

Will Digital Marketing Teams Survive Generative Artificial Intelligence?

Exploring the transformative impact of Generative Artificial Intelligence (GAI) within digital marketing teams delving into specific business cases, examining how GAI enhances and potentially replaces traditional workforce roles while saving resources (time, money, and workforce).

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by

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Executive Summary

Businesses are encouraged to read the full report to understand how GAI can enhance marketing strategies, improve customer engagement, and maintain competitiveness.

This Bachelor Project explores the transformative impact of (GAI) on digital marketing teams, examining how GAI enhances and potentially replaces traditional roles while saving resources. The study delves into specific business cases, highlighting GAI's systems like ChatGPT, effects on insight generation, content creation, and personalization, while also considering ethical and legal implications.

GAI revolutionizes digital marketing by automating data processing, enabling rapid and precise analysis of large datasets. This provides marketers with valuable insights into consumer behaviour and market trends, leading to more effective marketing strategies. AI-driven data processing not only reduces human error but also enhances market segmentation and competitor analysis. In content creation, GAI offers speed, customization, and cost efficiency. AI-generated content, including text, images, and videos, is quickly produced, and tailored to specific needs. Our study found that consumer preferences vary based on awareness of the content's origin. Unaware consumers prefer AI-generated text, but errand human-created content when the creator is known. While AI content is appreciated for its novelty, human-created content is more trusted, especially when the source is disclosed. Balancing AI efficiency with human creativity is crucial to ensure content remains engaging and authentic. Personalization is improved by GAI, which tailors marketing messages and offers to individual customers. This includes targeted ads, personalized chatbots, and personalized campaigns. Continuous adaptation and data processing ensure marketing efforts remain relevant and effective, enhancing customer experience and loyalty.

Ethical and legal considerations are crucial as GAI poses challenges like data privacy concerns and potential job displacement.

GAI offers substantial advantages in digital marketing, increasing efficiency, enhancing personalization, and improving content creation. While AI can replace some functions, it is more likely to augment human capabilities, creating a synergistic relationship between AI and human intelligence. This balance preserves creativity and emotional connection with audiences. The future of digital marketing will benefit from this collaboration.

Keywords: *Artificial intelligence (AI), Generative artificial intelligence (GAI), digital marketing, Artificial General intelligence (AGI), Ethics, regulations & perception.*

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1. Introduction

Generative Artificial Intelligence (GAI) is an expanding field with vast potential. Some experts predict that GAI could replace up to 80%¹ of the workforce in the short to medium term. At the same time, other specialists foresee the creation of 97 million jobs² due to this technology. This raises a critical question: Is GAI a transformative force that will revolutionize the world like the printing press or the internet, or is it a temporary trend that will fade away with new advancements or regulatory changes?

Blackrock was among the pioneers in implementing artificial intelligence with their Aladdin system (Asset, Liability, Debt, and Derivative Investment Network³). For over 25 years, they have leveraged this technological tool, gaining a significant competitive advantage with over \$10,000 billion⁴ in assets under management. Experts agree that AI is a central topic in the evolution of marketing. Companies face a pivotal choice: embrace this advancing technology or risk falling behind. This decision will undeniably shape their futures. Furthermore, our survey reveals that most consumers believe AI is already widely used in digital marketing, with 100% of respondents affirming this perception.

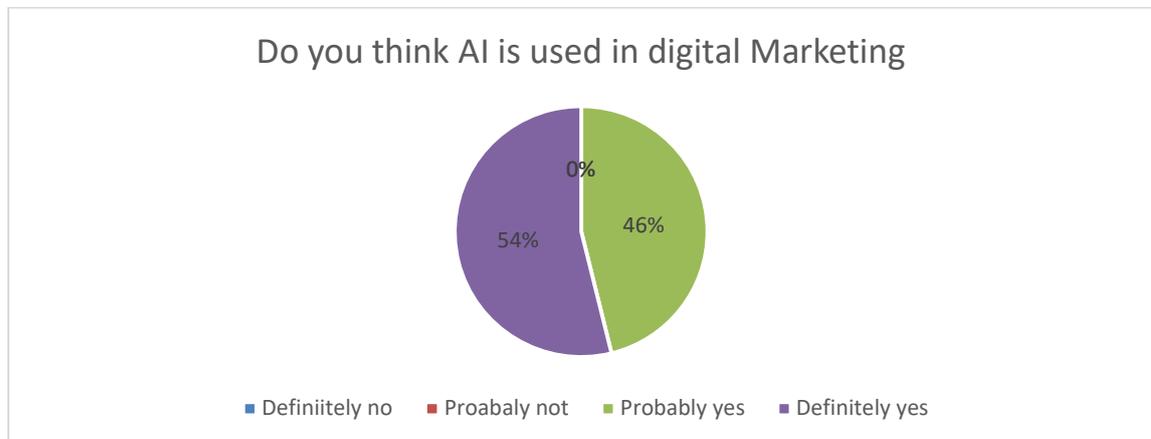


Figure 1, Do you think AI is used in digital marketing.

This forecasts the expectations of consumers when coming to the implementation of AI in digital marketing.

¹ Viewed from : [L'IA pourrait remplacer "80% des emplois" dans les prochaines années \(levif.be\)](#) [Online, 03.03.2024]

² GRANDI, Rolan, August 2023, L'intelligence artificielle comme copilote ! *Point de mire* #89 Pp. 36-37 Viewed [30.11.2023]

³ Viewed from : [Aladdin® by BlackRock - software for portfolio management](#) [Online, 03.03.2024]

⁴ Viewed from : [BlackRock-Les actifs sous gestion atteignent \\$10.000 milliards | Investir \(lesechos.fr\)](#) [Online, 03.03.2024]

2. Research Methodology

2.1 Objectives

The objectives are to be able to understand the concept of AI in the scope of digital marketing. To do so we will first conduct general research on these two concepts, specifically defining what they imply and how they can be connected to improve or replace digital marketing teams. We will be looking at specific business cases and conducting interviews with AI professionals working or having a deep knowledge of marketing. The goal is to study the transformative impact of GAI in digital marketing but also to look at the perception and preferences of customers when AI is used for marketing purposes as ultimately, it's the customer that decides whether they like the content or not. We will also look at the ethical and legal implications of AI when used by professionals.

2.2 Approach to Theory Development

2.2.1 Data Collection

2.2.1.1 Primary Data

The primary data is the one we collected for the purpose of this study, we conducted interviews with AI and marketing specialists, Dr. COMTESSE, Xavier, GIESLER, Markus and CHOSCHNAU, Bejan that will give us their insight on the subject. They are respected professionals in their domain. We will also conduct a survey with a general sample of regular customers regardless of their gender, geographical or financial situation to assess the way they perceive the use of GAI in the creation of digital marketing content. There was only one prerequisite to participate in the study, which was to be over 18 years old to ensure that we received only answers from general consumers. The survey is divided into 7 questions⁵, half of the participants only sees the content and the brands, but they don't know who or what created it. The other half see the content with a note on how it was created. It is written under the texts or images whether it was created by a marketing team or by ChatGPT. When introducing the survey, we do not mention AI for both groups, telling the participants that it's a survey about the perception and appreciation of marketing content.

⁵ Cf Appendix 13.4 & 13.5, Survey about perception and preference of AI created content.

In the last part, after they have chosen the content they prefer, they are asked about their familiarity and appreciation of AI to assess if participants can tell first if content is created by AI or not and how they perceive it.

2.2.1.2 Secondary Data

The secondary data is the one already collected by others which will be analysed in this work. There are a considerable number of studies about AI in each specified case regarding digital marketing. We will analyse our subject through those studies and try to give a precise point of view on the possible future.

3. Generative artificial intelligence

To understand well the concept of artificial intelligence we need to look both at the past and the future of this evolving technology. It's likely to say that it all started the 22nd of July 1933 with the "*mechanical brain*" patented by Georges B. ARTSROUNI (2014 – HUTCHINS). Even if all professionals don't agree on the genesis of AI, his machine presented at the "*mechanography exhibition*" in Paris in 1937 was created to translate

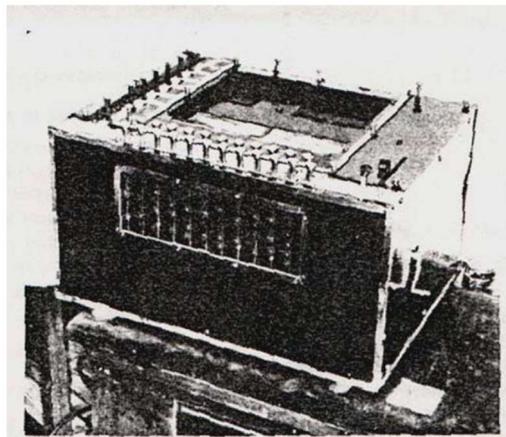


Image 1, *The mechanical brain*

languages but the potential usages were huge, "*it could be used as an automatic telephone book, a train timetable, a city guide, a dictionary in all languages, a table of logarithms and as an instrument to get information about commercial telegraph codes*"⁶. Due to the enormous technological advancement, it brought, ARTSROUNI won the main prize. In the scope of that thesis what really matters is the date when artificial intelligence became generative. According to Cambridge dictionary, what distinguishes GAI from AI is the ability to learn from data supplied to it⁷.

An analogy to exemplify the difference between AI and GAI could be:

AI (Artificial Intelligence): Think of AI as a car. A car is created with a specific purpose and has limitations on its usage. It can be driven from one location to another and navigate roads, but it will always remain a car and cannot perform tasks beyond its design. Similarly, AI is programmed to execute certain functions and cannot adapt or understand tasks outside its predefined scope.

GAI (General Artificial Intelligence): Now, think of GAI as the driver of the car. The driver can perform a wide range of tasks beyond just driving. The driver can navigate to new places they've never been before, make decisions based on changing circumstances, and even get out of the car to fix it if it breaks down. The driver can understand, learn, and adapt to various situations in ways that the car (AI) cannot.

⁶ Viewed from : [Georges Artstrouni: The Mechanical Translator : CafeTran \(freshdesk.com\)](#) [Online, 07.03.2024]

⁷ Viewed from: [generative AI | English meaning - Cambridge Dictionary](#) [Online, 13.03.2024]

If you ask the main interested party, GAI itself:

“Generative Artificial Intelligence is a subfield of artificial intelligence that focuses on generating content or solutions from a model learned from data⁸.”

The first attempt to create such a technology was in 1950 with the collaboration of computer scientists and psychologists. Many systems able to create more and more content were developed but the real turning point happened in 2014 with the creation of Generative Adversarial Network (GAN) by GOODFELLOW, Ian (2015) and his colleagues during their research on Artificial neural networks and deep learning.

GAN was a groundbreaking technology because it allows one to generate content that is, in theory, indistinguishable from real examples. To do so they use two systems the generator, which will create new data and the discriminator which will verify and evaluate the quality and usability of the data. Both systems collaborate indefinitely to give the best possible output. Combining GAN with AI, Generative artificial intelligence was born. All in all, GAI is not a new technology, but it became mainstream in 2022 with the release of ChatGPT by *Open AI*⁹.

Nowadays, three categories of AI are used to describe the present and the future; first is the Artificial Narrow Intelligence (ANI), the phase we are experiencing in 2024. This so-called weak form of AI is what regroups all kinds of AI available today. They work very well but they remain only within the limits of the scenario we implement to them even if they can replace many human capabilities (2018 - MIALHE, HODES). The next step that is likely to occur in the upcoming years is Artificial General Intelligence (AGI) which will distinguish itself by the capability of being autonomous at the performance of human tasks. With AGI, no inputs would be needed theoretically whereas in an ANI you need to ask a specified question to get the right answer in the limits of the software. AGI will not need that learning phase.

The last type of AI, which is more in the domain of science-fiction now, is to give AI consciousness.

⁸ Asked to ChatGPT: [ChatGPT \(openai.com\)](https://openai.com) [accessed, 13.03.2024] Prompt used “*What is generative artificial Intelligence?*”

⁹ Viewed from : [A Short History Of ChatGPT: How We Got To Where We Are Today \(forbes.com\)](https://forbes.com) [Online, 13.03.2024]

One may say that none of the system available or that can be created would never been strong enough to replicate consciousness due to the complexity of calculation it would require (2020 - DONG, HOU, ZHANG,) while other argue that due to the rapid evolution of the domain, conscious AI will be possible (2023 - BUTLIN, LONG). On that last point nothing is sure, and opinions differ, even if most specialists are saying that it's science fiction.

