the company knows that they are the best platform for payroll, social security and human resources operations in Colombia. Basically, the company does not follow rules that don’t work for them.
- Casual: The company is not stuffy, nor does it use technical and far-fetched words. They talk as if payroll, social security and HR issues were easy, because those topics are actually easy for them.
- Spontaneous: Aleluya says what they think and how they think it. In the same way, they want those who interact with the brand to feel free to express themselves as they would if they were with their friends.
- Intense: employees actually love what they do so they transmit the passion for doing things differently and for infecting others with good vibes.

- Funny: The company is convinced that only if people enjoy the journey they will be able to get great results. In this sense, they seek that the people with whom they interact can enjoy their work and their time thanks to the benefits that Aleluya has. This is why the company is not afraid of making jokes (without being clowns), using sayings such as "it will be ready in less than a rooster crows" or even calling its users to calm down.

In general, the emails used in marketing are characterized to be persuasive because their main objective is to take users through the funnel that leads to the acquisition of new customers. Especially, in the content of the emails, persuasion methodologies such as PAS (Problem, Shake, Solution) are used, and also it is highlighted how Aleluya can solve their pains. In addition, key mental triggers for persuasion may be used, such as scarcity, social proof (testimonials), authority, sympathy, consistency, reciprocity and call to action.

Email marketing structure

The structure of the emails sent by the marketing department are composed by the next components:

1. Subject: refers to the title of the mail. It should be short and provocative, with the aim of motivating the user to open it.
2. Content: Here the idea of the mail is developed in detail, basically it can be an educational, promotional or transactional content.
3. CTA: It should be short, compelling and action-oriented.
4. Goodbye: It is also short, it can show affection or interest for users.

Brand identity expressions

The following is the toolkit for copywriters in order to reflect a consistent personality of the brand and which should be taken into account when creating new copies.

1. Be clear about what the company wants to achieve with each email and to who they are talking to.
2. Use expressions like:
 - a. "Hello! I greet you in stockings. How are you?"
 - b. "Hello! I greet you with a coffee in my hands. How are you?"

- c. "Hello, hello! I hope this email finds you relaxing. If not, that's why I'm writing to you"
 - d. "P. D. I love you"
 - e. "Relax! I'm here for whatever you need"
 - f. "We are on fire!"
 - g. "Pour yourself a coffee, put on your Ray-bans 🕶️ and breathe."
 - h. "Remember that the magic of life is in the simple things"
3. It is allowed to make jokes.
 4. Be direct. Do not use "decorations" that do not point to the objective of the message.
 5. Write as you speak. Active verbs and simple language should be used.
 6. Avoid technical or fancy language.
 7. Avoid clichés.
 8. Always express with good vibes.
 9. Keep in mind the nature of the email channel, its language, and what people expect to find in it.

Types of email marketing

Just as there are different types of media, there are also many types of messages that change according to its objectives. The following are the types of messages used by Aleluya:

- **Persuasive:** This type of message is widely used in marketing and sales and its main objective is to take a user through the funnel that leads to the acquisition of new customers. However, this type of message can also be used to communicate changes and new features of the product. Some examples of persuasive messages:
 - Sales marketing.
 - Messages focused on customer conversion.
 - Communications of major changes, which can be internal and external.
 - Product marketing.
- **Informational:** Widely used in support, success and product in order to communicate news. It seeks to say directly what is happening or will happen by answering 5 key questions: Who, How, When, Where and Why. The main objective of an informative message is to provide tools to the user to make decisions or solve problems. However, it is

usually shorter and more direct than the advisory tone. Some examples of informational messages:

- Job calls
 - Closing of terms and accounting calendar (premiums, NE)
 - Changes in product design
-
- Educational / Advisory: Commonly known as an informational message with “steroids”. These messages seek to give context and provide educational information so that users have criteria when making decisions. It is perceived as support rather than just an entity trying to influence users so they can win. The educational tone should be used in all areas so companies can be recognized as experts in their offered services. The following are the commonly used educational media:
 - Blogs or Help Centers
 - Telephone or WhatsApp conversations with clients and prospects
 - Crossing emails with clients and prospects
 - Social networks like LinkedIn
 - Webinars and master classes
-
- Transactional: It is essentially an email that is automatically sent to individual recipients as a result of an action that has been carried out within Aleluya's website. Some examples of transactional messages are:
 - Confirmations of purchase or payments
 - Password reset message
 - Shipping notifications

Methodology

Mailing creation

As a starting point it was necessary to understand the current strategy, the personality of the brand and the tone with which it approaches customers. Once this was taken into account, it was necessary to identify which particular marketing activity we wanted to focus the experiment on. Since one of the most commonly used channels is email, it was decided to opt for this one.

After this, it was necessary to analyze the current mailing strategy so we investigated the types of emails that are currently sent and their frequency. Once we had an overview of the marketing strategy, it was decided together with the company to work specifically with the cold lead database, since that is where the company needs to be more creative to capture the attention of users.

Aleluya's company provided us with 4 different copies that they previously used for persuasive email campaigns and which were focused on converting cold leads into users. That database was built from a free website feature called "Calculadora" (calculator), in which users had to register their basic information in order to use it. The company's approach with this database is to send between 2 emails per week to all the users with the goal of encouraging them to create their account for free.

Some of the tactics used on those emails are:

- Offering a free trial of the "Full Juguetes" Plan for 15 days after creating an account.
- Offering users free content in which they can learn about how to be more effective and efficient in their day to day tasks (related to HR, Social Security and payroll).
- Sending testimonials and personalized copies. These copies should focus on how Aleluya can lighten the load of the people incharge of performing the company's HR tasks, showing how Aleluya's offering stands out from the crowd. Plus should remind users to create an account.
- Notifying and explaining new functionalities of the product. In addition to this, it should remind users to create their account.

- Talking about the benefits of Aleluya to influence new users to create an account and pay for their services.

[Figure 9](#). is a copy provided by the company in which it is shown the structure and the style of the current copies sent by the company to their cold leads (by July 2023). In this example we can notice that the company makes use of gifts, images, emojis, sharp capital letter, custom names and multiple postdata. Additionally, in the end the email humanizes the person in charge of sending the emails by showing a photo and some information of the employee. It can also be seen that the company uses an informal tone in which the grammatical rules are not completely complied with, since the words are elongated and the expressions and question marks are not open and close correctly.



Figure 9. Example of the copies used by Aleluya for the cold leads. Source: Aleluya.

What particularly catches our attention is the length of the messages, since they contain approximately 1,200 characters in the body which can be visually heavy for a user who has not yet generated a real connection with the brand.

Following this we proceed to ask ChatGPT what is the recommended number of characters for a marketing email, to which it replies that although there is no strict rule regarding the number of

characters, what is suggested is to keep the copies within a range 50 to 125 words or approximately 300 to 800 characters. In general terms, it is recommended that emails are concise and direct because it allows the company to attract attention and prevents them from being tedious to read (*ChatGPT, 2023*).

