

Louvain School of Management

# What are the impacts of artificial intelligence on marketing?

An exploratory study on Belgian marketers

Author(s): Laurent de Kerchove d'Exaerde  
Supervisor(s): Isabelle Schuiling  
Academic year 2023-2024  
Dissertation for the master in Management (GEST2MS/GE)  
Master subject and focus: Professional  
Daytime schedule

## Declaration Regarding AI Tool Usage in Master's Thesis

We recognize that AI tools might be valuable aids during the master's thesis work, but they are not infallible. Remember that transparency fosters trust, and acknowledging AI's role enhances the credibility of your work.

Therefore, when deciding to use such a tool, you need to adhere to the following principles of responsible use of AI.

**1. Critical Evaluation :**

- We critically assessed the AI-generated output, ensuring its alignment with our research objectives.
- Any modifications or corrections were made based on our expertise and domain knowledge.

**2. Transparency :**

- We acknowledge the use of ChatGPT transparently, emphasizing that it contributed to our work but did not replace human judgment.
- Our commitment to transparency ensures the integrity of this thesis.

**3. Ethical Considerations :**

- We actively monitored for biases or unintended consequences introduced by the AI tool.
- Our ethical responsibility guided our decisions throughout the research process.

## Declaration

During the preparation of this master's thesis, the author(s) utilized ChatGPT & Turboscribe for the following purpose:

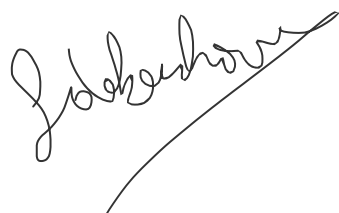
1. ChatGPT: Structuring literature review, literature exploration, understanding certain key concepts and grammatical help and correction.

Turboscribe: helping transcribe the interviews.

2. After using ChatGPT & Turboscribe, the author diligently reviewed and edited the content produced by the tool. We take full responsibility for the final content presented in this thesis.

By signing this declaration, we affirm that the content of this master's thesis reflects our original work, augmented by the responsible use of AI.

Signed in Tervuren, August 7 2024

A handwritten signature in black ink, appearing to read 'J. de Koster', written over a horizontal line.

## **Acknowledgement**

Before diving into this thesis, I would like to express my sincere gratitude for the support of my supervisor Isabelle Schuiling, who guided me through the process of this thesis with her knowledge and helped me bring this thesis to a good end.

I would like to thank all of the marketing experts whom I was able to interview for this research and who all generously accepted to take part in these interviews. Your contributions were essential to the success of this research, and I deeply appreciate your willingness to participate.

Finally, I would also like to thank my family and my girlfriend for their support and understanding during this journey. Your encouragement has kept me motivated and focused, even during the most challenging moments, and your belief in me has been a source of strength, and I am grateful to have you by my side.

Thank you all for your support.

## Table of Contents

<b>1. Introduction .....</b>	<b>1</b>
<b>2. Literature review.....</b>	<b>2</b>
<b>2.1. Artificial intelligence: Overview and key concepts .....</b>	<b>2</b>
2.1.1. Definition of Artificial Intelligence .....	2
2.1.2. Existing types of artificial intelligence .....	3
2.1.3. Today's use of artificial intelligence.....	6
2.1.4. Generative AI .....	8
<b>2.2. Artificial intelligence in marketing .....</b>	<b>8</b>
2.2.1. Tools and technologies.....	9
2.2.2. Applications of AI in marketing.....	9
2.2.3. Challenges of AI in marketing.....	13
2.2.4. Advantages, risks and limitations of AI in marketing .....	13
2.2.5. Ethics and privacy .....	15
<b>3. Methodology.....</b>	<b>16</b>
<b>3.1. Qualitative approach.....</b>	<b>16</b>
<b>3.2. Sampling .....</b>	<b>17</b>
<b>3.3. Ethics .....</b>	<b>17</b>
<b>3.4. Data analysis .....</b>	<b>18</b>
<b>4. Findings .....</b>	<b>19</b>
<b>4.1. Tools &amp; technologies .....</b>	<b>19</b>
<b>4.2. AI as a co-pilot .....</b>	<b>19</b>
<b>4.3. Automation.....</b>	<b>20</b>
<b>4.4. Speed and efficiency gains .....</b>	<b>20</b>
<b>4.5. Content creation and creativity .....</b>	<b>21</b>
<b>4.6. Challenges and difficulties .....</b>	<b>22</b>
<b>4.7. AI in market research and customer segmentation .....</b>	<b>23</b>
<b>4.8. Ethical considerations and risks .....</b>	<b>23</b>
<b>4.9. Data utilization .....</b>	<b>24</b>
<b>4.10. Product design .....</b>	<b>25</b>
<b>4.11. Personalization .....</b>	<b>25</b>
<b>4.12. Competitive advantage.....</b>	<b>26</b>
<b>4.13. Advice given by experts .....</b>	<b>26</b>
<b>4.14. Future of AI in marketing .....</b>	<b>27</b>
<b>5. Discussion .....</b>	<b>29</b>
<b>6. Limitations and future research.....</b>	<b>31</b>
<b>7. Conclusion.....</b>	<b>32</b>
<b>8. References.....</b>	<b>34</b>