Adding to the AI types, it's worth mentioning Machine learning (ML) at this early stage of the research as many digital marketing teams are using data and ML to process data. ML is a field of artificial intelligence that is using computational algorithms to analyze data and then learn from them in order to readapt their findings (2025 - EL NAQA, MURPHY).

Machine learning can be used in any field that have past data usable to forecast the future where an adaptability could be useful. In the scope of this work, we will mostly associate ML with the processing of Big Data. Big data is the combination of varied data arriving in increasing volumes at high speed, in other words, big data is computing and treating a colossal amount of data allowing the resolution of problem that could never have been resolved by human due to the large amount of data analyzed (2016 – EREVELLES, FUKAWA, SWAYANE). For this thesis we will mainly discuss ANI as it's already usable but to be able to forecast the possible future of GAI in the scope of digital marketing we will also consider AGI as it could be relevant in our goal to spot a possible competitive advantage and as AGI could be implemented soon, with for example Q*, an algorithm system that will be able to resolve advanced mathematical problems, which is in development by *Open AI* and very close to AGI (2024 - COMTESSE, EICHENBERGER). Due to the clear uncertainty and the fact that Artificial super intelligence (ASI), (2023 - SMINK) is seen as a fabrication over a real concept and the obvious advantages a conscious machine would give, we won't be considering the conscious AI.

	ANI Artificial Narrow Intelligence	Learning to imitate the human brain
	AGI Artificial General Intelligence	Intelligent machine with adaptive capabilities
	ASI Artificial super intelligence	Conscious machine

5. Literature review, state of the art

So far, there is almost no doubt, according to various studies and interviews conducted, that marketing will evolve significantly due to the increasing use of artificial intelligence. The four "P"s of marketing (Product, Price, Place, and Promotion), popularized in the 1950s by Neil Borden (2024 - TWIN), have been the dominant trend in marketing and are still taught in universities today. However, they will need to be adapted to the Artificial Intelligence revolution. AI will undoubtedly impact the way marketing is practiced and taught, but to what extent and what competitive advantages will it provide to firms?

In that sense, there is a large survey conducted by Oracle and Columbus consulting in 2024 assessing the use of GAI in Swiss based companies. They asked 35 questions to 75 companies from small to multinational that were in all sectors of activity with different yearly revenue.

This study is very complete and regroups seven themes that are company profile, priorities, data prerequisites, AI maturity assessment, current AI offering, AI usage & application GAI usage and application. Calculated according to the answer, for most of the companies, Marketing is the business domain in which they are the most likely to invest followed by customers service and operation. The activities that are less likely to see GAI being implemented are finance and human resources.

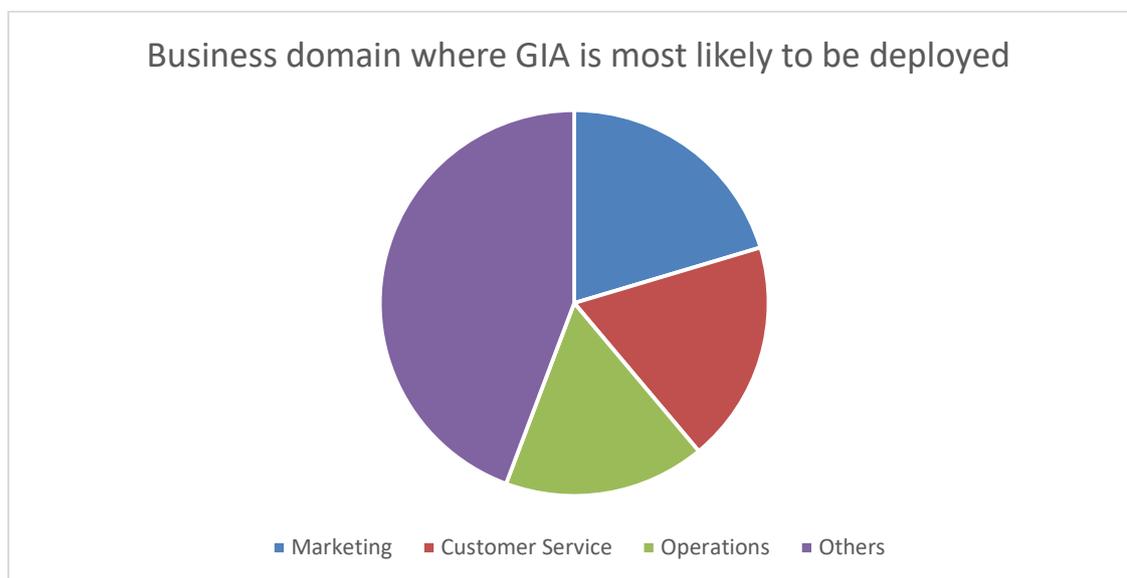


Figure 2, Business domain where GIA is most likely to be deployed.

We can see in this chart a clear willingness of the companies to use GAI to enhance customer experience and not so much for internal affairs.

Many articles were analyzed in this study, such as Generative artificial intelligence in marketing: Applications, opportunities, challenges, and research agenda written by Mister KSHETRI, Nir a specialist and professor at the University of North Carolina. His findings so far are that the GAI is very useful and should be used by enterprises, but his research is limited to some business cases and doesn't take into consideration the competitive advantage. Adding to this, it's not considering the ethical point of view and it considers AI almost as a workforce and not as a tool.

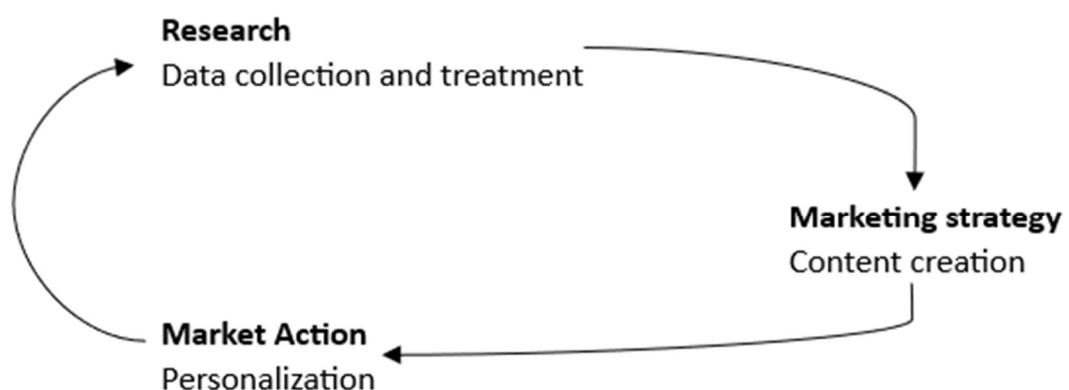
We are planning to implement specific business cases and find the reason or not to use it within enterprises, which is the specificity of my study. Other studies take into consideration only the data collection and use, such as the study of HURET Augustin, and HUET, Jean Michel, where it's only discussed the technical use of GAI but not all the possible content creation and personalization that is possible. Other articles are implicitly warning people on the use of AI and the ethical aspects of it such as the article of OOI, Keng-Boon where it's said that AI is a growing field but professional should be careful with the security and privacy issue adding to the lack of human touch. This research will take into consideration those different points of view and coordinate it with survey to be the first study that gives a clear insight on the business case where GAI can be useful and where it can be implemented. All in all, studies are conducted in specified fields of general marketing such as personalized chatbot only or advertisement but there is no study taking into consideration all the business case that will be analyzed. The perception is also not analyzed in the different studies conducted and finally as it's a growing field, recherche are coming every week and AI is evolving, this study will try to forecast the future of AI in digital marketing.

6. GAI in Digital Marketing

Now that we understand what GAI is and what digital marketing implies, we can apply those findings and possibilities to digital marketing through business cases distributed into three main subjects:

- **Insight Generation:** This involves data processing, data collection and treatment.
- **Content Creation:** This encompasses the creation of text, images, and management of marketing content.
- **Personalization:** This focuses on personalizing marketing strategies to target individual customers effectively.

The goal is to explore for each case what AI can do, how it can be used, assuming the development of AGI, and whether it can provide a competitive advantage to digital marketing teams. The business cases are organized as a funnel, starting with data since it is the input allowing the generation of content, which is the second phase. We will conclude with personalization capabilities, which will give us the closest set of skills to a marketing team. Nonetheless, AI tools can be used sequentially as an ongoing automated process.



7. Findings on business cases

Insight generation in marketing relies on the collection, processing, and utilization of data, with AI playing a critical role in automating these processes. Data is the foundation of GAI, and its availability directly influences the quality of AI-generated outputs. AI systems like *Open AI's* ChatGPT 3.5, 4, 4o and *Infona's* Ella highlight the importance of data in creating tailored user experiences and automating complex tasks.

Automated data processing allows marketers to efficiently analyse large volumes of data, providing meaningful insights and trends that drive data-driven decisions. AI enhances the ability to collect and process data from diverse sources, enabling precise market segmentation and competitor analysis. This capability is crucial for understanding consumer behaviour and developing effective marketing strategies.

In content creation, AI democratizes the production of marketing materials, from text and images to videos and voiceovers. While AI-generated content offers speed and customization, it also raises concerns about authenticity and the potential for misuse, such as fake contents or deepfakes that is defined as *“any of various media, esp. a video, that has been digitally manipulated to replace one person's likeness convincingly with that of another, often used maliciously to show someone doing something that he or she did not do¹²”*. Despite these challenges, AI's role in content creation is expanding, with future possibilities including automated video generation and personalized advertisements.

Personalization in marketing has evolved to offer unique consumer experiences, driven by AI's ability to adapt and reprocess data continuously. Targeted advertisements and personalized chatbots illustrate how AI can tailor interactions and recommendations, enhancing customer satisfaction and engagement. AI's potential to create hyper-personalized marketing campaigns further underscores its transformative impact on digital marketing.

Overall, AI's integration into marketing processes, from data processing and content creation to personalization, offers significant advantages. However, it also necessitates careful management to ensure data privacy and maintain a human touch in marketing strategies. As AI technology continues to advance, its role in marketing will expand, providing even more sophisticated tools for marketers.

¹² Viewed from: [deepfake, n. meanings, etymology and more | Oxford English Dictionary \(oed.com\)](https://www.oed.com/dictionary/deepfake_n-meanings-etymology-and-more) [Online, 28.04.2024]

7.1 Insight generation

We will be looking at insight generation in the sense of the way data is collected, processed, and used for GAI in marketing. Data is the most important parameter when talking about GAI as the data you implement into it represents the output you will be able to generate afterward. An example given by Dr. Xavier COMTESSE is that to create a specific AI for doctors would be very difficult as a non-negligible part of the material used is not available online but in books, given orally to students or transmitted from a professional to another (2024 – COMTESSE). GAI needs data to live and if the access to data is denied, then it's not able to create content that will be correct or relevant. *Open AI* and most AI companies understand this concept and they are using the data provided to them to expand the capabilities of their AI. When connecting to ChatGPT you have the following message the first time “*Don't share sensitive info, Chats may be reviewed and used to train our models¹³.*” All the prompts or documents that are used in ChatGPT become the property of *Open AI*, on the other hand everything extracted from it becomes the user's copyright. This looks like a win-win proposition in the first place but nowadays data is one of the most valuable assets a company can process; it can be general knowledge or personal information about users, but all is used to closely imitate human intelligence. When using Ella the artificial intelligence from Swiss-based company *Infona Limited*, you have a first phase where it only analyzes the way you are working and interacting with people within your company, that's the moment where it collects data, afterward Ella become your personal assistant, giving you relevant information according to your position, writing you e-mails in the appropriate style depending on the person you are talking to. The system adapts to you and offers a personalized experience thanks to the data it has collected about you.