Once we had all the inputs from the company and once the focus of the experiment was selected, we proceeded to train the chat. First it was necessary to create an account specifically for the marketing experiment, which was trained with the personality of a digital marketing specialist (role play). To start the conversation it was important to clearly define the indications of the questions to have optimal results and take full advantage of its potential. The reference structure we used was the following:

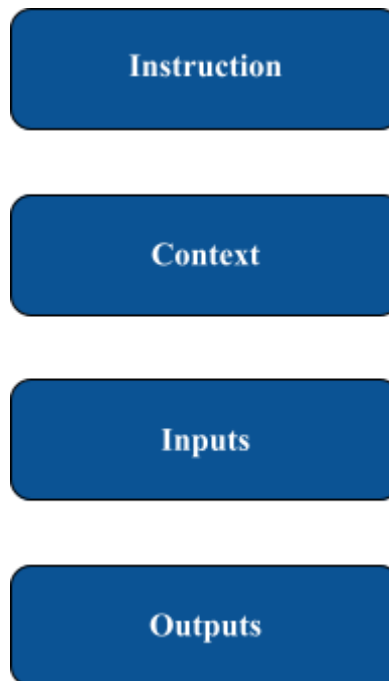


Figure 10. ChatGPT prompt structure. Source: Platzi

The instruction or task is the specific objective that the user wants to achieve through the query. For example, in our case, we asked that taking into account all the information provided it should create a copy so that leads would be motivated to create an account.

The context is used so that ChatGPT knows from which position it should provide answers. It may involve external information or additional details that can guide the model towards better

answers. In our case, we specified to ChatGPT that these copies would be targeted at the database of cold leads and it was provided basic information of the company.

Input refers to the information we want the chatbot to work on to achieve its objective. It is also understood as the input for which we are interested in finding an answer. For example, in our case, to personalize the results we provided examples of phrases that could be used in the copies and we also specified which were the benefits of joining Aleluya.

Output is how you want that response to be delivered. It can refer to a specific format, for example, a comparison chart. Also can be specified the characteristics, such as style, tone and length of the text that is expected to be created by ChatGPT. In this case, we specified the expected structure of the copies.

It is worth noting that not all components or features are necessary to make a query and that the format depends on the expected results. However, this is a good guide when looking for detailed instructions that enrich the query in order to have a specific answer. As an introduction,, the following was the message used:

“Hello, please behave like Aleluya's marketing copywriter. You should keep in mind that Aleluya is a company focused on offering HR, Social Security and payroll services for small and medium-sized businesses in Colombia. Its services are offered through its web platform. The value proposition revolves around automating its services with a friendlier and faster user experience, which helps clients to save time and avoid legal risks for companies.

Taking the above into account, create an email copy for leads to create an account on Aleluya.”

After this, some aspects of the company's marketing strategy were specified to ChatGPT, as well as the advantages, brand personality, values, target audience and tone in communications. The next figure shows how we started to personalize the language used by the chatbot by taking into account the personality of Aleluya.

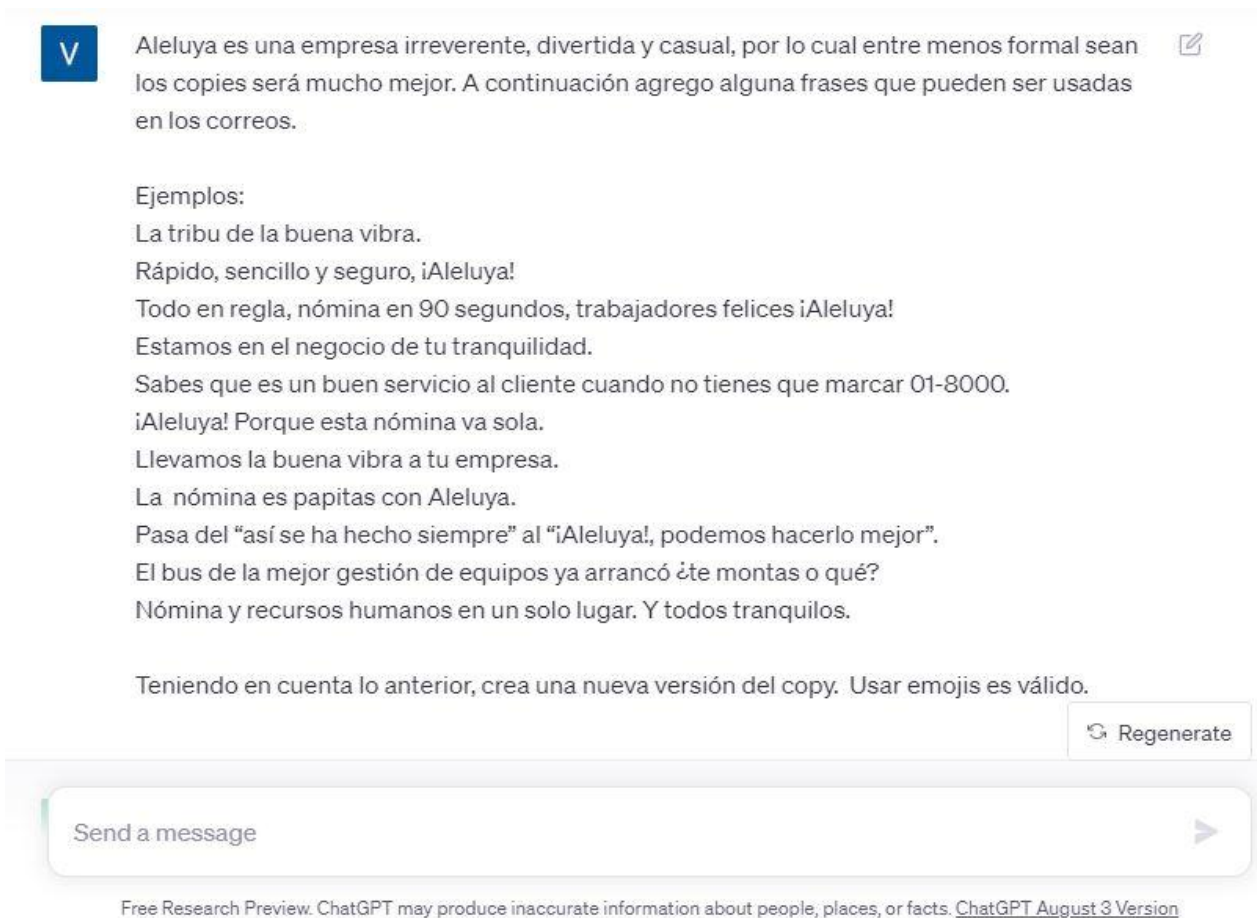
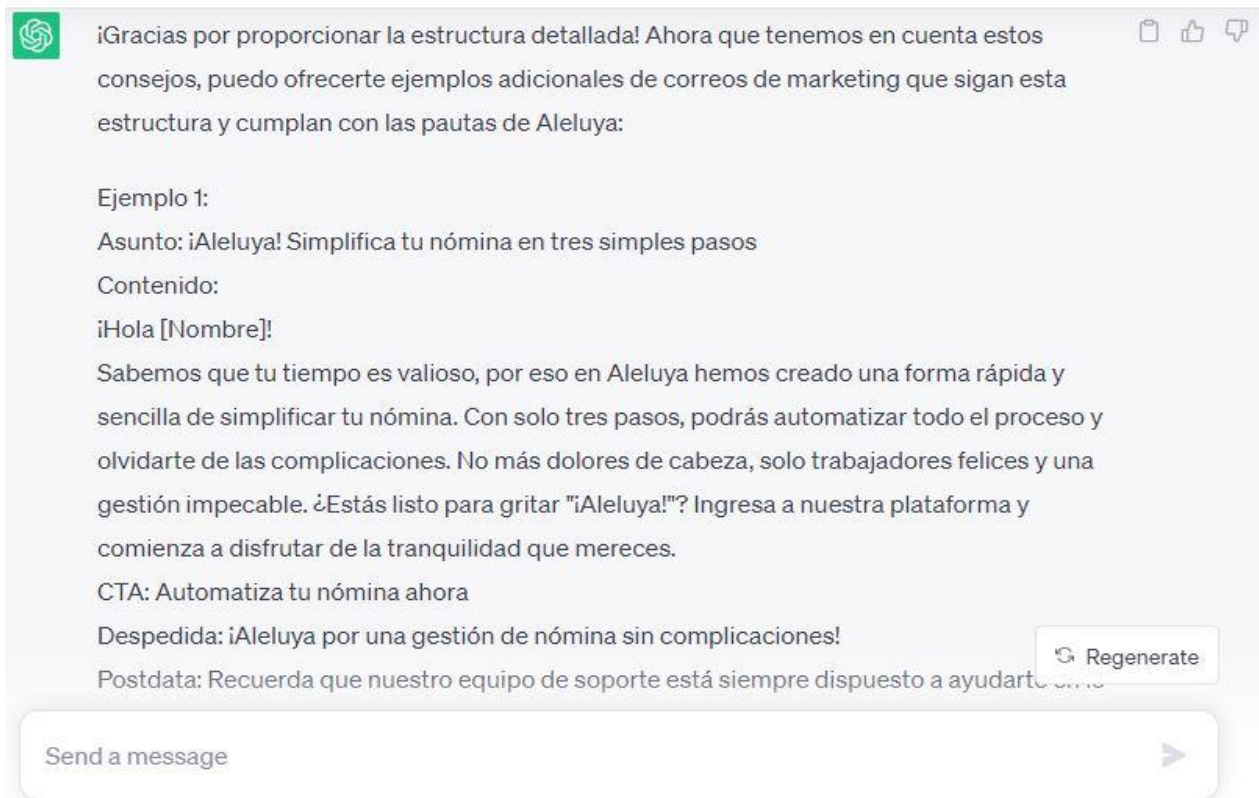