## 1. Introduction

Advancements in artificial intelligence, especially with the rise of generative AI in recent years, have significantly changed the marketing landscape all around the world. Artificial intelligence has completely changed how companies interact with customers, how to tailor their experiences and predict the next best move from a marketing standpoint.

Generative AI, and AI applications in general, are reshaping marketing innovation because of its ability to generate content as well as predictive insights based on preexisting data. These new tools provide a new standard of efficiency and engagement, from creating customized ads (Nesterenko & Olefirenko, 2023), to producing predictive analytics and generating impactful and innovative content (Dillet, 2022).

However, all of these changes do not come without some complications. In addition to pushing the limits of marketing strategy and creativity, genAI has been found to pose significant ethical issues (Kumar & Suthar, 2024), displaying visual flaws in AI generated content (Bhaimiya, 2023), and struggling with data handling (Chatterjee et al., 2019).

For these reasons, the goal of this thesis is to examine the current impacts of artificial intelligence, including the latest trend of generative AI, on the marketing industry by emphasising both the significant prospects and the potential new difficulties. With the recent popularisation of generative AI tools like popular conversational AI ChatGPT and text to image generators, one of the aims of this study is to understand the influence of these technologies on marketers.

This leads us to the core research question of this research being: **“What are the impacts of artificial intelligence on marketing?”**. With research being carried through an exploratory study on Belgian marketers.

To analyse this research question, this thesis has been broken up in multiple parts. The first part will go in depth into the topic of artificial intelligence and marketing with the corresponding literature review to give the reader all necessary contextual information. The second part explains the chosen methodology, being qualitative research by means of a content analysis based on 13 interviews with marketing experts. In order to demonstrate the impact and power of genAI in marketing, the third part of this thesis will present the findings from the data gathered during interviews as well as discuss its meaning. It will also cover the limitations and difficulties faced during this work as well as conclude the study.

The goal of this thesis is to give readers a thorough understanding of the current function of AI in the marketing industry, along with a discussion of the perceived impacts by experts who make use of these new technology on a daily basis.

## **2. Literature review**

The following literature review offers an analysis of Artificial intelligence and its potential implications within the marketing industry.

A literature review provides us with a broad overview of current knowledge, and allows us to find relevant theories, research methodologies as well as gaps in the field. It enables us to create a summary and critical evaluation of the existing research in relation to the research problem (Labaree, n.d.). Snyder defines it as “*a more or less systematic way of collecting and synthesizing previous research*” (Snyder, 2019).

This literature review will serve as a base for the reader to understand the current information available as well as trying to identify gaps in the research field that I would like to analyse for my research project.

The first part of this literature review will broadly cover the topic of artificial intelligence by giving a detailed overview as well as key concepts around AI. I will define artificial intelligence and explain the existing types of AI that exist today, while giving concrete examples of how those applications are used today. I will conclude this part by making a focus on generative AI and its impacts.

In the second part, I will focus on artificial intelligence in the field of marketing specifically. This focus will be made through the explanation of the tools and technologies in use today as well as the practical applications of AI in marketing. The advantages, the risks as well as the limitations of AI will also meticulously be analysed in this part. At last, I will also cover the ethical and privacy concerns around artificial intelligence use in marketing.