AI can be used in the three stages of data usage, first allowing automated data collection, secondly to propose analysis of the data and last to suggest a way to use it. We will use those three steps specifically, to look deeply at automated data processing as AI can process a huge amount of data rapidly and at Search engine optimization as with their algorithms AI is able to identify patterns, competition, and user behavior to optimize SEOs. Nevertheless, it's worth mentioning that collecting, storing, and using data needs to be very carefully done by companies due to the sensitivity of the information. That's why there are more and more companies creating their own AI systems.

¹³ Viewed from [Safety & responsibility | OpenAI](#) [Online, 10.05.2024]

7.1.1 Automated data processing

Automated data processing is the field where GAI can automate the process of large volumes of data to extract meaningful insights and trends, helping marketers to make data-driven decisions more efficiently. According to a study 76% of customers expect the enterprises to understand their needs and expectations (2021 – NALINI, RADHAKRISHNAN, YOGI, SANTHIYA, HARIVARDHINI).

AI allows enterprises to collect data from many different sources and use it rapidly which wouldn't be possible for a human to perform as well. So far there is no doubt that you need systems to help you with the collection and the process of your data, tools have evolved through the years allowing a better understanding of consumer behavior. Research shows that the use of AI in this field can provide a better insight, a more detailed analysis, identify prospective customers and reduce errors (2021 – NALINI, RADHAKRISHNAN, YOGI, SANTHIYA, HARIVARDHINI). The first step is, as in conducting market research, for the AI to collect information over the competitors, the environment, the customers which is not too complicated in a digital world, but not only, some data is now collected live analyzing customer habit within shops and collecting personal information such as age or gender, or more detailed information such as the way they interact with the product. The data collection goes even further with the collection of psychographics information and opinions (2021 – HUANG, RUST). Once the AI possesses the information about the customers, it can analyze it and classify the data to create segmentations which mean that with the data it can create specific customer groups.

Additionally, it can represent the company in relation to their competitors, this is the last phase where data and outcomes are integrated into other sources to give a broader view and generate insight. This isn't new, as computer data has been collected and analyzed for a long time, but the AI can do it faster and adapt the findings easily, reducing human error. All marketers know that the more data he has and the more precise they are, the more he will be able to propose a tailored solution for his customers. In this part about data there is no doubt that the advantages are huge.

One way to take advantage of the automation of data to enhance marketing strategies and decision-making can be done as follows; First companies will use an ETL (Extract, transform and load) system. The first phase is the extraction, where companies will collect the data from the given source, (social media, Customer Relationship Management system, website...). The second phase, transformation consists of normalizing, organizing, and getting rid of superfluous data. After this the data is usable for you to analysis.

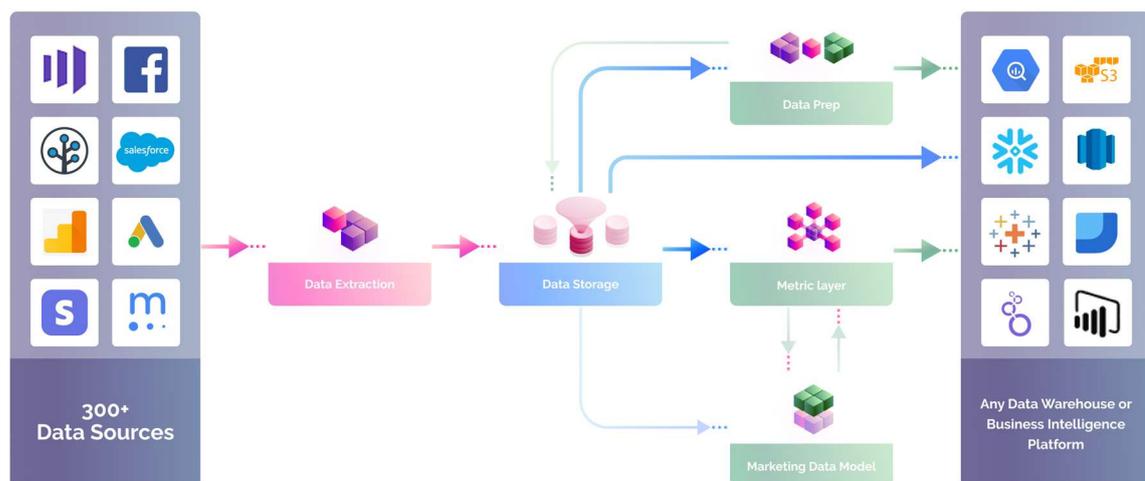


Image 2, how ETL works

There are dozens of different ETL systems available online which show the democratization of AI usage in this field. Another advantage brought by AI in the domain of data processing is the ability to analyze images and video. This used to be a skill limited to human capacity but as AI grows, it's now possible to analyze more than just data for automated systems that can also extract information from different sources such as media. This gives a complete advantage to AI. Added to this, it's a very repetitive process and apart from setting up the machines it requires fewer skills nowadays. All the interviewees agreed on the fact that it's typically the type of mission that must be subcontracted to GAI with a strong emphasis on data privacy.

Automated data processing is now seen as a tool, but in the future with the possible evolution of GAI, there is no doubt that this tool will evolve and extend the possibilities. The systems will be more autonomous over time, and therefore be able to process the data 100% automatically, needing humans only for quality controls (2024 - CHOSCHNAU). Another example of a digital marketing tool that could be enhanced by the increasing use of GAI is Search engine optimization (SEO).

It's the process by which companies increase the traffic on their websites by simply being well referenced. Companies analyze patterns to use specified keywords or vocabulary which will lead to better references. The trend in the domain is data-driven SEO, which consists of collecting data from different sources such as websites, google analytics, or specialized SEO algorithms then analyzing and using the data to create a digital strategy. Research conducted by YUNIARTHE, Yodhi in 2017 stated that *"96% SEO experts states that SEO strategy can benefit more if associated with AI, 73% agreed that AI can analyze the data for SEO needs, 61% said that AI can help locate anomalies in their SEO strategy and fix it, 58% believe that AI allows their SEO strategy to beat its competitors, 49% even think that AI can beat Google RankBrain technology, and 41% considered that AI eliminates the need for exact phrases as keywords¹⁴".* As SEO comes from data and its analysis, it seems logical that GAI can give a clear competitive advantage, but the nuance comes from the fact that the technology might evolve to its paroxysm. Dr. GIESLER, Markus explained that, as SEO is done through algorithmic systems, and as those systems are purely logical, it could lead to a decrease in the effectiveness of SEO (2024 – GIESLER). The reason behind this is that as algorithms are now working with each other in a very formal and logical way, human touch is lost which leads to a decrease in the effectiveness of SEO. The keywords analyzed by a GAI, or the data extracted to create an efficient SEO might not reflect the customer's expectations. Nevertheless, He warns us on the fact that the barrier between companies will grow as those systems are expensive and only big companies will get an advantage out of them. However, the two other specialists interviewed tend to explain that access to AI will reduce the difference between companies as more GAI systems will hatch, which will lead to a democratization of SEO and data processing.

After looking at the data processing that can be done through the machine as it's a very repetitive task, we will now tackle another field of GAI in the scope of digital marketing by exploring whether a machine can create content and if this creative task can be handled by an artificial intelligence.

¹⁴ Viewed from [IEEE Xplore Full-Text PDF](#): [Online, 16.05.2024]

7.2 Content creation

After the data are collected and analyzed, neither the marketing agencies nor teams will need to come up with a marketing strategy through content creation as to be able to create content you need to have deep knowledge on the topic you want to talk about which is done through research. Next, we will be looking at what content creation implies in the sense that it's the logical step coming following the process of data. Once this is done, you will need to decide on the form of your content according to your strategy and then produce it. Content creation can be defined as all the material produced and spread to transfer information, in the scope of marketing it's all the content that can be used to advertise products, services or the company. Content can be created in many different forms, it can be images, videos, text, social media post etc. and it can be shared on many different platforms, just for videos the list of possibilities is huge, this is a non-exhaustive list: YouTube, TikTok, Instagram, Facebook, Television, or physical screens. Content creation is a task that requires a lot of skills such as photography, creating images and videos, using systems such as Photoshop or Adobe, writing capabilities and many others. But even if that knowledge is part of your team, you will mostly need disruptive Ideas, content marketing is not necessarily expensive but needs to be well thought out and planned to be efficient. With the rise of artificial intelligence, the new subject regarding content creation is Artificial Intelligence Generated Content (AIGC) and studies conducted on the subject in 2024 show that due to the increasing possibilities of GAI models are giving rise to an increase in the possibility of content creation (2024 - GUANGYUAN, HONGYANG, DUSIT). The reasons behind this are the democratization of images created by AI using only text prompt, the rapidity and ease of the process of the final content, the quality of the content created and the customization and possibilities of personalization which we will discuss later. This was confirmed by all the specialists interviewed with an insight from Dr. COMTESSE Xavier that stated that 3000 books written by AI were already submitted every day to Amazon to be published he also explained that this will probably be the case with movies in the future (2024 – COMTESSE). This was confirmed and completed by Mr. CHOSCHNAU, Bejan, who noted the fact that movie stars could be paid only for copyright and the right to use their image in movies. Another type of content that raised with AI is the text-to-Speech Generation for Product Advertisement: GAI can generate human-like speech from text, enabling the creation of audio advertisements or voiceovers for marketing materials.

If done this way, it's a great tool for marketers and it can help in the creation of promotional videos, but this has led to a lot of deepfake content such as a video of dictator Kim Jong Un promoting the American brand Coca-Cola. This is where the warning should be issued, as GAI democratize the creation of content, a lot of fake promotional videos or fraudulent content can emerge, which could lead to a loss of trust for the brands. Moreover, so far, those videos created by AI are mostly not so well-made and an informed public can see the difference with human created content which once again could cause a loss of authenticity in the content. Considering these possibilities it's not hard to see the future of content creation being completely reshaped using GAI.

Dr. GIESLER, Markus is once again the most pessimistic regarding content creation and its evolution, even if the possibilities of creation are huge through AI you still need to implement the right prompt and adapt the content afterward (2024 – GIESLER). This means that you still need the creative side and Ideas to know what you want to create. Putting all of this together, we can see GAI as a great tool for marketers for the moment. What still needs to be seen is how the content created by AI will be perceived and accepted by customers which will be analyzed according to the study.

7.3 Personalization

After looking at insight generation using data and at marketing strategies in the sense of content created, we now can handle the last part of this research which is personalization. As stated before, it's an ongoing process, so when personalization is reached, the process starts again and again to adapt itself, that also where GAI can be a clear advantage as it can automatically adapt and reprocess all this process.

Since the accessibility of the product is not the main concern anymore, marketing teams need to change their behavior and allow their consumers to feel special while being part of a group. This is how the concept of personalization began (2021 – SHOBHANA, SANJEEV, WENG, SATISH, NAVEEN). With the increasing competition, you need to be unique in some way if you want to be able to generate profits. Enterprises saw the benefits of tailoring products and services with a one-to-one way of thinking that will lead to customer value perception. But before being able to personalize your offer you first need to know your customers and collect data about them to be able to use that data to create personalized offers. Regardless of the type of personalization marketers are using, there is a clear goal for using it, creating an experience for the consumer which helps to retain them and supports cross selling. Apart from the cases we will be analyzing. Personalization can also be used to provide products recommendations, adapt the user navigation on the website and target users (2022 – DARSHANA). Personalization is a field that requires data collection and data processing, it's doable for small companies or companies that have the duty to know their customers such as banks or insurance companies. For example, The UBS has millions of clients worldwide and each of them must answer several questions before entering a relationship with the bank to ensure that they fulfill their duty of fighting money laundering and terrorist financing¹⁵. Additionally, all the clients using their payments facilities or other services are giving them a huge set of information about them. It's not likely to see an enterprise like UBS selling that data due to the risk it would represent, and the regulations, but it would be very foolish of them not to use that data to adapt their offers and create a more tailored business model. Asking an individual or even a team to analyze all this data would be impossible so they will need to process it with different tools. In conclusion, if they hypothetically wanted to use and adapt their findings with the evolution of the market it's likely to see them using machine learning or artificial intelligence as without it, it wouldn't be possible.

¹⁵ Viewed from: [Fighting money laundering and terrorist financing \(admin.ch\)](#) [Online, 04.04.2024]

The purpose of all the findings up to this date is that personalization requires technology, the better your technology, the better your personalization will be, and if you have the capability to adapt it to the trends, seasonality, and different variables you will be able to create a tailored experience for your customers.