Figure 11. Personalizing ChatGPT with Aleluya's expressions. Source: ChatGPT.

With these inputs we had the first iteration on the copies created with ChatGPT. At this point the results were not perfect since the structure did not fully comply with what was expected, it only returned the greeting, body, CTA and a corporate farewell. Because of this we ask ChatGPT to follow the structure of subject, greeting, Content, CTA, farewell and posdata. In addition, some tips are given to ChatGPT, such as making jokes, being direct, using active verbs and simple and familiar language and avoiding clichés.

After this the system provided us new results that were closer to what we were looking for. And which can be seen in the following Figure.



Free Research Preview. ChatGPT may produce inaccurate information about people, places, or facts. [ChatGPT August 3 Version](#)

Figure 12. First structured copies provided by ChatGPT. Source: ChatGPT.

Once ChatGPT produced some more structured examples, new suggestions were indicated with the aim of iterating the learning process and that the emails follow more the tone of the brand. Among these suggestions is personalizing the farewell, using short CTAs and making more use of emojis in the copies.

Once we considered that the chat was sufficiently trained, we proceeded to create the first email to address the cold leads from the Aleluya database. For this, ChatGPT was asked to generate a copy for an email that encourages users to create an account in Aleluya. In addition, it was specified that creating the account is completely free and that it is not necessary to register any credit card. Additionally, the company will offer to them a 15-day free trial of Aleluya's "Full juguetes" Plan to motivate them to register.

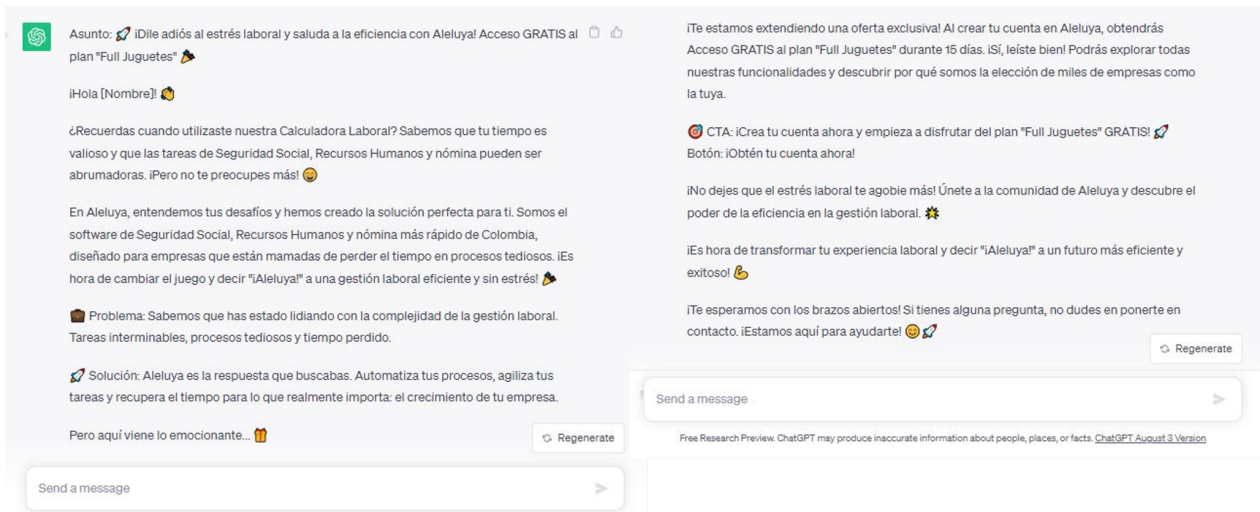


Figure 13. First final copy produced by ChatGPT. Source: ChatGPT.

Since the first copy was quite right, we proceeded to ask ChatGPT to generate the second copy. In order to get different results, we specified five benefits of using Aleluya and we also used the hyper parameter “Temperature” for which we determined the value 1 in order to get a highly creative output. The following is the response obtained from ChatGPT.

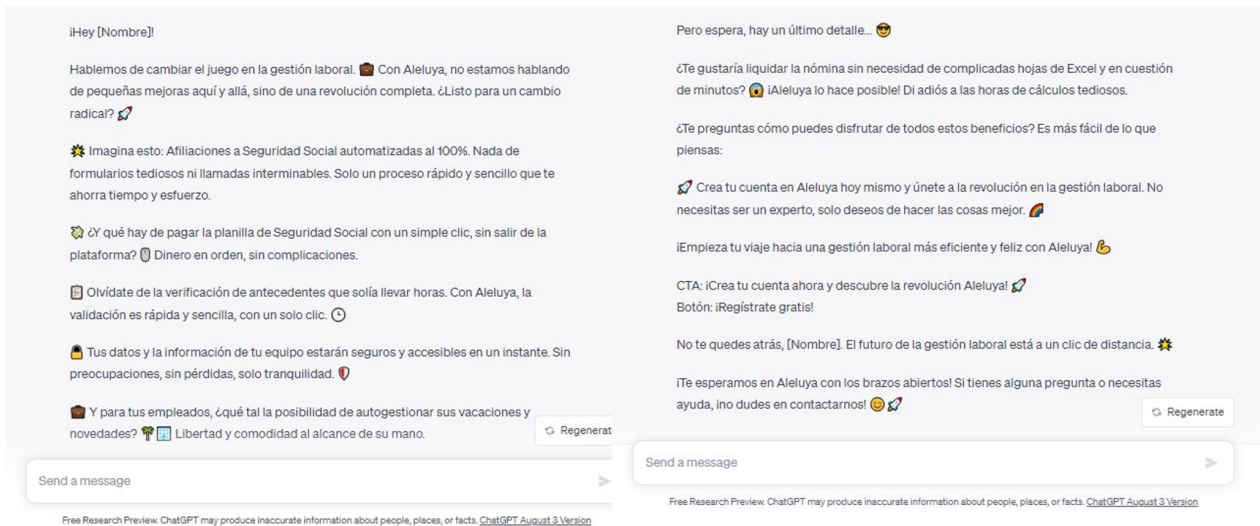


Figure 14. Second final copy produced by ChatGPT. Source: ChatGPT.