### **2.1. Artificial intelligence: Overview and key concepts**

#### **2.1.1. Definition of Artificial Intelligence**

Whether we are talking about intelligence or artificial intelligence, both terms have very broad and different definitions without one clearly standing out. The term ‘intelligence’ on its own can have more than 70 different definitions (Legg & Hutter, 2007). It is no surprise that, knowing this, the term ‘artificial intelligence’ doesn’t have a single agreed upon definition.

To define artificial intelligence (AI) as best as we can, I propose a few varying definitions with different perspectives.

The very first mention and definition of AI can be attributed to McCarthy et al. (1955). They were the pioneers of the term ‘artificial intelligence’, as they first discussed the matter at the 1955 Dartmouth meeting. McCarthy et al. (1955) can also be seen as the pioneers of AI research due to the fact they established three leading research centres as

well as the fact that their ideas largely shaped the path of the mainstream AI for decades (P. Wang, 2019). McCarthy's definition of AI in 1955 was "The science and engineering of making intelligent machines" (Manning, 2022). This first definition puts a clear focus on the action of making and engineering intelligent machines, without going into more detail.

When looking at McCarthy's last definition of AI, we can find the following definition: "a machine that behaves in a way that could be considered intelligent, if it was a human being" (McCarthy, 2007). In this second definition of McCarthy, we can see a shift in the definition going from a definition of making and engineering, towards a definition of behaviour of machines acting like human intelligence.

The European commission decided to agree on one specific definition from HLEG (High-level expert group) on AI on which to base their research and future work:

*"Artificial intelligence (AI) systems are software (and possibly also hardware) systems designed by humans that, given a complex goal, act in the physical or digital dimension by perceiving their environment through data acquisition, interpreting the collected structured or unstructured data, reasoning on the knowledge, or processing the information, derived from this data and deciding the best action(s) to take to achieve the given goal. AI systems can either use symbolic rules or learn a numeric model, and they can also adapt their behaviour by analysing how the environment is affected by their previous actions." (European Commission. Joint Research Centre., 2020)*

This definition allows for a very comprehensive definition of AI as it covers all relevant elements such as perception, comprehension, interpretation, interaction, decision-making, behaviour adaptation, and goal achievement, which are aspects that are not fully covered by other definitions (European Commission. Joint Research Centre., 2020).

CEO of Deepmind Demis Hassabis would define AI simply as the "science of making machines smart" (Bell, 2015). This definition is very broad, but the reality is that AI is being used as a catch-all word for a wide range of applications with subcategories like machine learning and deep learning (Buch & Thakkar, 2021).

### **2.1.2. Existing types of artificial intelligence**

The earliest types of AI applications the world uses today were built on traditional machine learning models. This means that the models depend on learning algorithms that are developed as well as maintained by data scientists. The consequence of this is that in order for standard machine learning models to interpret new data and carry out any task that is not part of their initial training, human intervention is required. (IBM Data and AI team, 2024).

A great example of such standard machine learning model is the voice assistant "Siri" that made its debut in 2011, which was trained to interpret a set of precise statements and requests. Although the model was very impressive, human intervention was still required

to expand Siri's capabilities and functionalities. Another example of machine learning applications are image-recognition systems, where millions of images are given to the system to analyse, which will be able to recognize faces, shapes, patterns and other objects after countless permutations (Wisetsri et al., 2021).

After the breakthrough development of artificial neural networks, the capabilities of artificial intelligence have been progressing steadily and now allow machines to replicate how the human brain processes information and engage in reinforcement learning. These new models are referred to as deep learning models (IBM Data and AI team, 2024)

As Mckinsey & Company (2024) states, *"Deep learning is a more advanced version of machine learning that is particularly adept at processing a wider range of data resources (text, as well as unstructured data including images), requires even less human intervention, and can often produce more accurate results than traditional machine learning"*.

There are 3 types of AI that can be distinguished today, which all find their basis thanks to deep learning. We can distinguish Narrow AI (ANI), general AI (AGI) and super AI (ASI).