7.3.1 Targeted advertisements

It's worth mentioning that at one point there were studies that examined the effectiveness of targeted advertisement in newspapers compared to targeted advertisement on Facebook (2016, CARTER-HARRIS, BARTLETT, WARRICK, RAWL). It seems logical for any marketer that it would be more efficient online as it is adaptable. The question we will try to answer is if it's logical to look at targeted advertisements today the same way as they did at advertisements in newspapers back then and if we can see AI the same way online commerce changed the way marketing was done.

Targeted advertisements are one part of personalization which consists of increasing the effectiveness of advertisements using data previously collected. As mentioned in the title, these advertisements are tailored to reach the right audience and resonate with them (2020 – CHOI, LIM). This used to be a tool used first in person and in newspapers, then online but we will discuss later, that with the advancement of AI, it is now also used live in shops (2024 – DEMIERRE, DE BUCK, MIGY, BOURGET). According to AI specialist Dr. COMTESSE, Xavier will go even further with time. In recherche available about this subject, there are many schools of thought that are not relevant anymore. In 2000, articles were talking about how efficient this technique could be if mixed with the right amount of information for the consumer (2009 – ANAND, SCHACHAR). Later, the researchers were taking into consideration machine learning to grow the target of advertising and create experiences for the consumer making a distinction between advertisements that were content-centric or user-centric which means advertisements that highlight either the product or the consumer (2020 – CHOI, LIM). Today, the targeted advertisements are made as follows: Marketers are first trying to identify a specific target group. To do so, they conduct research and surveys or vice versa they create a product that directly targets a group of the population. This notion of a consumer-centric or product-centric approach is still very relevant when trying to target your audience. An example of consumer-centric approach would be Rolex, the famous Swiss watch brand. When customers buy a Rolex watch, they are for sure buying a quality watch but what matter the most is the image the watch will give to them, if not, the Swiss watch industry would probably have collapsed with the invention of quartz watch which are reputed to be more precise when giving the time, which was, the main purpose of a watch.

Rolex remained competitive through the years because of how they presented themselves to the public as stated in their slogan “*A commitment to excellence*”¹⁶. On the other hand, Swatch, another big Swiss watch group uses a product-centric approach, making many different watch models in collaboration with well-reputed brands such as Omega or Blancpain or making special models for children such as the collaboration with The Simpson, a famous American series. Their target is easy to identify in their slogan which is “*Time is what you make of it*”¹⁷. They both have different target groups and a different target approach, to be efficient they need to target their advertisements. Knowing their target, they will for example advertise in magazines, Rolex opting for Times, which has a specific group of readers, namely, business, successful and self-made people. They will also choose Roger Federer as their spokesperson, one of the best tennis players ever. Swatch targets its consumers through more mainstream magazines and doesn't use a regular spokesperson at all. That is all the purpose of today's target advertisement, know your target and provide them with the right service. Another tool used is to use the data collected to analyze them and use them to specify your target and their product preferences. It works the same way online, when you connect to a website, you always receive a disclaimer that explains to you that the website is using cookies, and you need to accept them to use the website. Those cookies are used to create a link between the customer and the enterprise's server and to retain information about the consumer to allow him a greater experience while surfing on the company's website, it creates a session for you linked to your device and when you reconnect, they will use the same session with your saved preferences (2023 - PIRILÄ). Once the company possesses your data, they can propose to you a specific product or offer according to your own preferences, which increases their sales and offers you a one-to-one experience. The latest trend using this tool is the live targeted advertisement made to consumers directly in shops. The Swiss company Advertima Vision is proposing a technology that films the customer while there are shopping and analyzes physical information such as age, gender but also the number of customers in the shop that are close enough to see your commercial on the screen they provide.

¹⁶ Viewed from : [Rolex and Sports - A commitment to excellence | Rolex®](#) [Online 11.04.2024]

¹⁷ Viewed from : [Time is what you make of it \(swatch.com\)](#) [Online 11.04.2024]

Analyzing those data live, they then propose to the customer personalized advertisement which will, as they say, allows you shop to create “*online like capabilities which allow you to shift brand marketing and media budgets to your in-store Retail Media channel*¹⁸.” As you can do with tools like Google Analytics, those cameras can also capture your customer habits for a company to adapt the way they present their shops and how to arrange the goods.

According to AI specialist Dr. COMTESSE, Xavier, this will go way further with time, with the possibility soon to send you a short message service (SMS) when one passes by a shop, with a personalized text about an offer that suits you well. No need for back-office work where you must create your personalized e-mail, it will be a front office-like way of doing, automatically adapted process that will create a personalized advertisement directly to a client when he passes by your shop. Adding to this, the online personalization will go even further with AGI, and the possibility to create, in a few seconds, a video that is made directly for your clients according to their center of interest, about a product you already know he likes.

¹⁸ Viewed from : [Advertima | In-store Retail Media Solutions | AI Technologies](#) [Online 11.04.2024]

7.3.2 Personalized chatbots

Chatbot, the compressed word for chat and robot, is an informatic system that, with the use of AI, can stimulate written or even oral conversations with humans. To be able to interact, companies that are using chatbot are trying to give them a personality through a name, a visual aspect, or different words (vocabulary) that the chatbot can use (2019 – AHMAD). Mostly when creating a chatbot the creator needs to input data that will be used to give the answer. Chatbot works to the limit of those provided data even if the prompt is stored, in the scope of company they limit the outside input to keep a reliable service. The other component of a chatbot is the ability to understand what question is asked to it. To do so, chatbot are using another type of AI called Natural Language Understanding (NLP) a key functionality that translates the human language into informatic language. Chatbot is the AI tool that made AI become so mainstream with the introduction of ChatGPT. At the end, version 3.5 of ChatGPT is “only” a powerful conversational agent and many other AI that have been created after such as GEMINI or Mistral-AI are chatbot too. Often one cannot differentiate what AI is compared to a chatbot, AI enlarges many different technologies and allows the creation of tools. Chatbot is one of those tools.

In the scope of digital marketing, we will be looking at conversational agent in the sense of chatbot used by companies to answer the questions of consumers or to interact with them in order of giving a one-to-one experience available twenty-four-seven trough the company’s website nor mobile application. Those chatbot are evolving and are very powerful tools that can instantly create content for your customer by engaging with them in a tailored way and promote specified products and services or even recommendations based on their profiles they have created through the collection of customer data. Less globally, chatbot are often used as a live Q&A (Question and answer) analyzing the word clients are using in requests to propose to them a set of answers and do a first sorting allowing real agents to be able to focus on specific questions. We will also be looking at the possible evolution of those chatbot with the implementation of AGI and what this new technology could bring to it. Researchers are highlighting the fact that chatbot are used to reduce the work of support teams now, allowing companies to allocate less workforces in call-centers nor help-desks, they are used to collect data and create those personalized sessions with customers as stated by Mr. ALVES-VAZ (2019). He also mentions that those chatbot help to leverage the companies’ profits by creating a personalized experience for the consumer.

This Idea is shared by many such as in the study called “*Effect Of Chatbots In Digital Marketing To Perceive The Consumer Behavior*” conducted in 2022 (BAKHYZZHAN, TURSUNBAYEV, ZHAKYPBEKOVA, BEISSENOVA) that emphasized the fact that chatbot are ameliorating the consumer experience and even increase the sales as shown on this purchase desire graph below:

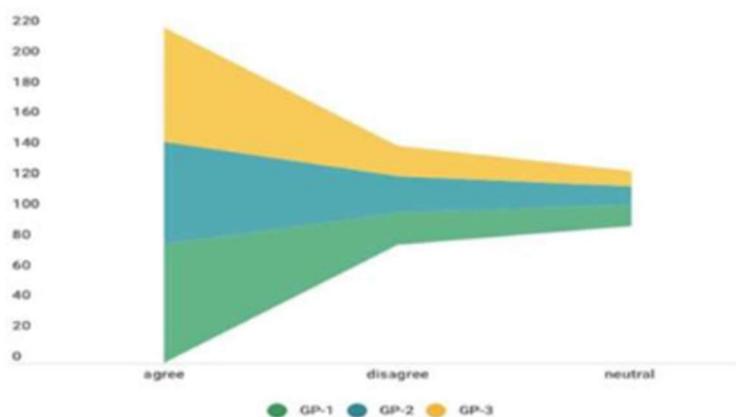


Figure 2, Purchase desire

The axis represents the respondent of the study divided into three categories being GP-1 with most respondents living in a metropolitan area, GP-2 with respondent living in a metropolitan area and GP-3 being a mix of both groups. The goal of this segregation is to represent the accessibility participant have to physical shops to assess if there is a correlation between the accessibility and the willingness to shop online, no matter of their location. The graph shows that most people (64%) agree with the fact that they get triggered if they receive a personalized message from a chatbot regarding their interest. Many big companies have started to use those chatbot for the above-mentioned advantages. Amazon, Bank of America nor Zalando are using those advanced chatbot for customer service and experience, they also take advantage of the large set of languages available to be able to communicate with a large number of customer in their mother tongue, ChatGPT can be use in 182 languages and not by translating them directly which would cause errors in the wordings or direct translation, it actually “speak” 182 languages which gives a huge advantage to the users. But companies need to be very careful on the capability of the system they are implementing, as the Chatbot are used to answer request, if they are not limited in the answer, they can give it can also be problematic which is the reason why mostly when using a conversational agent at the moment, you can often talk to a real person if you’re not satisfied.

Air Canada was taken to court and lose the case for a wrong answer that caused extra cost to one of their customers (2024 – BAZOGE), this show that Chatbot need to be set-up correctly and within the limit of the capability imputed to be efficient and not serve an opposite goal which could be to limit the customer experience. All the specialists interviewed in the scope of this recherche agree that Chatbot are in their baby shoes now and that they will evolve. In the scope of chatbot, it's written that AI is gaining empathy and the capability to be closer to the customer (2021 - MURASKI). Dr. GIESLER explained in during our interview that AI will be able to analyze the mood of the customer and therefore giving answer that are taking into consideration the state of mind, Spotify, the music application, already propose music recommendation according to your mood (2024, GIESLER). The other two interviewees, Mr. CHOSCHNAU and Dr. COMTESSE were even more optimistic regarding the evolution of chatbot, saying that it will be able to propose, update and tailor every interaction you will have with them, offering you a support and selling team available twenty-four-seven. There is no doubt that Chatbot are an effective alternative to reduce your client service team and with the understanding that is implemented to it, the personalization for marketing purposes will evolve and give a clear competitive advantage to the one using it.

7.3.3 Personalized marketing campaigns.

By mixing all the notions we have discussed, first analyze, and automate the data process, then create a strategy for marketing content which can lead to targeted advertising and personalize chatbot for company to handle both digital marketing activities and client service, the last and most advanced tool coming with GAI would be personalized marketing campaigns. Where marketing campaigns is defined as “*An interconnected set of creative executions running across multiple media channels for an extended period of time, with a singular theme and aimed at a target audience*¹⁹.” A personalized marketing campaign will replace the notion of a targeted audience by individuals. The GAI systems are evolving fast and there is a clear emphasis on the hyper-personalization of marketing campaigns. The pros given by Dr BHOOSHAN SINGH, Chandra and Ms. AHMED, Mariyam in their study from March 2024 called “*Revolutionizing digital marketing: the impact of artificial intelligence on personalized campaigns*²⁰” are that Data analysis made through AI are so much more precise and as gone so far that the same work done by humans won't be possible. The content can be easily made through AI, or it can be used to ameliorate existing content by proposing alternatives. The real time personalization facilities that exist are going beyond what could ever be done by human alone. AI revolutionized the way marketing is done and the link that exists between companies and customers. Nevertheless, they give the same warning as Dr. GIESLER, Markus, it needs to be used carefully to avoid a type of over-personalization that is ironically becoming impersonalized due to the lack of human touch. The limit is hard to find, and over-personalized content could make the customers feel overwhelmed. Nevertheless, the four 'P's we mentioned before might need to evolve to the five 'P's: product, price, place, promotion, and personalization. Altogether, it's worse to mention *AI.Enigma*, a freemium artificial intelligence that is offering to you according to the name of your company and a short description of your products and services almost everything needed for a complete marketing campaign. Added to other tools you can get a solid basis for the creation of your campaign. This is all the possibilities up to Mai 2024, about the future of personalized campaign, Dr. COMTESSE, Xavier resumed well the possibilities coming with ANI saying that “*AGI is working like a soldier that is waiting for orders while ANI could be seen as a whole army composed of general staff and soldiers*” (2024 - COMTESSE).