Figure 14 shows the results of testing the Temperature hyper parameter, which we consider is useful since the personality of the brand tends to be more creative and less standardized. We also did a prompt for an A/B copy but since we saw the results were quite similar and didn't have a

huge difference we moved to test other strategies that can be more successful.

With the intention of improving the results, for the following copy ChatGPT was asked to better balance the use of emojis. We did not specify any parameters for this prompt, we just reminded that to encourage registration, FREE Access to the "Full Juguetes" Plan will be given to users once they created their account. It was also remembered that Aleluya is the fastest Social Security, Human Resources and payroll software in Colombia for companies that are tired of wasting time. The following was the result.

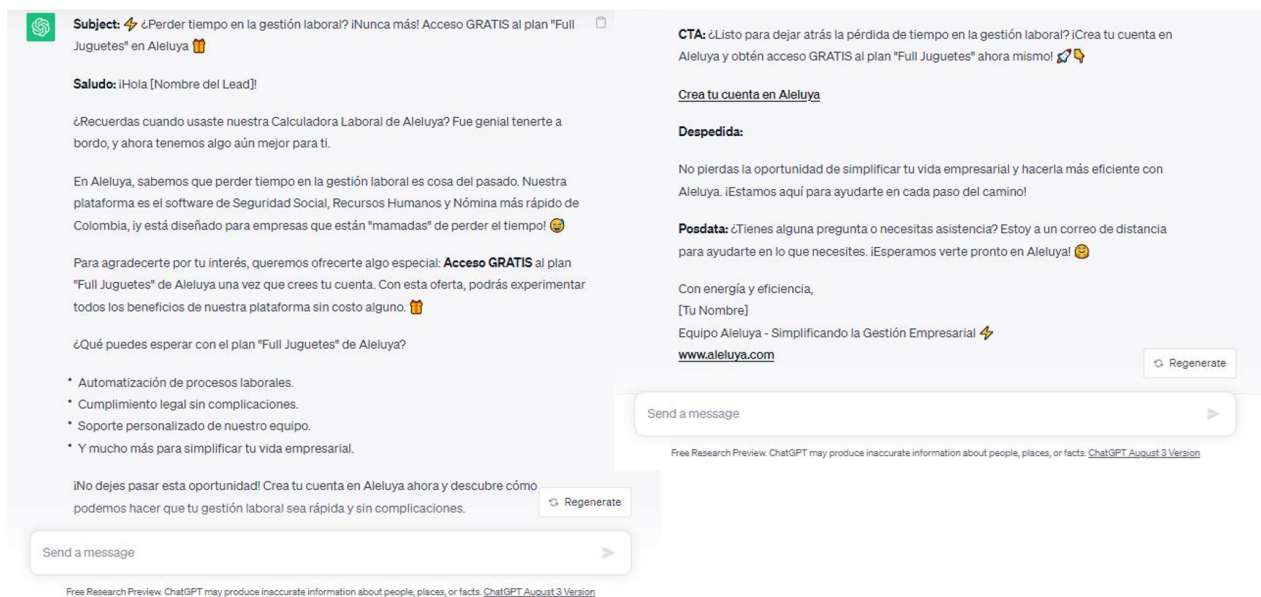


Figure 15. Third final copy produced by ChatGPT. Source: ChatGPT.

The fourth and last copy had to have a different approach, since it would only be sent to users who had started the registration process but did not finish it. Therefore, this message had to have a reinforcement approach so that the leads can complete the onboarding. For this, ChatGPT was specified to create a copy of an email that would be sent to users who have not finished onboarding in Aleluya, that is, they have not finished filling out their data to complete the account creation process. In this copy, ChatGPT should remind some of the benefits of Aleluya in addition to free access to the "Full Juguetes" Plan. Finally a Temperature of 1 was specified. The following was the result.

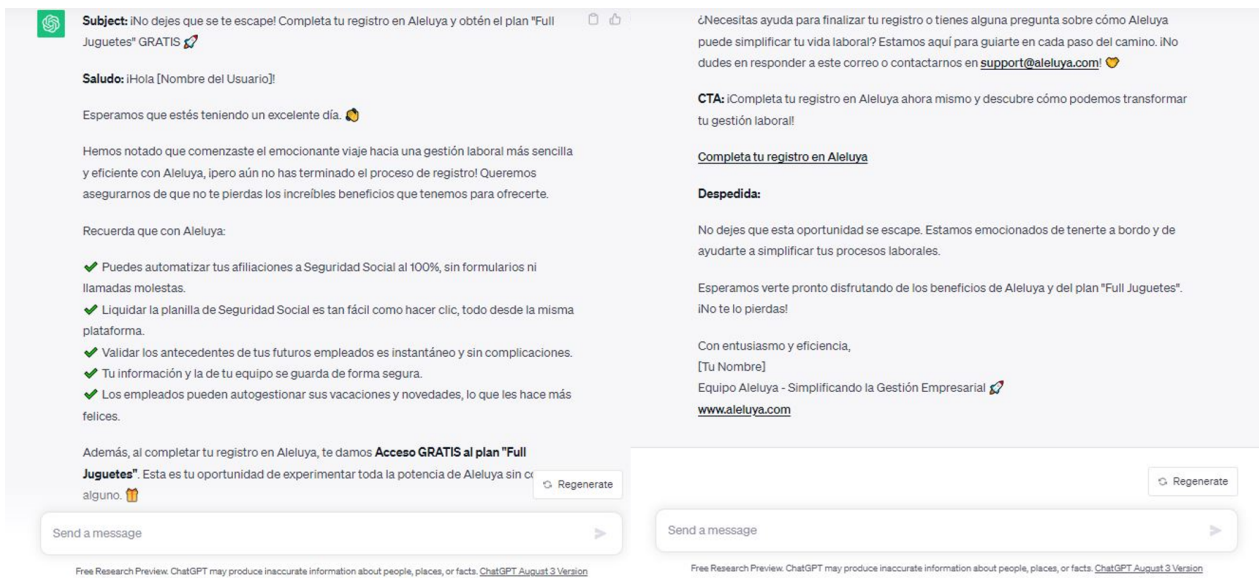


Figure 16. VI of the Fourth copy produced by ChatGPT. Source: ChatGPT.

Although the company only requested the copy for 4 emails, we decided to create an additional copy for the case of users who have not finished their onboarding. This was done with the aim that the company can choose between both copies according to the tone and approach of the brand. In this case, ChatGPT was told to include the expression "This is my last email so it will be very short." In addition, the number of characters was limited to a maximum of 800, so this one was much shorter than the previous copies. Finally, a Temperature of 1 was determined. The following is the result of the prompt.