#### **2.1.2.1. Narrow AI (ANI)**

Artificial narrow intelligence (ANI), also defined as weak AI, refers to AI systems that have been designed to perform specific tasks like face recognition, playing a game of chess or checking the weather. Narrow AI, as the name suggests, is limited in its scope and can't show the same degree of comprehension or flexibility as a human because it follows a set of predetermined rules. So, although narrow AI is very skilled in its particular field, it is unable to understand, gain, or apply knowledge in other contexts. (*Narrow AI*, 2019)

The benefits of narrow AI are plural. It helps increase efficiency by automating repetitive or mundane tasks and results in people having more free time for other activities. Automation also results in increased productivity and reduced costs for companies. A second benefit that narrow AI poses, is informed decision-making. The algorithms are capable of processing huge amounts of data in a very short period of time, and allow for a quick identification of patterns or correlations in the data that could have been overlooked by human analysis (Nancholas, 2023).

Although narrow AI brings a lot of benefits to many of our industries, some disadvantages also emerge around its existence. Its limitation in scope means narrow AI systems will struggle when faced with a task outside of their trained expertise. On top of this, narrow AI systems also lack human intelligence, which restricts their ability to understand context, make nuanced decisions or even understand difficult scenarios. The data dependence also poses an issue in a way that if biases or inaccuracies are present within a dataset, it will ultimately result in a flawed decision-making. And some concerns can also be found on ethical matters, as powerful narrow AI systems reduce the human involvement in the decision-making process. AI experts agree that it is important to find

a good balance between automation thanks to AI and human intervention to ensure responsible and ethical use of AI. (Nancholas, 2023)

The following examples by Mubarak (2023) present a non-exhaustive list of Narrow AI applications and capabilities used today:

- **Disease diagnosis:** The medical field makes use of narrow AI for disease diagnosis, analysing medical images and predicting patient outcomes by making use of Narrow AI algorithms that are capable of processing large amounts of data and analyse it quickly. This helps health professionals to focus on providing primary care to patients while leaving the narrow AI systems to do the analysis, potentially saving lives.
- **Facial recognition:** Social media platforms (Facebook, Instagram, Google, ...) are able to identify people through facial recognition, which all work based on narrow AI.
- **Virtual assistants:** a lot of first-generation virtual assistants like Siri, Alexa, Cortana or Google assistant work thanks to narrow AI systems. These systems are capable of setting reminders, playing music, texting, or providing the weather.
- **Autonomous vehicles:** Self-driving vehicles make use of narrow AI to process sensory data and make decisions in real time while driving.
- **Finance:** Narrow AI is used by the financial industry for fraud detection, algorithmic trading or customer service automation.

The applications of Narrow AI are limitless, and with the power it offers it should help businesses improve their productivity as well as their general performance. An analysis by (Rao & Verweij, 2024) found that the use of AI in healthcare can result in faster detection and diagnosis which could allow earlier intervention. These systems also allow for personalised treatment and, ultimately, better health outcomes. Von Siemens (2024) also found that the use of Narrow AI can help hospitals significantly reduce energy consumption (by up to 60%) as well as decrease waste in the OR through increased surgical efficiency.

A study by Tang et al. (2022) wanted to analyse whether the use of narrow AI could help diagnose early gastric cancers (EGC) under narrow band imaging endoscopy (NBI), which is normally dependent on specific human expertise and skills. The results showed that narrow AI systems achieved both better diagnostic performance than senior and junior endoscopists, as well as enhanced the performance of senior and junior endoscopists. This further shows the power of such systems and how it can help not only improve accuracy but also efficiency in a very wide variety of tasks and across a vast number of industries.

The current state of AI is represented by narrow AI, where systems are very efficient at completing certain tasks, but lack the comprehensions and adaptability of human intelligence. The future of Narrow AI is set to be very interesting, as we continue to integrate and innovate its power into more aspects of our lives. It should be noted that as

stated, narrow AI “remains a tool, one that requires careful management and ethical considerations to ensure that its impact is positive and equitable” (Narrow AI, 2019).

### **2.1.2.2. General AI (AGI)**

Artificial General Intelligence (AGI), or strong AI, is still a theoretical concept up until today. The aim with AGI is to create systems that are able to perform any intellectual task that a human can. The goal for AGI systems is to replicate human-level intelligence and reasoning, resulting in these systems being able to adapt to any new situation, understand natural language as well as have creativity and emotional intelligence (*Demystifying AI*, 2023). Capabilities of AGI range from imagination, where an AGI system is theoretically able to read and understand human-generated code as well as to make it better, thanks to natural language understanding (NLU) where AGI systems are able to understand human language through context. (Mubarak, 2023)

Although AGI is a purely theoretical concept up until today, founder of OpenAI Sam Altman believes AGI could be developed in a reasonably close future (Browne, 2024).