¹⁹ Viewed from : [Advertising campaign - Oxford Reference](#) [Online, 18.05.2024]

²⁰ Viewed from [Publishers-Revolutionizing-digital-marketing-the-impact-of-artificial-intelligence-on-personalized-campaigns-ARTICLE-HISTORY.pdf \(researchgate.net\)](#) [Online, 18.05.2024]

8. Perception & preferences

Now that we see that Generative artificial intelligence is a great tool that can be used by marketers, we will focus the study on the perception of content created by GAI and the likelihood of the consumer to appreciate the content. To tackle the way customer, perceive content created by artificial intelligence we conducted a survey using A / B testing. One hundred and four people participated where fifty-two of the people didn't see the source (V1 of the surveys) while the other half did (V2 of the survey).

- **V1 Uninformed²¹**, people just saw the images and texts.
- **V2 Informed²²**, people had a note under the image saying; “*Created by Evian’s marketing team*” Or “*Created by ChatGPT*” and before each text it was written in bold “*Text from innocent’s marketing team*” or “*text generated by ChatGPT*”

The first hypothesis (H0) was that there were no differences on the perception and preferences of customers regarding the creator of the content (AI or marketing team). The second hypothesis (H1) was that indeed, the customers will perceive and appreciate content accordingly to the creator.

About the demography of the study, in total one hundred and eight people answered the survey, respectively fifty-four and fifty-four and after removing the partials answers we ended up with one hundred and four respondents. For the demography, there were a little bit more woman than man that answered the survey, having at the end a good representation of both genders. Genders won't be used in the analysis as it won't bring anything to the study, the goal of the demography was to make sure the samples were not homogenous having different people answering.

	Men	Women	Prefer not to say	Total participants
V1 Uninformed	21	31	0	52
V2 Informed	22	28	2	52
Total	43	59	2	104

²¹ Cf Appendix 13.4, Survey about perception and preference of AI created content.

²² Cf Appendix 13.5, Survey about perception and preference of AI created content.

For the age groups, the participants were mostly between 18 and 39 years old, having over 83% of the participants in this age groups. Having no respondent between 40 – 50 for the second survey (V2 Informed) which is due to random variation.

	18 – 28	29 – 39	40 – 50	Over 50
V1 Uninformed	25	15	4	8
V2 Informed	37	10	0	5
Total	62	25	4	13

We won't analyze the data according to the age of the participants due to the lack of disparity between the groups.

Nevertheless, those two questions were useful to have the respondents starting with two very easy questions, which is probably the reason why most people answer the survey to the end. Adding to this, the question about the familiarity over AI give us the following result, out of 104 only 38 peoples answered that they were "very" to extremely familiar with AI, which mean that roughly 63.5% of the peoples that answered to the survey were not familiar with AI. This gives us a good insight on the veracity of the answer as we got more than half of the participants with no bias on existing knowledge over AI.

The image created by Evian's Marketing team was simply founded on Evian's website, while the other Image was created asking ChatGPT to analyze Evian's commercial and to describe it, therefore the description was entered into DALL-E (Other AI created by *Open AI*), many times to get several possibilities that were mixed at the end and modify with photoshop to have the same slogan on booth pictures. To ensure that there was no bias the images have been approved by Mr. MAERTEN, Cyril, Marketeer. Adding to this, to make sure that there was a preference between the two images this choice "*I have no preference*" was added to the possible answers.

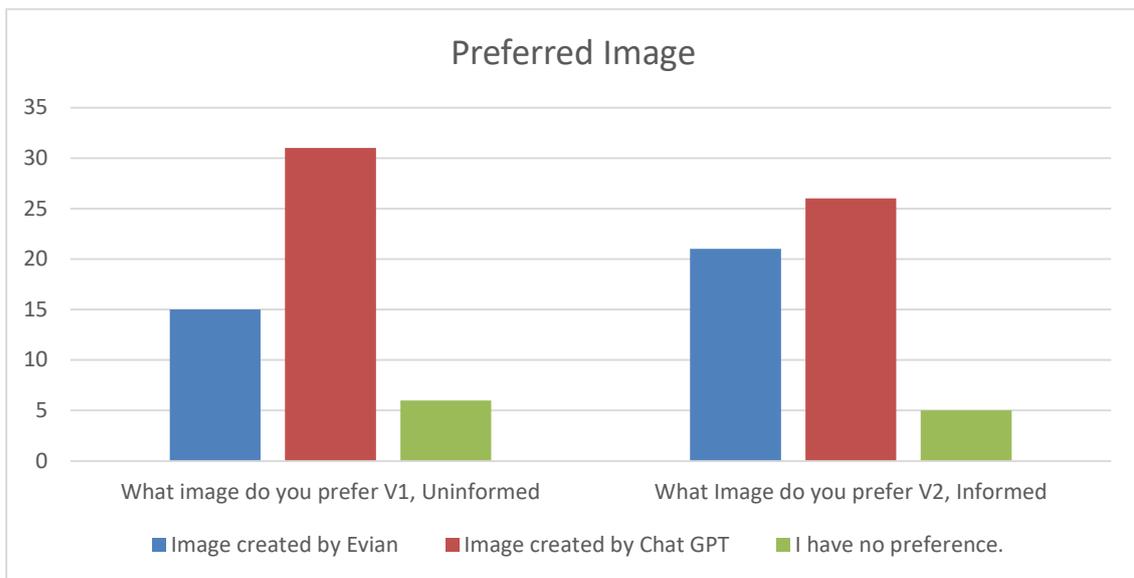


Figure 4, Preferred image

The H0, Null hypothesis was that there was no significant difference in image preference between V1 (Uninformed) and V2 (Informed).

H1 was that there was a significant difference in image preference between V1 (Uninformed) and V2 (Informed).

Contingency table	Evian	Chat GPT	No preference	total
V1 Uninformed	15	31	6	52
V2 Informed	21	26	5	52
Total	36	57	11	104

The result of Chi-square statistic is: **$X^2 = 1.53$**
P-Value: **0.466 (Based on the Chi-square distribution tables)**

With a P-value of 0.466, we fail to reject the null hypothesis [Significant level 0.05]. This means that there is no statistically significant difference in image preferences between participants who don't know the creator (V1, Uninformed) and the other group that know the creator (V2, Informed). It's worth mentioning that in both scenarios people liked the image from ChatGPT more, which could mean that there was a bias in the images as the one from ChatGPT might have been better. Adding to this, the higher preference for ChatGPT images when the creator is known suggests that the participants might have been positively influenced by the novelty or interest in AI-generated content.

The texts have been chosen following the same technique as for the pictures, a brand description found on Innocent's website was decrypted and then used to create the brand description by ChatGPT. Asking for both texts to have the same number of characters to avoid bias, having 861 characters for the original Innocent product description and 812 for the one created by ChatGPT.

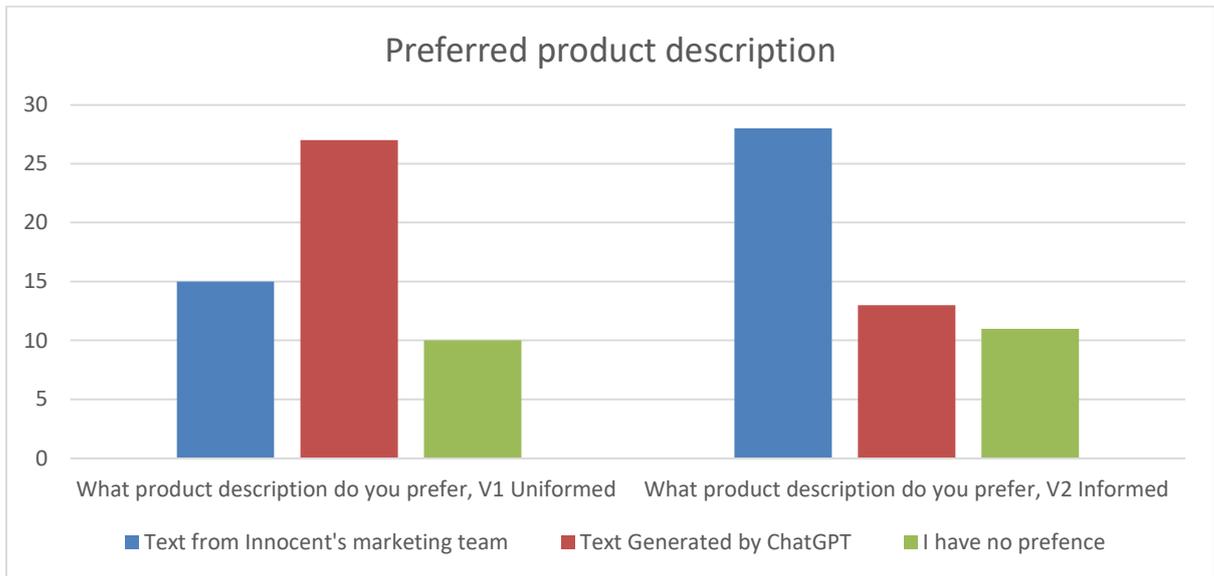


Figure 5, Preferred product description

The H0, null hypothesis was that there is no significant difference in product description preference between V1 (Uninformed) and V2 (Informed).

H1, was that there was a significant difference in the in the product description preference between V1 (Uninformed) and V2 (Informed).

Contingency table	Innocent	ChatGPT	No preference	Total
V1 Uninformed	15	27	10	52
V2 Informed	28	13	11	52
Total	43	40	21	104

The result of Chi-square statistic is: **$X^2 = 8.88$**
P-Value: **0.012 (Based on the Chi-square distribution tables)**

With a P-value of 0.012, we reject the null hypothesis at the 0.05 significance level. This means that there is statistically a significant difference in product description preferences between participants who didn't know the creator (V1) and those who knew the creator (V2). The results suggest that knowledge of the creator significantly influences preferences. Participants showed a notable bias towards professional descriptions (Innocent) when they were aware of the creator but preferred AI-generated descriptions (ChatGPT) when the creator was unknown.

This indicates that while AI content can be appealing, human expertise is trusted more for detailed information. Transparency about who created the content strongly influences consumer choices.

There is a difference in the appreciation of the images and the texts.

For Images: Trust in professional marketing teams is high, and knowledge of AI involvement can decrease preference, though anonymity can mitigate this bias to some extent.

For Texts: Disclosing AI involvement can decrease preference due to a potential bias against AI-generated content. However, professional descriptions are preferred when the creator is known, indicating a trust in human expertise for conveying detailed information.

Lastly when participants were asked to give one hundred points on whether they prefer content created by AI or by human, with no insight on the content type, we get almost the exact same answers regardless of if they knew the content was created by human or AI.

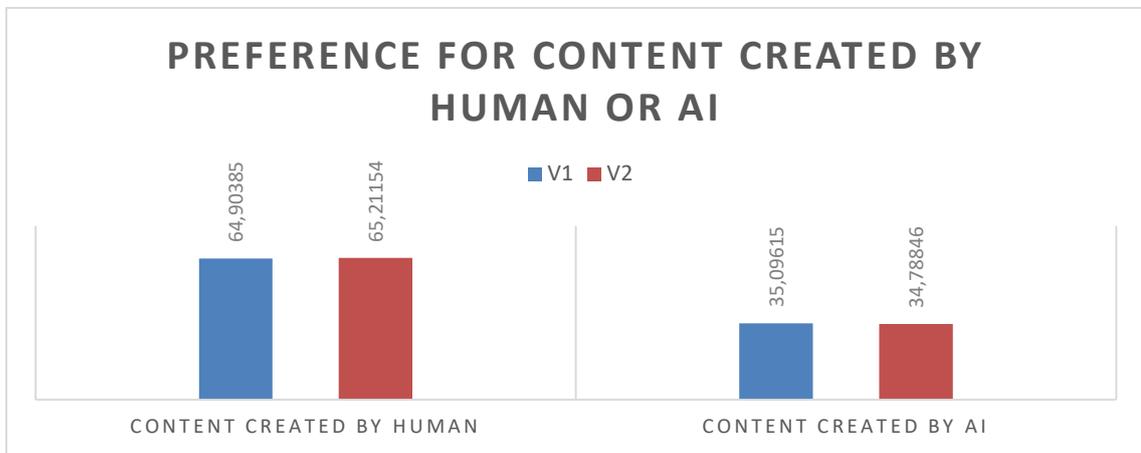


Figure 6 Preference for content created by human or AI

This shows that overall if they can choose people would prefer content created by humans (65%) over content created by AI (35%) now. This will probably evolve with the increasing democratization of AI.