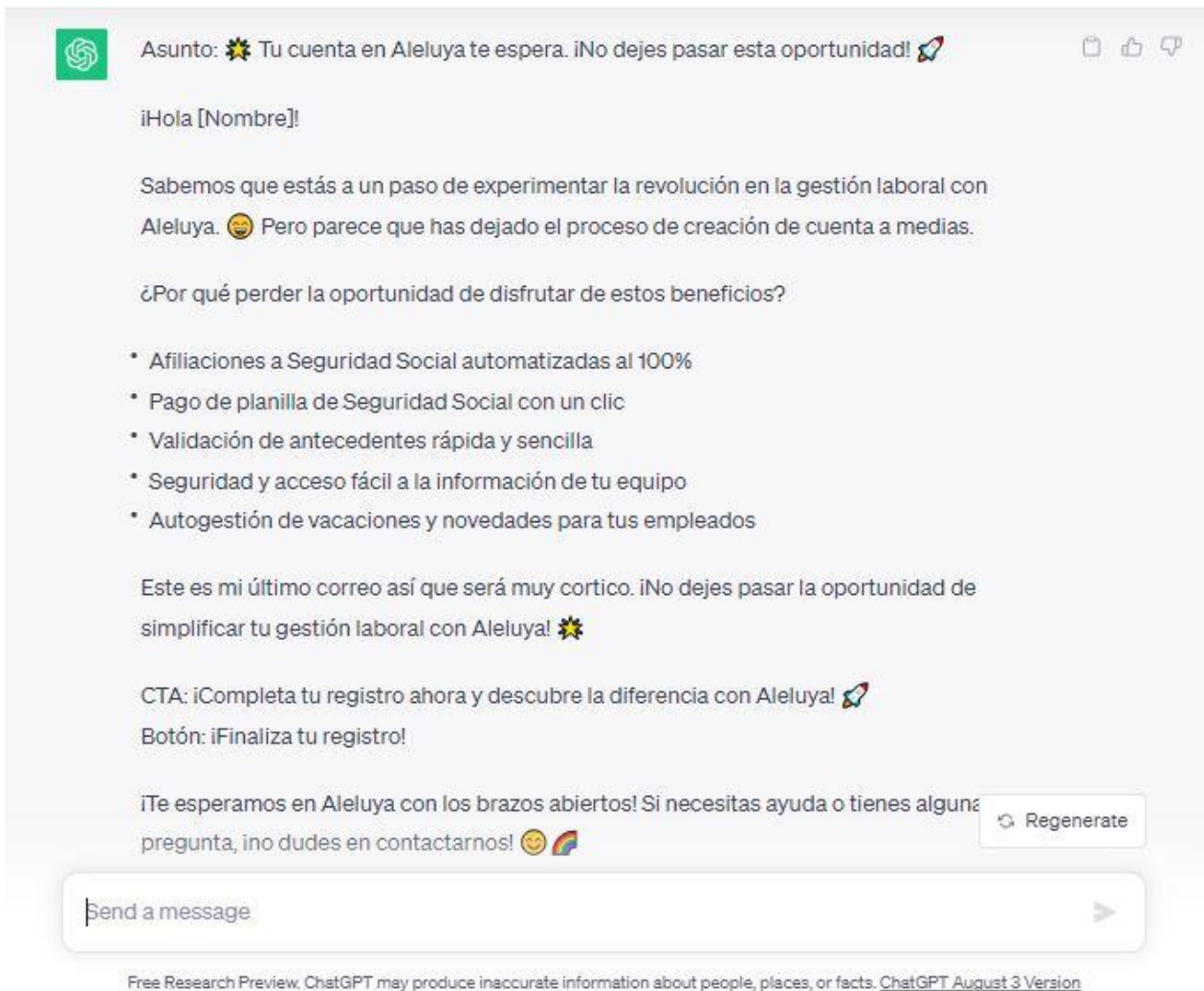


Figure 17. V2 of the Fourth copy produced by ChatGPT. Source: ChatGPT.

Once we had the 5 copies ready, they were exported and slightly modified by me, since there were paragraphs that could be repetitive or the body of the email could become too long. When we considered that these copies were ready, we proceeded to send them to Aleluya's copywriter, who approved them and made slight changes to the subjects according to the company's guide. In the case of the two versions of the fourth copy for users who had not finished onboarding, the copywriter decided to use the second version that appears in [Figure 17](#) since it was more aligned with the brand.

Implementation

Once we had the copies, the strategy to implement the experiment needed to be defined. First, it was defined that the emails would be sent through the current platform that the company uses for

marketing messaging, which is HubSpot. Just to remember, the contact details of cold leads were obtained when the users used the free functionality known as Calculator on Aleluya's website. For this experiment, two workflows were used with the goal of pushing the account creation. The first workflow was for users who have not created an account and the second was for users who started the account creation process but did not finish the process. The first three copies created with ChatGPT will be used in the first workflow and the fourth copy will be used for the second workflow, as will be shown below.

The following is the first workflow for the new cold leads. Once users have used the "Calculator" functionality and have left their personal data, the system validates whether the user has an account in Aleluya or if is an employee. If the user does not meet either of the two criteria, they are created as a marketing contact in HubSpot and from there the first flow is triggered.

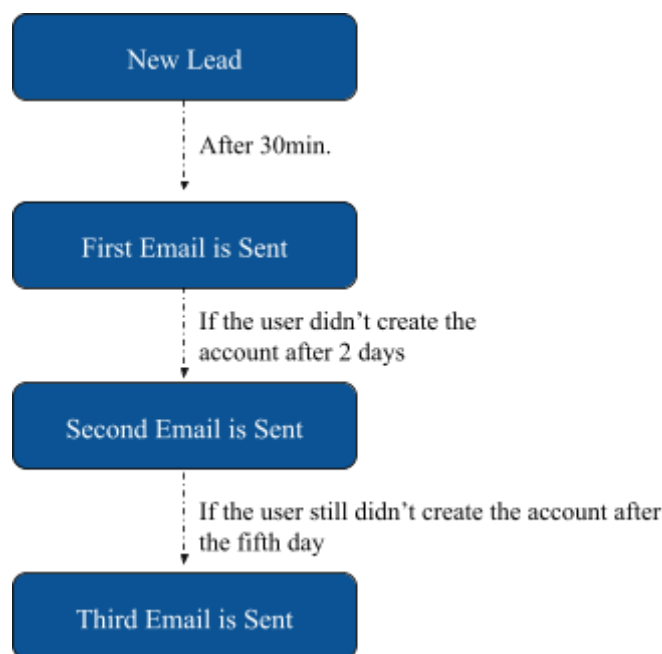


Figure 18. Workflow for cold leads at Aleluya. Source: Aleluya

In the event that a marketing contact in HubSpot has started the account creation process but has not completed it successfully, the second flow is activated. In this flow two consecutive emails are sent to push the user to complete the process.

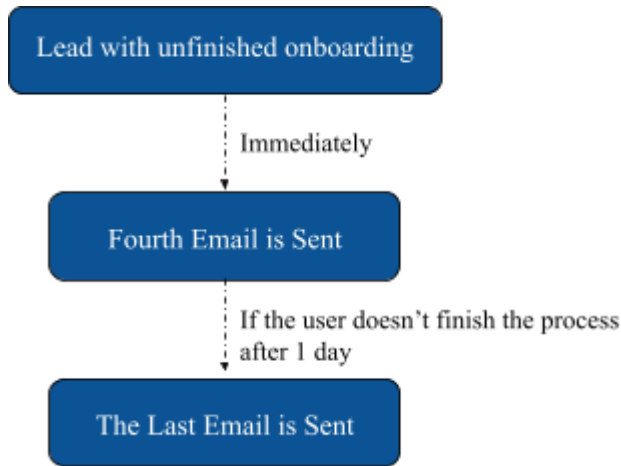


Figure 19. Workflow for cold leads that didn't finish the onboarding process at Aleluya. Source: Aleluya

Once the email sending flow was designed, it was defined that A/B testing would be done for each email campaign. For this A/B testing, the sending segments were selected randomly in order to avoid any type of bias. So, 50% of the cold leads (randomly selected from the database) received version A, which was created by a copywriter. On the other hand, the other 50% of the leads received the version B, which was created by AI (ChatGPT). This is shown in the figure below.