The limitations of this study include the number of respondents, which is very good, but the study could have been more precise with more people answering. The images might have been biased, as individual preferences vary, and the respondents might have had biases regarding the images. Additionally, a limitation of the study is that only GPT was used as the AI.

8.1 Key takeaway

This study explored how people perceive content created by GAI depending on whether they know the creator or not. We surveyed 104 participants, with half unaware of the content creator (V1 Uninformed) and the other half informed (V2 informed).

In V1, participants viewed images and texts without knowing the creator. In V2, participants were told the creator, such as "Created by Evian's marketing team" or "Created by ChatGPT."

Our first hypothesis (H0) was that knowing the creator wouldn't affect preferences. The second hypothesis (H1) was that it would. We ensured diverse demographics among participants, mainly aged 18-39.

For image preferences, the Chi-Square test showed no significant difference between groups. Participants generally preferred the AI-generated image, possibly due to inherent appeal.

For text preferences, the Chi-Square test showed a significant difference. Uninformed participants preferred AI-generated descriptions, while informed participants favored those from Innocent's marketing team. This suggests people trust human expertise more when they know the source.

Overall, participants preferred human-created content (65%) over AI-created content (35%) when unaware of the creator. This indicates that while AI content is novel, human-created content is trusted more, especially when the creator is known. These preferences may evolve as AI becomes more common.

9. Ethics & Law

When coming to ethics there is a lot to say about AI, as with every great tool that was invented to facilitate human life, there were a lot of pros and cons. We can read every day on Artificial intelligence and its possibilities, but at the same time there is a non-negligible amount of article that goes the other way around, asking respectively to legislate and limit the use of AI to preserve human's work. We will first be looking at ethics in general and then apply it specifically to the subject of digital marketing, keeping an insight into the potential future regulations.

First, as AI needs a lot of calculating power, it consumes a lot of energy which leads to a huge waste of resources, AI has an impact in the consumption of clean fresh water approximately one liter for fifty prompts asked (2023 – SHAJI, HOVAN, GABRIO). It uses more energy than regular search engine 10 – 15% additional energy consumption on top of server operation (2023 – LEFFER). That without mentioning companies such as Nvidia which are producing a lot of the systems used by AI, which are consuming a lot of resources to be created and afterward creating a lot of heat when used. Secondly, AI will for sure replace a lot of jobs and the job losses could lead to a decrease in the taxes perceived by countries. As explained by lawyer OBERSON, Xavier, to compensate this loss, a tax needs to be implemented (2024 - OBERSON).

Thirdly, the prompts used by users are becoming part of the AI itself to help it grow, this surely led to a treatment of data that needs to be transparent. Whereas you know your data are going to be used to generate further content, you don't have much information over this subject as we have seen, data is a gold mine, and companies creating artificial intelligence must be as transparent as possible.

Nevertheless, since AI is commonly used and democratized, there have never been so many scientific articles produced, +47%²³ whereas there is not more scientific. AI allows a rapid and easier way of conducting research where it does not reduce the quality of the content produced. Adding to this, it's true to say that a lot of work will be replaced by AI but its mostly repetitive work, where for most professionals' activities it will be more of a help and adding to this, AI will also be creating more jobs than it will replace. Altogether, AI must be used wisely to reduce as much as possible the negative impact on the planet but, the use of AI will for sure bring a lot of positive outcomes.

²³ COMTESSE, Xavier, PAULETTO, Gorgio, 2024, L'IA va-t-elle tuer la science ? *AGEFI*. [Mai 2024]. Pp.09 Viewed [15.03.2024]

Legally speaking, so far there is almost no regulation, as stated by CHOSCHNAU, Bejan, all the governments are far behind when coming to regulations (2024 - CHOSCHNAU). SALLES, Marie Laure even argue that there should be a new Geneva convention to regulate AI arguing that only a few countries can benefit from the use of GAI at the moment, that it's polluting a lot and lastly that due to the power of this technology, it should be legislated to avoid any excessive use of it that could lead to the opposite goal and be negative for humans (2023 – SALLES). Specialist Dr. COMTESSE, Xavier goes in the same direction saying that AI needs a juridical form to continue existing, which is, according to him, what will happen in the future (2024 - COMTESSE). In conclusion, although AI poses ethical and legal challenges, its benefits can be maximized through responsible and transparent use. Developing appropriate regulations will be essential to mitigate its potential negative impacts.

10. Discussion

Efficiency and Data Processing: AI significantly boosts the efficiency of data processing, allowing for rapid and accurate analysis of large datasets. This capability helps marketers gain valuable insights into consumer behavior and market trends, leading to more effective marketing strategies. However, relying heavily on AI for data processing raises concerns about data privacy and the potential loss of human oversight in decision-making processes.

Content Creation: AI excels in generating high-quality content quickly and cost-effectively. It can produce customized text, images, and videos tailored to specific needs. Despite these advantages, there are concerns about the authenticity and potential misuse of AI-generated content. Survey results indicated that while participants generally preferred AI-generated images, they trusted human-created texts more when they knew the source.

Personalization: AI enhances customer experience by personalizing marketing messages and offers based on individual preferences. This includes targeted ads, personalized chatbots, and customized campaigns. However, the effectiveness of AI-driven personalization depends on the quality and accuracy of the data used. The study shows that transparency about the content creator influences consumer preferences, highlighting the need to balance AI efficiency with human creativity and authenticity.

10.1 Key findings

Key findings from the literature review indicated that AI significantly enhances marketing efficiency through data analysis, content creation, and personalization. Experts, such as Dr. GIESLER, Markus emphasized both the potential benefits and challenges of AI in replacing traditional marketing roles.

- AI significantly improves data analysis and marketing strategy optimization.
- AI-generated content is quick, cost-effective, and customizable, though concerns about authenticity and misuse persist.
- Personalized marketing efforts benefit greatly from AI, but consumer trust is influenced by transparency about the content creator.

10.2 Recommendations:

To enhance marketing strategies through AI, companies should implement AI for efficient data analysis, enabling precise market insights and optimizing strategies. This will allow marketers to make more informed, data-driven decisions. However, it is crucial to establish strong data privacy policies to ensure consumer data is protected and used responsibly. Transparency in data usage should be prioritized to build consumer trust.

In content creation, leveraging AI tools for generating marketing content quickly and cost-effectively, including text, images, and videos, can provide significant advantages. However, ensuring human oversight in content creation is essential to maintain creativity and emotional engagement. Human review can address concerns about authenticity and quality.

For personalization, adopting AI-driven techniques to tailor marketing messages based on individual customer data can enhance customer experience and engagement. Balancing AI efficiency with human creativity is necessary to produce authentic and engaging content. Transparency about the content creator can further help build consumer trust and acceptance.

11. Conclusion

The research involved a detailed analysis of AI's role in digital marketing, utilizing literature reviews, interviews, and surveys.

The study concluded that AI is a powerful tool capable of revolutionizing digital marketing by increasing efficiency and personalization. However, maintaining a balance between AI and human input is crucial to preserve creativity and emotional connection with audiences.

In summary, while AI can replace certain marketing functions, it is more likely to augment human capabilities rather than completely replace them. AI's evolving role in digital marketing makes it an invaluable asset for marketing teams. Initially, the research suggested that AI might entirely replace the need for marketing teams. However, after conducting extensive research, the conclusion is more nuanced. Like airplanes and birds, both fly but use different principles of aerodynamics due to their distinct structures and modes of propulsion, AI and human intelligence operate in complementary ways (2024 – COMTESSE).

AI, utilizing algorithms and computer programs to process data and perform specific tasks at lightning speed, can be extremely efficient and effective in specialized domains. It can execute complex tasks quickly and accurately, much like an airplane excels in long-distance travel and high-speed flight. Human intelligence, on the other hand, is the product of billions of years of biological evolution and social development. It is characterized by consciousness, creativity, empathy, and the ability to adapt to new and complex situations flexibly. Like a bird using instinct, experience, and learning to navigate the skies, human intelligence can solve an infinite range of problems in an adaptable and contextual manner.

AI serves as an extraordinary accelerator for creation, significantly boosting the productivity of marketing teams. Furthermore, it provides access to all languages, reducing translation costs and further enhancing productivity. AI's multimodal capabilities (text, images, data) are redefining the concept of marketing, enabling a more integrated and dynamic approach.

Thus, while AI has the potential to significantly transform digital marketing, it cannot fully replicate the unique qualities of human intelligence. The future of digital marketing will likely see a symbiotic relationship between AI and human creativity, each enhancing the other's strengths. As we move forward in this evolving landscape, one question remains: How can we best integrate AI's capabilities with human creativity to create the most effective and engaging marketing strategies? This question invites further exploration and debate on the optimal balance between AI and human input in the marketing industry. This evolution will undoubtedly revolutionize marketing in terms of cost, speed of response, and multimodal interventions.

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13. Appendices :

13.1 Interview of Dr. COMTESSE, Xavier, AI specialist, president of Manufacture Thinking & Mathematician

Interview conducted via video conference from Geneva on April 4th with Dr. COMTESSE, Xavier mathematician and the president of Manufacture Thinking, a company he founded in 2012. The purpose of the company is to help businesses transition to the so-called Industry 4.0. They assist companies in implementing digital systems and other facilities that use artificial intelligence. In his role, Dr. COMTESSE writes many articles for the economic journal AGEFI.

Interview conducted in French, translated with ChatGPT 4.0 using the text in French as the prompt, and validated by Dr. COMTESSE, Xavier.

BEYELER Loris Daniel: Can you please give me your opinion on the evolution of Generative Artificial Intelligence (GAI) to ANI and possibly to Super Artificial Intelligence?

Dr. COMTESSE, Xavier: In my opinion, the big breakthrough was chatbots like ChatGPT, but now that they exist, the transformation to AGI is close. To give you an example, currently we have ANI, which are like soldiers, AGI would be like a general staff. In the marketing concept, it's like ANI can produce an advertising poster, AGI can give you an entire advertising campaign from A to Z. It should also be noted that ChatGPT is available in 182 languages, which opens many possibilities. For a marketing campaign, for instance, it will prevent issues like those we saw in the past with poorly translated ads from Swiss German or with spelling errors because it should also be noted that ChatGPT doesn't make spelling mistakes.

BEYELER Loris Daniel: Do you think targeted advertisements will be able to evolve more than they do now, and to what extent?

Dr. COMTESSE, Xavier: It's already available in some stores; you have ads that adapt to customers. But in the future, it will be even more impressive with the creation of videos, more in-depth analysis of customers like their walking style, the speed of the customer, etc. We can easily imagine a customer receiving an SMS when passing by a store with a 30% offer if they buy something in the store.

We are heading towards hyper-personalization of offers for customers. Also, with the evolution, we will move directly from the back office to the front office. The back office, where we prepared the personalized email for the customer, will be over. In the future, we will be able to create almost everything for the customer on the spot.

BEYELER Loris Daniel: ChatGPT being a chatbot, do you think chatbots will be able to evolve much more than they do now?

Dr. COMTESSE, Xavier: Chatbots will be able to operate in a multimodal network, meaning that with text they will be able to create videos and sound, they will also be able to contextualize requests and personalize responses even more. Moreover, with the 182 available languages, it will make international sales even simpler.

BEYELER Loris Daniel: Do you think there will be a version 5 of ChatGPT and what will the differences be?

Dr. COMTESSE, Xavier: Indeed, version 5 is in development. They will allow it to update data and take on a role. For example, you can have it read a book and then ask it to act like one of the characters. For example, you can have it read the history of Rolex ads and then ask it to create an ad for you, which version 4 can almost do already.

BEYELER Loris Daniel: Can you tell me about the place of humans in all this, will AI replace us?

Dr. COMTESSE, Xavier: There is an example you should note, when humans invented the airplane, some tried to copy a bird and others the airplane, one goes fast and far, the other less fast and less far. But one of them can reproduce itself and the other cannot. You shouldn't ask AI to analyze, take sides, or judge something, but once everyone understands their place, it's incredible what you can do with AI.

It's a team effort, a person with AI. In the future, we will need people capable of asking the right questions and inputting the right information into the system, so it functions at its maximum capacity. Another example is education; with the tutorials that exist today, the day AI takes hold of that, it's over for many teachers.

BEYELER Loris Daniel: Regarding marketing in general, do you think AI will be a revolution?

Dr. COMTESSE, Xavier: In marketing, it will change everything, from how it's done to how it's taught. I want you to quote me on this: AI will entirely change marketing. Marketing is storytelling that shows the value of a product or service, and you will be able to do it much better with AI.

BEYELER Loris Daniel: *Open AI* created ChatGPT to be free and open to people, do you think over time it will become much more expensive and harder to access to preserve jobs?

Dr. COMTESSE, Xavier: In my opinion, general AIs will remain inexpensive and even become cheaper over time. However, AIs created for specific groups, like an AI for doctors or an AI for lawyers, will become very expensive but will be a very powerful work tool. Note that free inputs are needed to have an AI that works well, and in some fields, there is still a lot of information that is not free or is on paper and therefore not implementable in systems until they are free and digitized. AI can read, so it's not difficult to implement, but you still need the rights to the information. For example, the New York Times refused to give access to its old newspapers to ChatGPT, so for now, it cannot use this information, but it will happen. Information will become very important over time, like with insider trading in banks; the one with the information has an advantage, and it's the same here. AI will democratize many things; if there is an AI for lawyers, it will no longer be the large firms with many employees that will be the most efficient, but they will all start with the same chance.

BEYELER Loris Daniel: Do you think there will be several phases for the perception of things created with AI by customers, like with human-made diamonds which were initially seen as inferior and now it's almost the opposite?

Dr. COMTESSE, Xavier: It's a good comparison. Indeed, I think people will be reluctant at first, but over time, and even now, people will see the advantages and later it's even possible they will see the opposite, that what is done with AI is better because it doesn't require human labor.

BEYELER Loris Daniel: From a legal perspective, how do you think it will evolve?

Dr. COMTESSE, Xavier: I am convinced that we will have to give a legal form to AI so that people are transparent about its use and that it is standardized and protected. Know that Amazon receives 3,000 books per day written by AI; in some time, we will be able to make 3,000 films per day. We absolutely must give them a legal form. Some universities or professionals are already working on this project.

13.2 Interview of Dr. GIESLER, Markus, Professor of Marketing and AI specialist

Interview conducted on teams the 25th of April 2024

Introduction of Dr GIESLER:

Dr. GIESLER, Markus is a consumer researcher and Professor of Marketing at the Schulich School of Business (York University). His research examines how markets dynamically shape human behavior, often in the context of new technologies. His work has been published in top-tier academic journals such as the Journal of Consumer Research and the Journal of Marketing and received extensive coverage in media outlets such as The New York Times, Wired, Bloomberg Businessweek, and Time Magazine.

He is an Editor at the Journal of Consumer Research (2021-2024), ERB member at the Journal of Consumer Psychology, Consumption, Markets and Culture, and Marketing Letters, and previously Associate Editor at the Journal of Marketing and Area Editor at the Journal of the Academy of Marketing Science. He has been named an MSI Scholar by the Marketing Science Institute, "*one of the best recognized experts studying high-technology consumer behavior*" by Wired, and a "40 under 40" professor by Poets & Quants. At Schulich, he teaches marketing topics including a popular MBA course called Customer Experience Design. He works with companies on practical research and engages in executive training and advisory. He has been a visiting scholar at the Kellogg School and at Stockholm University.

BEYELER Loris Daniel: The first question I'd like to ask you is if you could give me an insight on the evolution of artificial intelligence, particularly AGI?

Dr. GIESLER, Markus: Okay, just to give you a bit more context, I'm a consumer anthropologist and sociologist, so my focus is on understanding not necessarily the technology itself but how we develop knowledge around the technology. I don't believe AGI is anywhere near what we might hope, but there is this perpetual understanding in our culture and society that artificial intelligence is intelligent, which it isn't. As you know, there's pattern recognition within language models, which is the most recent iteration of artificial intelligence or algorithmic, statistical work.

This theme has been with us for maybe 70 or 80 years. At the turn of the last century, there was interest in machines and machine-made predictions which have improved over time, followed by various computational advances that spurred new innovations in that domain. Some, like Eric Davis, argue that the concept of intelligent machines is thousands of years old, evidenced by historical instances like the Oracle of Delphi and other types of machines to which humans have attributed magical properties.

BEYELER Loris Daniel: Considering your background and what you have written, you seem to be a specialist in new technologies within the scope of marketing. I think you quite answered this question with what you just said, but do you think AI is the main topic within the evolution of digital marketing, or will there be other disruptive technologies coming?

Dr. GIESLER, Markus: Now, I would say that AI is the dominant focus, but it's not the only thing. VR and AR—so virtual reality and augmented reality—and the metaverse are also very interesting and popular to talk about at the moment. Before that, it was big data, data analytics; that was a bigger theme, and then there was crypto, and the idea of cryptographic ways of dealing with information and knowledge. So, I think—and I was just discussing this with a colleague of mine in New York, Bernd Schmitt, with whom I co-edited a journal, the Journal of Consumer Research—every six to eight months, there's a new fashion. Right now, it's artificial intelligence, and it might give rise to something else. Who knows? But it's not the only one that's out there.

BEYELER Loris Daniel: Knowing that AI is already used in shops, where they use cameras to film the habits of consumers and then propose live advertisements and products, how do you think the personalized content will evolve with artificial intelligence with all the knowledge that it could bring and like translating the data directly to the consumer to give him a more personalized, tailored experience?

Dr. GIESLER, Markus: There are two sides to your question in terms of answers, and one side is data—you know, what types of data and how data gets extracted from consumers through artificial intelligence. The other side is experience. What kind of experiences can we envision AI to be helping to generate? I think you have to always talk about these two together. You cannot talk about data without talking about experience, and you cannot talk about experience without data.

But I think more specifically, there's a big push right now to get from the level of socio-demographic information, geolocation, and preferences to emotionality. Emotional AI—AI experiences that are emotional, that can empathize with humans. But then also, emotional data—like, what mood is Loris in today? Is he happy? Is he sad? Is he angry? Is he peaceful? That sort of thing. So emotional data. Data that can be read and can be a variety of different data. If you're with Spotify and you listen to sad music, that tells an AI algorithm in Spotify a great deal about your life circumstance. Maybe you're going through a breakup, maybe you are in love, you know, these kinds of things. But there's more; there's facial data, facial recognition, and all of that tells artificial intelligence a lot about our emotional state. So, I think that will be a big topic—emotions and AI.

BEYELER Loris Daniel: Do you think that emotionality is something that could be implemented in artificial intelligence soon, or as with AGI, is it going to take years or even never happen?

Dr. GIESLER, Markus: It's already part of chatbots, and it's, you know, when you have Spotify, you know that it makes playlist suggestions. So, it kind of analyzes your mood. Every social media platform does that already. So, the idea of mood and sentiment and someone's emotional state is already part and parcel of the whole AI-enabled experiential landscape.

But it will require a bit more sophistication, you know. It's not easy to read someone's emotion, and misreading that is also very tricky. What's even more difficult is to express a certain mood on the side of, let's say, a chatbot.

Like, how can we make sure a chatbot understands our moods and then also expresses a certain mood by themselves? I think that's happening. There's a paper that's been published in the *Journal of Marketing* by a colleague of mine named Roland Rust. And there's also a book, maybe I can drop this in the chat here quickly for you, "*The Feeling Economy: How AI is Creating Empathy*." So, it's all about that, right? The era of empathy. So, follow Roland Rust for more on emotions and AI.

BEYELER Loris Daniel: One part of my work is about insight generation. To proceed data and for SEO or other insights generated by AI, are they significant?

Dr. GIESLER, Markus: Yes, they are. And maybe not necessarily for the better. I noticed one thing when it comes to SEO and social media and this entire Google ecosystem that we've all gotten used to within the last five to ten years. That's really changing. Important platforms that gave you and me as end-users a lot of power have stopped working as they used to. Like, Google Analytics is mostly worthless these days. I remember a time when you could generate a great deal of attention using LinkedIn and Facebook. Those days are gone too. Twitter verification has disappeared. So, all these things point to a kind of paradigm shift in social media and SEO. And I think a lot of the work that humans did to optimize content—shareability, likes, attention—all these things are now in the hands of algorithms. But the algorithms don't necessarily do what we want them to do. They do what they want to do, and they often also work more in the interest of whatever platform they are employed with. So we can envision a future where algorithms kind of broker our attention, our interests, our preferences, where we put our eyeballs, and where we navigate on computers to a point where, you know, take online dating. Many people date online; they use Bumble or other apps for that. You could have an algorithm that dates another algorithm and goes to a list of algorithms and criteria to find a shortlist of people whom you might find interesting to talk to. Even when that happens, you can as a human kind of take the algorithm out of the picture and put yourself back in. But I think a lot of that SEO stuff will be done by algorithms. It will be harder for humans to build community around a specific idea or topic. It will be harder.

BEYELER Loris Daniel: So, if I understood well, like you think that the algorithm is already common today and used for that type of data organization, and it would reach a point where it's not really helping anymore?

Dr. GIESLER, Markus: It will help, I think it will make us obsolete, and then it'll make human SEO kind of architects—people who, you know, are very good at getting top-ranking rates like getting at the top of the Google search results page—let's say. That's it. That was art and science. I don't have to tell you that you can do all kinds of things to make that happen. In the future, it will be so efficient that algorithms can do this, and humans are no longer allowed, and I think it will not necessarily strengthen the smaller players; it will strengthen concentrated interests. So, it's harder for smaller players. It's harder for a small independent newspaper or a community activist or a small business somewhere to attract the attention that it wants.

BEYELER Loris Daniel: I had another interview where I was told that AI would make the barrier smaller between companies; it would give the same opportunity to every company. What do you think?

Dr. GIESLER, Markus: I want to give you an example of this. If, let's say, five to eight years ago, you had a great idea for a personal brand on LinkedIn and on Twitter, you could build it. So, this idea of info social influencing, which, as you know, requires a human component—empathy, likability, humor, attractiveness. These are things that humans negotiate with each other. That is what creates an influencer, but algorithms are not as good as humans in falling for these humanistic things. So, they're way more rational and way more merciless in terms of brushing aside all these different human imperfections that make an influencer influential and powerful. So, I think it will strengthen the strong and will make it even harder for those who are small to attain a level of prominence and success.

BEYELER Loris Daniel: The next question is about the perception of content created by AI. So I did a parallel while doing my research with the diamonds that are being created now by machines and the diamonds that are extracted from the ground. Do you think it would be quite the same for content created by artificial intelligence or content created by a human, there would be a difference in the perception?

Dr. GIESLER, Markus: So last year, around the same time, if you had asked me that question, my answer would have been different than today. I think, you know, ChatGPT is a great example of how content that is created by an artificial intelligence is becoming better and better. So, the models are getting better, and the accuracy and sort of objectivity the information gets more accurate and better.

Last year it was different because last year, you know, it would make mistakes; it was how it was hallucinate; it would kind of there would be ways to trick it into kind of like writing gibberish and really illegible sentences, but now it's getting really so good that I think people would be more willing to kind of accept the quality of content generated through an AI. But here comes the catch: I think competition isn't just about having the machine created it; has a human created it. It's all about human-machine combinations, and so the competition will be about has this human used the machine to create a larger-than-life outcome, and that will be the new type of seeing the authenticity and validity of content.

So, it's less of a polarization; it's less of a dichotomy between real and artificial and more about what human-machine configurations are competitive and which ones aren't.