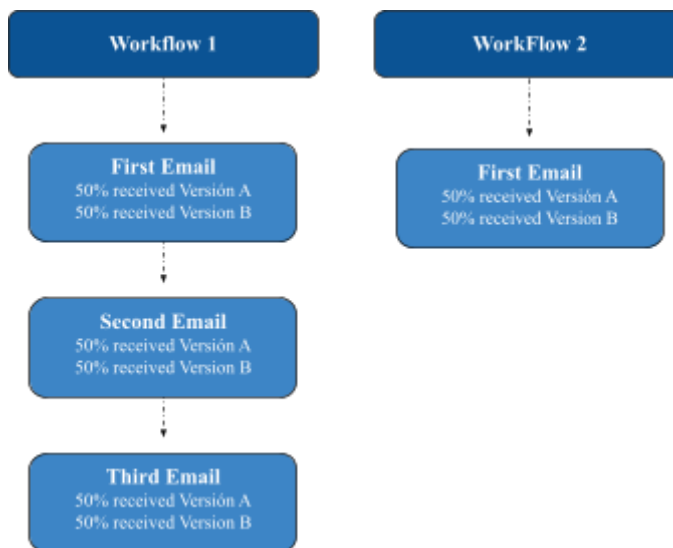


Figure 20. General Experiment Workflow.

Once the strategy was defined, on August 29 the experiment was set up and activated in HubSpot by creating four different email campaigns and it was left active for a period of 2 weeks, until September 12.

Results

The following table shows the two main metrics of each email campaign. The metrics of version A correspond to the copies generated by a human and the metrics of version B correspond to the copies created with ChatGPT.

Email Campaign Marketing	Total Emails Sent	Open Rate Version A	Open Rate Version B	CTR Version A	CTR Version B
First Campaign	653	37%	20%	0,3%	0%
Second Campaign	697	17%	23%	0,2%	0%
Third Campaign	555	23%	14%	0,3%	0%
Fourth Campaign	208	47%	40%	6%	10%

Table 8. Main metrics of the experiment.

Broadly speaking, it can be seen that the average number of emails sent in the first flow is 630, while in the second flow (fourth campaign) a smaller number of contacts were handled since it is a more specific niche. On the one hand, there is no clear trend in the Open rate of the campaigns. But in the case of Click Through Rate, the percentages tend to be zero in the first 3 campaigns, while in the fourth campaign you can see a great improvement in the results. However, since these metrics alone are not very revealing, each campaign will be explained in detail below in order to analyze the results.

First campaign

The first email was sent to a total of 653 contacts, of which 32 emails (4,7%) bounced, so 621 contacts actually received the email. Overall this email had an open rate of 28% which corresponds to 174 unique contacts and which is actually positive taking into account that this is a cold leads database.



Figure 21. Metrics of the first email campaign. Source: Aleluya's HubSpot account.

Version A of this email was successfully sent to 302 contacts since there were 15 emails bounced. This version had an open rate of 37% and a Click Through Rate of 0.3%, which is equivalent to 1 click. Additionally, something to keep in mind is that 10 users requested to unsubscribe from this email list, which is equivalent to 3% and can be a little high.



Figure 22. Metrics of the A version copy from the first email campaign. Source: Aleluya's HubSpot account.

Version B, on the other hand, was successfully received by 319 contacts since there were 16 emails bounced. The open rate of this version was 19% and the Click Through Rate was 0%. The opening rate in this version was 48% lower than the version A, which may be a sign that the subject was not attractive enough for users to make the decision to open it and instead they decided to skip the email, which could indirectly affect the Click Through Rate. In this email, the

number of users who requested to unsubscribe was lower since only 7 contacts did so, which is equivalent to 2%.

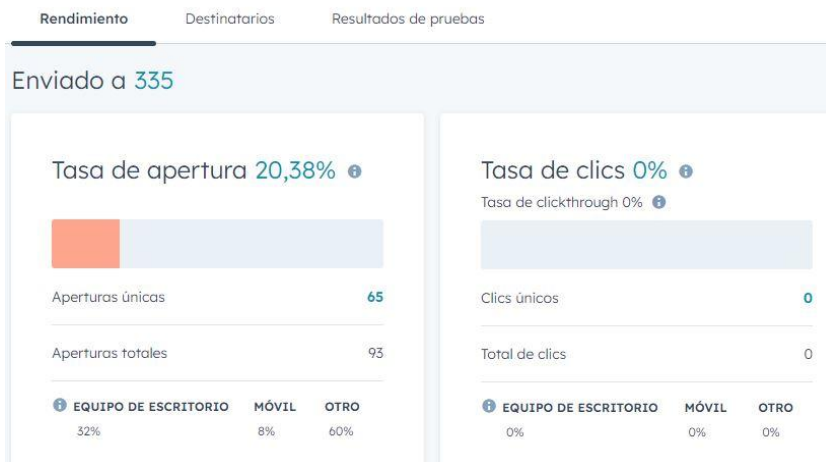


Figure 23. Metrics of the B version copy from the first email campaign. Source: Aleluya's HubSpot account.

Second campaign

This campaign was sent to a total of 697 contacts, of which 1 email bounced (0.1%), so 696 contacts actually received the email. In general, this email had an open rate of 20%, which is lower than the first email sent. This means that only 140 unique contacts actually open the email.



Figure 24. Metrics of the second email campaign. Source: Aleluya's HubSpot account.

Version A of this email was successfully sent to 342 contacts. This version had an open rate of 17% and a Click Through Rate of 0.2%, which is equivalent to 1 click. In this case the opening rate dropped considerably compared to the version A of the first email. The positive factor is that just 4 users unsubscribed from this email list.

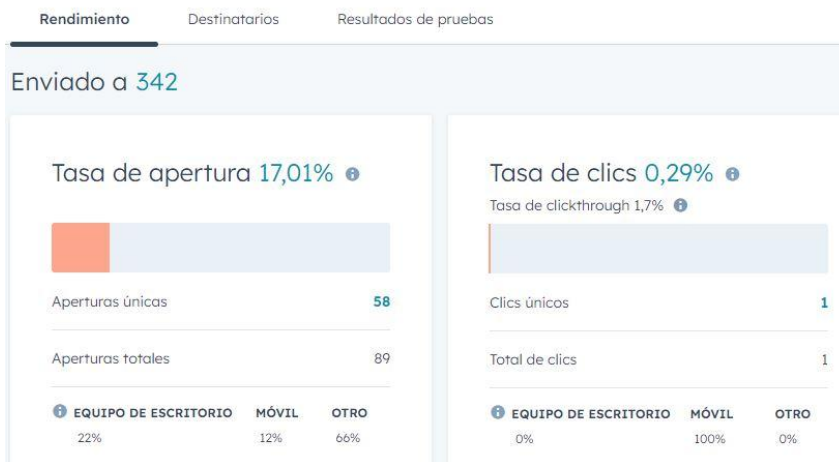


Figure 25. Metrics of the A version copy from the second email campaign. Source: Aleluya's HubSpot account.