BEYELER Loris Daniel: So, the competition would remain quite the same if I understood like between content created by AI it would be the use of both like human and how what they do with the machine at the end.

Dr. GIESLER, Markus: Yeah, so I tested this last week in New York; I was in New York, and I had students, and I said, okay, so here I give you something that's been written read it to me let's read it together and then decide is this a good text is this good and the feedback was yeah, this is great, but it would be even greater if I knew what had been written by like a recognized human being or it had been created in conjunction with the machine and a recognized human being. So there's a personal branding aspect, human branding, like the idea that you brand content to be human-generated, that I think is still appreciated, and it's not just the content itself but what like the context within which we think about creativity and we want creativity to be empowering to humans and not you know disempowering and so for that reason I think the configuration between humans and machines is important.

BEYELER Loris Daniel: I had a question about the place of humans in the future because I've seen that artificial intelligence is going to cancel a lot of jobs but also create a lot of jobs. What do you think is going to be more of a collaboration between human and machines?

Dr. GIESLER, Markus: Well, simple sort of like data harvesting or data analysis jobs, anything that's like sort of like for instance tax returns or excel sheets or banking on a lower level, these will all be done by machines; it is in fact harder to replace a human in jobs that are not so much about thinking and more about dexterity and what we do with our hands. So a friend of ours, my wife and I, is a jeweler, so she kind of knows how to make rings, and she handcrafts them, and she puts the personal touch on them, so this is like a job that is harder to replace than my job or your job like in education, you know, it's all about me talking and saying something that a machine could do. So, my job will cease to exist in five years, ten years, maybe, or begin to kind of show signs of you know education being done by robots.

Your children will be maybe taught by robots, but I also think that you know that's the general statement about efficiency and rationalization; we still want to see a diverse landscape of possibility, and I think what makes these different kinds of AI users interesting is how much humans are involved so the human touch will be amazing will be important and you know let's think about elderly care for instance caring for older people there will be care that's completely robotic and there will be care that's completely human and there will be a spectrum of possibilities of hybridity that also play a big role so you know I think that humans will play a role but I also think a lot of humans will lose their jobs 100%.

BEYELER Loris Daniel: In this in the scope of marketing because when you use an AI you will still need to be putting the right input to AI so do you think creativity is going to be even more relevant with time and with the growing of AI because you will need people that know how to use it and how to be creative with it.

Dr. GIESLER, Markus: With that yes so creativity just gets kind of like put on a different level like prompt design and making sure we know how to interface with these technologies that's true but that will also become easier you know there will be new interfaces that make it easier to be creative without having this expert knowledge.

BEYELER Loris Daniel: What competitive advantage AI could give to a marketing team so from all of your answer I feel you're more pessimistic than the other people I've interviewed but do you still think that marketing agencies won't be able to work or like the one that are using well artificial intelligence would have a real competitive advantage over other?

Dr. GIESLER, Markus: Between now and let's say in five years that's true that statement is true I think you know if you're smart and you have an agency that uses AI effectively that can give you great creative output in like uh short amounts of time for not a lot of money but again like going back to last week in New York we had an industry panel there were like several agencies on the panel experts like all like senior C-suite members of those agencies and we couldn't help but look at that and and you know many of those agencies will not exist in five to ten years because the tasks that they perform the services that they render can be easily done by an AI so a lot of the kind of like artistry and creativity that goes into let's say designing a customer experience which is something for which many companies have agencies and have like really kind of like beautiful like graphics designers and sound designers and you know atmospheric designers that can all be done by an AI and you just will you will need fewer agency kind of players on market so the market for agencies will kind of become like the market for web providers like website but you know like when you remember Loris is the time when you wanted a website and there was like a hundred thousand different opportunity possibilities and now it's just like two or three like GoDaddy and I don't know like pure tech one-on-one and that's it so now we no longer think about this in a kind of like interesting way it's just a commodity and there are services that can render that so that's what agencies will be in the future.

BEYELER Loris Daniel: About the evolution of the regulation because they're talking a lot about creating a juridical form for AI so what do you think about the right to use the content you create by AI or all of those things like the regulation over that topic will evolve?

Dr. GIESLER, Markus: So regulation right now is super behind and it's what we call reactive regulation so the kind of governance that is like reacting to certain innovations and trends in the market as you know LLMs need huge amounts of data and that data needs to be made available to them through things like Reddit and Twitter and Facebook and all these different platforms have all this data and so now data is like sort of traded in the background in order to inform those LLMs.

Once that happens the LLMs themselves generate data right like you have a ChatGPT account everything you write down there is data that is no longer yours, so I think that's a huge problem and I think regulators don't fully understand the implications of AI for things like individual authorship copyright intellectual property those sort of things.

I think you can see, and I think it's been shown in the court of law that LLMs actually use like proprietary information to create something that is actually very original to the proprietary information so that will probably require a huge overhaul of copyright similar to the millennium digital millennium copyright act DMCA. I don't know if you remember that that was like what was done 25 years ago in order to kind of prepare the world for you know the era of Google and you know streaming and all that Netflix stuff that we have today but now is a new era where copyright needs to be completely like redeveloped and that is something that needs to happen but there's something else. We like to think about policy as regulation laws policies that sort of thing. That is not all there is to it. We need to think more behaviorally so for LLMs to do the magic we all need to comply we all need to kind of feed this thing we all need to train the algorithm we all need to kind of sort of learn how to kind of do this and that's sort of like behavioral regulation. It has not so much the law it's about what do we or don't we share because we either feel comfortable or uncomfortable doing that and so I think the real challenge is not so much how do you regulate *Open AI* but how do you regulate people in society to not fall for *Open AI*. So, you it's more of a moral regulation it's less about laws and regulations and more about moral values. Do we want like where do we find our place in that ecology of AI right? So that will also be a regulatory challenge.

13.3 Interview of Mr. CHOSCHNAU, Bejam, AI specialist and COO of INFONA limited.

Mr. CHOSCHNAU, Bejam is the Chief Operating Officer (COO) of *INFONA limited*, a company active in the field of Artificial Intelligence. They have developed an AI called Ella, which offers 140 applications that can be utilized within companies. For instance, one of these applications can replace a company's accountant. They collaborate with *Open AI* and Google for the development of their systems.

The interview was conducted online on April 26th, 2024. Due to the sensitivity of the information, the call was not recorded, but the summary of the interview has been approved by Mr. CHOSCHNAU.

1. Future of Artificial Intelligence:

Mr. CHOSCHNAU believes that artificial intelligence (AI) is currently in its early stages, akin to being in its "*child shoes*." He predicts continuous improvements in AI capabilities, including voice and facial recognition, and data analysis. These advancements are expected to significantly enhance precision in various applications, potentially transforming industries such as movie production, where ultra-realistic images generated by AI could revolutionize traditional methods, movie stars could be paid credits to be used in movie created by AI.

2. Impact on the Movie Industry:

According to Mr. CHOSCHNAU, specialists anticipate major shifts in the movie industry due to AI, with changes occurring rapidly. He cited examples from *Open AI*'s projects like Sora, which produces ultra-realistic images, as indicators of the potential impact on content creation.

3. Augmented Reality and Other Technologies:

While augmented reality (AR) and virtual reality (VR) are emerging technologies, Mr. CHOSCHNAU expressed skepticism about their immediate impact due to the current bulkiness of the devices. He mentioned that more discreet forms, like lenses, could become more influential in the future. He also noted Elon Musk's projects as significant future contributions to technological advancement.

4. Artificial Intelligence in Marketing:

Mr. CHOSCHNAU highlighted AI's potential to revolutionize the marketing industry by leveraging vast data access to understand human psychology and trends more accurately than humans. AI can analyze data and generate insights far quicker than traditional methods, allowing for highly targeted and effective marketing strategies.

5. The Possibility of Conscious AI:

Discussing the evolution towards potentially conscious AI, Mr. CHOSCHNAU outlined the current categorization of AI from basic to advanced systems capable of adapting and learning. He sees AI's development as a progression towards more sophisticated, possibly conscious machines.

6. Personalized Advertising:

AI's ability to gather detailed personal preferences will lead to highly personalized advertising, making general broadcasts obsolete. This will enhance the relevance and effectiveness of marketing efforts by directly catering to individual preferences.

7. Future of Human Work:

In the long-term future, Mr. CHOSCHNAU believes that human roles will shift towards quality management, overseeing AI to ensure ethical alignment and accuracy rather than performing routine tasks.

8. AI and Regulation:

The interview concluded with a discussion on the need for stringent regulation as AI technologies become more integrated into societal functions. Mr. CHOSCHNAU expressed concerns about the current pace of regulatory development, which he views as lagging behind technological advancements, potentially leading to restrictive measures in the future as governments strive to mitigate risks associated with advanced AI capabilities.

Conclusion:

Mr. CHOSCHNAU'S insights reflect a robust optimism about AI's potential to transform various aspects of modern life, tempered by a realistic view of the challenges in technology adoption and regulation. His perspective is particularly valuable for understanding the strategic directions businesses and policymakers might consider in response to rapid technological changes.

13.4 Survey about perception and preference of AI created content (without the information on the creator – V1 Uninformed)

Q1: What is your gender?

1) Male

2) Female

3) Prefer not to say

Q2: What is your age group?

1) 18 – 28

2) 29 – 39

3) 40 – 50

4) Over 50

Q3: what image do you prefer?

1)



2)



3) I have no preference.

Q4: Which product description from the "Innocent" brand do you prefer?

1) 1,2,3 sun

At the start, when one moves abroad, everything is enchanting. Everything is new, everything beautiful: we discover new places, meet new people, learn to dance the tango (assuming you are in Argentina)... But after a while, there are a certain number of little things that we still miss: the little morning baguette, the smell of camembert, the lively family Sunday lunch*. So, when we meet other foreigners, we like to talk with them about these little things we miss.

Well, imagine that in this bottle of Mango & Passion Fruit smoothie, that's exactly what's happening. Our dear mango comes from India while the passion fruits have grown in Ecuador. So, if you listen carefully, you will surely hear beautiful traditional Indian stories or have the opportunity to travel to the Andes Mountains...

*or perhaps the crowded RER at 07:17 am, right?

2) Globetrotter's Sip

For those with wanderlust, even the intrepid traveler yearns for the comforts of home—the soothing warmth of a freshly baked morning baguette, the robust tang of aged camembert. Our Innocent Mango & Passion Fruit smoothie bridges continents, fusing India's sun-drenched mangoes with the electric zest of Ecuador's passion fruits. This isn't merely a beverage; it's a taste of the world crafted to bring the essence of home right to your lips.

With every sip, you're transported: Listen to the rich tapestry of Indian folklore and feel the crisp Andean air. Each gulp is a voyage, encapsulating the spirit of adventure and the nostalgia of home in a single bottle.

Certainly, a more charming companion than the crush of the early morning commute, don't you agree?

3) I have no preference.

Q5: How familiar are you with Artificial Intelligence (AI)? AI involves machines performing tasks that typically require human intelligence, such as learning, reasoning, and problem-solving.

- 1) Not familiar at all
- 2) Slightly familiar
- 3) Moderately familiar
- 4) Very familiar
- 5) Extremely familiar

Q6: Do you think Artificial Intelligence (AI) is used in digital marketing? AI in digital marketing involves all the marketing used online through algorithms analyzing consumer behavior, predicting trends, and automating tasks.

- 1) Definitely not
- 2) Probably not
- 3) Probably yes
- 4) Definitely yes

Q7: Some of the content you've encountered in this study was generated by AI, while other content was crafted by humans. Would you perceive the content differently depending on whether it originated from a machine or a human? Please allocate a total of 100 points to express your preference.

Human created content: .../100 points
AI created content: .../100 points

=Total 100 points

13.5 Survey about perception and preference of AI created content (with information on the creator – V2 informed)

Q1: What is your gender?

2) Male

2) Female

3) Prefer not to say.

Q2: What is your age group?

2) 18 – 28

2) 29 – 39

3) 40 – 50

4) Over 50

Q3: what image do you prefer?

1)



2)



3) I have no preference.

Q4: Which product description from the "Innocent" brand do you prefer?

1) **Text from Innocent's marketing team:**

1,2,3 sun

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2) Text generated by ChatGPT:

Globetrotter's Sip

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