Version B, on the other hand, was successfully received by 355 contacts since any mail bounced. Also, the open rate was 23%, which is equivalent to 82 contacts and is slightly high to the A version. For this version the Click Through Rate continued to be 0% which could be a sign that the CTA is not well focused or the leads are not interested in this kind of content. Additionally, the number of users who unsubscribed was also 4 contacts.



Figure 26. Metrics of the B version copy from the second email campaign. Source: Aleluya's HubSpot account.

Third campaign

The third campaign was sent to 555 contacts and there was only one mail bounced, therefore a total of 554 contacts actually received the email. In general, this email had an opening rate of 18%, which was similar to the rate of the second campaign.



Figure 27. Metrics of the third email campaign. Source: Aleluya's HubSpot account.

In this case, version A of this email was successfully sent to 286 contacts. This version had a 23% open rate which was slightly better compared to the version A of the second campaign. It also had a Click Through Rate of 0.3%, which is equivalent to 1 click. The number of users who unsubscribed from this email list remained low since there were only 3.

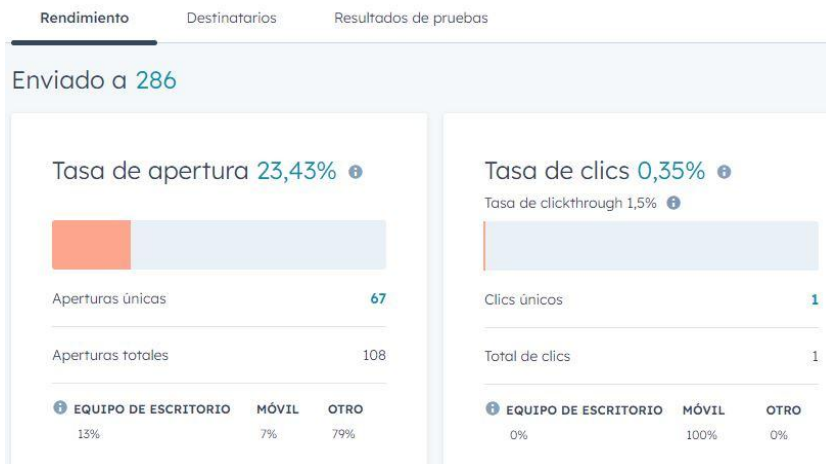


Figure 28. Metrics of the A version copy from the third email campaign. Source: Aleluya's HubSpot account.

Version B was successfully received by 271 contacts since there was only one email that bounced. The opening rate was 14%, which is equivalent to 38 contacts, being the lowest number compared to the previous campaigns. This may have occurred because the subject of the email is not attractive enough, but it may also be because receiving emails from the company has become very repetitive for the leads. Likewise, for this version the clickthrough rate continued to be 0%. Additionally, only 1 user unsubscribed from the emails.

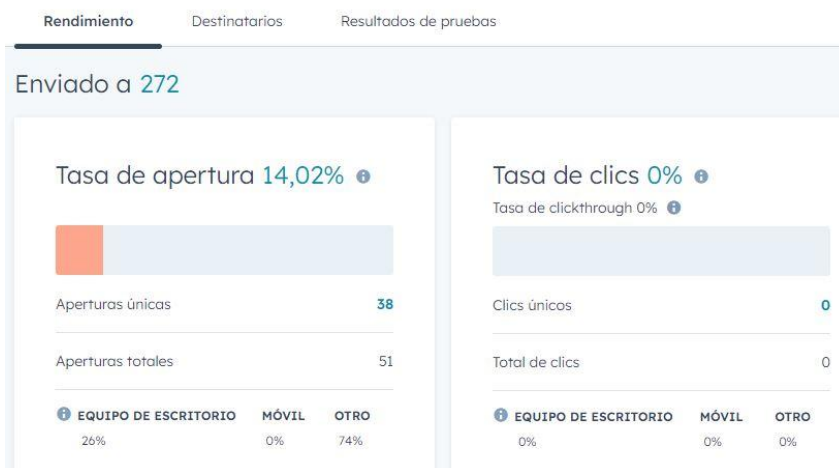


Figure 29. Metrics of the B version copy from the third email campaign. Source: Aleluya's HubSpot account.

Fourth campaign

The fourth campaign is part of the second flow, in which emails are sent to contacts who started the registration process and did not finish it, which is why the contact base is characterized by being smaller since it is more specific. This campaign was successfully received by 203 contacts as there were 5 bounces. In general, this email had an opening rate of 43%, which positions it as the best opening rate of the 4 campaigns. Also the Click Through was highly positive since 8% of the leads clicked on the CTA.



Figure 30. Metrics of the fourth email campaign. Source: Aleluya's HubSpot account.

Version A of this email was sent correctly to 112 contacts, since there were 4 bounces. This version had an open rate of 47%, being the best performance, which is equivalent to 53 unique users. It also had a clickthrough rate of 6%, which is equal to 7 clicks. In this case, no user unsubscribed from the emails which is a good sign that this campaign was better targeted.

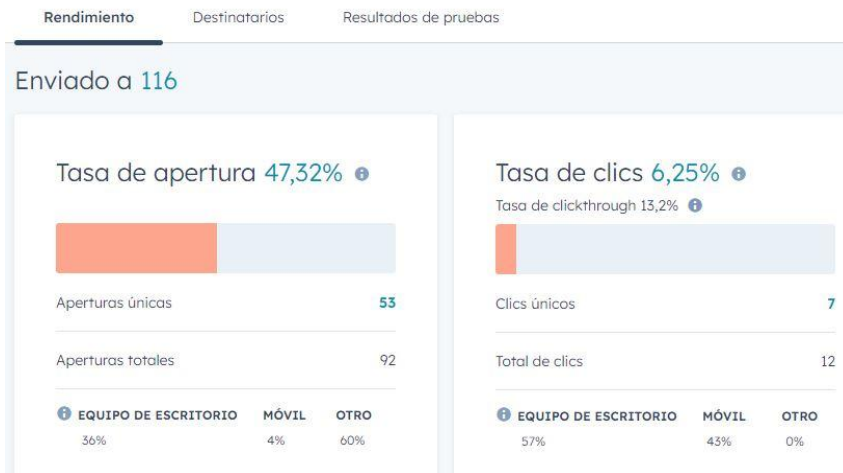


Figure 31. Metrics of the A version copy from the forth email campaign. Source: Aleluya's HubSpot account.

Version B was successfully received by 93 contacts since there was only one email that bounced. If we compare it with version A, the number of contacts taken as a base was slightly lower, however, the open rate was also very good, as it was 40%, which is equivalent to 37 contacts. The click through rate here increased considerably since it was 10%, which is equivalent to 10 users, positioning it as the best performance. Additionally, no user unsubscribed from the emails campaigns.



Figure 32. Metrics of the B version copy from the forth email campaign. Source: Aleluya's HubSpot account.

Limitations

The case study presented has some limitations. The first limitation refers to the number of copies that were used for the experiment, since only 4 copies were tested, which is not a very representative sample. Also, since they were only tested for 2 weeks, the performance of those emails may be affected by other external factors, such as the social situation at that specific moment and the quality and characteristics of the leads approached. These factors can somehow bias the quality of the results and therefore we cannot guarantee that the results will always follow this trend.

Because of that, it is suggested in the future to carry out an investigation with a larger sample, during a longer period and with different types of emails that use different tones. If this is done, we consider it will be possible to have a more comprehensive comparison that allows obtaining a richer vision of the insights.

Also, since the experiment tried to preserve the structure and tone that the company generally uses, this may have limited creativity and irreverence in doing things differently, which could indirectly impact the results of the experiment. It should be noted that we intentionally tried to preserve the focus of the copies to avoid possible barriers or friction when implementing the experiment with the company. Therefore, it is recommended for future experiments to try to break the standardized way of doing things so that notable changes can actually be noticed.

Another limitation in the implementation process was the coordination with the marketing department of the company since the experiment somehow interrupted their work routines, which limited the scope of the experiment. Therefore, it is recommended to have a good margin of time and flexibility when implementing these experiments with third parties.

Findings

The fact that the results have not changed much comparing the copies made by a human against the copies generated by ChatGPT, is a quite positive aspect. This is because it shows that the added value of the human at this moment is not significantly higher to the one generated by ChatGPT, which does have the ability to perform this task in a more efficient way, since it reduces the time invested. In a hypothetical case, if the company decides to start complementing its copywriting activities with ChatGPT, a lot of the employees' time can be freed up, and this time can be used in activities that generate more value. Also with the experience gained with ChatGPT, I could affirm that it can be a practical tool to experiment with changes without investing a lot of time and effort, which helps marketing activities to be more dynamic by making use of new and updated resources.

Personally, I expected slightly higher metrics for the copies created by ChatGPT, but possibly a weakness in the implementation of this strategy is that the person in charge of this activity within the company was not involved in the creation of the copies with ChatGPT. With this, my theory is that if the person in charge of this task appropriates this tool, they can use their experience and knowledge acquired in the company to better focus the copies so that the contacts carry out the desired action.

A hypothesis that arises with the fourth copy is that the reason it performed better is because the body of the email was significantly shorter compared to the other emails. This copy had 494 characters in the content, while the others had an average of 1,100 characters. Also another possible reason why this email performed better in the CTA is because it is focused on a more specific niche, which previously expressed the intention of joining Aleluya. A future recommendation for the company is to test these campaigns with shorter copies and compare their performance in order to really define the impact of the number of characters and be able to consider possible changes in the length.

Additionally, when reviewing why there were always emails that were bouncing, we realized that the contacts who left their data to be able to use the Aleluya functionality, inserted fake emails. This is commonly done by users in order to obtain benefits from the features without inserting personal data that can be used for commercial, marketing or even fraudulent purposes. This is

also a sign that the database being covered for this experiment may have a relatively low level of interest in deepening the relationship with the company, which impacts the results of the campaigns. This may be because possibly these types of leads are only looking to solve a quick task but do not actually need Aleluya's services at that moment.

At a general level, I consider that this strategy, if reviewed and better focused with the copywriter, can have better results, since the subjects, the body and the CTA can be focused in a better way according to the desire that is wanted to be generated in the recipients. In the future it would be positive to experiment with the length of the copies, the time intervals in which the campaigns are sent and the total number of emails that can be sent to this database. Here I mention the time intervals because another theory that arises is that emails can generate friction in users after a while since they are sent in very short periods of time. For this reason, leads can feel bombarded by the company when they do not yet have a very latent interest in its services.

CONCLUSIONS

- AI is a discipline that has developed over half a century, which has allowed it to have solid foundations to get to the point we are at today. Although it means a wide range of opportunities for all industries, the business industry is one of the fastest adopters. In marketing, AI makes it easier for teams to enhance their skills and improve the way they do things. In the case of small companies or startups where resources are highly limited, this can be a good option to carry out activities more efficiently and focus human talent on tasks that generate greater value. ChatGPT is also an excellent option for companies that are rethinking their business models, as it helps improve innovation processes and competitiveness issues.
- In broad terms, the ChatGPT algorithm is based on the probability that certain words hold to continue a conversation and is mainly conducted with raw information available on the Internet, which is not always real, precise and ethical. This means that the model is not perfect and has limitations that must be kept in mind. Therefore, it is advisable that the person who uses ChatGPT has the capacity and criteria to decide whether a response is accurate and ethical. The user must also understand how this model works to know its limitations and strategically define which areas should be automated for this chatbot and which ones do not.
- One of the factors that can limit effective integration with AI tools may be the resistance of workers to use them, since they believe that they can be replaced by them. Another factor may be that employees have not had previous experience with these tools, so they may be predisposed to use them with enthusiasm since it requires them to get out of their routine. For this reason, companies must strategically adopt these AI-driven technologies, which requires reconsidering the way people collaborate with them. That is why it is necessary to work on developing new employee skills and their mentalities so that they can appropriate and empower themselves with these tools.
- Since we don't really know how the ChatGPT model works behind the scenes, for now it is recommended not to insert sensitive or confidential information when training the

chatbot. In the current version of ChatGPT the information provided is saved by the algorithm in its training process and therefore there is a risk that this information could be shown to another user or exposed to the community. Therefore, it is recommended that users strategically provide the training information to ChatGPT.

- Regarding the use of ChatGPT, some good practices to obtain better results are reaffirming if it understood its task to be done, also avoiding ambiguities and jargon in the prompts. Also it is good to start with simple prompts and then iterate by putting more specific details into the prompts. It is also valid to give examples to ChatGPT as a guidance to carry out the assigned tasks. In addition, a good practice is to give feedback to the system in order to improve the results in each iteration. In this feedback, the user should highlight what he actually liked about the answer so that it is not changed and he also should highlight what he did not like with a proposal of how it can be improved.
- ChatGPT can also give long and repetitive responses since it often does not know when to stop, so the system repeats phrases or words several times. Furthermore, the Chatbot in many cases has difficulty maintaining context, since as conversations progress, they can exceed its memory. Because of this it is recommended to set a limit in the characters and change the characteristics of the queries to get different results. Additionally, it's good to remind ChatGPT of details as the conversation progresses.
- According to the results of the experiment, we can affirm that ChatGPT can be a tool that, if strategically implemented by the marketing department, can help reduce the time invested in certain activities by automating a percentage of them. The experiment has also demonstrated opportunities for improvement to have more relevant results. A possible improvement would be greater integration of the copywriter in the process of creating and implementing the copies, so that she, with her expertise, can better focus their creation. Another possible improvement is to test for a longer time and try to be more disruptive in the creation of new copies.
- This research allows us to understand that in order to be able to take full advantage of the potential of ChatGPT, companies must make a strategic implementation. This implies that both the chatbot and the user who uses it should be trained to perform certain tasks. This

is why it is necessary to train ChatGPT with technical and specialized knowledge of the company, and at the same time develop people's reasoning and analytical skills. Additionally, companies must develop plans on how these two actors can collaborate efficiently and organically to meet organizational objectives.

- A suggestion for future investigations is to test the implementation in more than one company and interview the person in charge of creating, managing and tracking email performance. The objective of an interview is to get to know the experiences when adopting ChatGPT and to have a deeper feedback that allows to have a vision of all the parties involved in the process. This could also help identify if the person in charge is really saving time in the medium and long term when using ChatGPT for their activities.
- Also it is good to keep in mind that the world of artificial intelligence is changing exponentially fast and possibly many of the practical details specified in this thesis will no longer be valid in a matter of months. This represents a challenge for people who are in the industry to keep up to date with new developments and be open so that mental limits are not a barrier when it comes to taking business to the next level. It is also important to highlight that it is necessary to develop a critical position to identify what really adds value when implementing it and what are the social limits to take into account.

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