A study by Fjelland (2020) revisits philosopher Hubert Dreyfus’ work and argues that AGI will not be realized in the future, for the simple reason that having a physical body as well as cultural experiences are crucial for developing true intelligence, which a computer cannot achieve (Dreyfus et al., 1986, p.5).

It is clear that with the evolution of AI technologies today and diverging opinions, only the future will be able to tell us about the realisation, or not, of artificial general intelligence.

### **2.1.2.3. Super AI (ASI)**

Artificial super intelligence (ASI), or super AI, is like AGI also a strictly theoretical concept that has yet to be realized. This category of AI exceeds any human intelligence and ability (Mubarak, 2023) across any field like creativity, general wisdom and problem-solving. Super AI would be the best at everything and be able to reason, learn, form opinions and think at levels that surpass human beings. (IBM Data and AI team, 2024)

Although several studies and surveys have been done in the past to try and evaluate the timing in which AGI and ASI would be achieved, like the studies from Maker (2010) and (Grace et al., 2018) who were partially pessimistic in timing, we seem to now evolve toward more timing optimistic society around the achievement of AGI and ASI (Baum et al., 2011). A well-regarded community forecasting platform predicts an achievement date of 2032 (barnett, 2020), but one of the latest expert surveys suggest a 50% chance of achieving high-level machine intelligence by 2059 i.e. 35 years (B. Zhang et al., 2022).

### **2.1.3. Today’s use of artificial intelligence**

As general artificial intelligence has yet to be realised (Roli et al., 2022), today’s applications of artificial intelligence are limited to narrow AI systems.

Following works by Laskowski (n.d.) and (DigitalDefynd, 2024) propose a non-exhaustive list of current artificial intelligence applications in the world.

#### **2.1.3.1. Healthcare**

Artificial intelligence is used in healthcare for various purposes ranging from improving patient outcomes to reducing costs and allowing professionals to focus longer on important tasks. Radiologists and cardiologists need to examine an overwhelming amount of data which can be time intensive (Filler, 2009), and IBM is actively researching (Syeda-Mahmood et al., 2016) how to improve this with an algorithm they call Medical Sieve (N Murali<sup>1</sup> & N Sivakumaran<sup>2</sup>, 2018). Other studies show that AI systems are capable of generating 80 to 100 daily patient reports with 95% accuracy (Salman et al., 2017), and are even able to diagnose strabismus with a 100% accuracy (Fisher et al., 2007).

#### **2.1.3.2. Business**

In business, AI is being used to help organisations with analytics and customer relationship management (CRM) to better serve consumers, through tools like chatbots. A study by J. F. Wang (2023) found that amongst other benefits, the impact of AI on customer service and problem resolution was improved efficiency, with a dramatic reduction in the number of agents answering simple & routine inquiries and being able to offer more personalized user experience to achieve higher customer intimacy.

#### **2.1.3.3. Finance**

AI in finance can be used for both personal and professional applications. A study from Eling et al. (2022) analysed the impact of AI on the insurance industry and found that insurance companies can benefit from increased operational efficiency, thanks to cost reduction, as well as from revenue growth. Results also found they benefit from better customer experiences through custom tailored interactions with the insurance company. It has to be noted that AI in finance has many risks that still need to be addressed, as many AI programs are still untested in financial crisis situations (Buchanan, 2019).

#### **2.1.3.4. Law**

AI helps lawyers get through the discovery process, sifting through documents faster. The discovery process in legal cases is now mostly outsourced to external firms, and lawyers spend less than 5% of their time on basic document review. Firms also make use of natural language processing for contract review and analysis. (Alarie et al., 2017)

#### **2.1.3.5. Manufacturing**

Manufacturing has been making use of robots for a long time and was at the forefront of incorporating these new systems into its workflow. AI is used in manufacturing to inspect and ensure quality of products. A study showed that AI significantly improves inspection accuracy, leading to reduced defect rates and higher product quality. (Sundaram & Zeid, 2023).

#### **2.1.4. Generative AI**

With the rise of AI in recent years, one particular branch of AI has made an entry with a lot of impact. This particular brand of AI is called generative artificial intelligence (GAI or genAI).

Generative AI can be defined as: *“artificial intelligence that can create original content—such as text, images, video, audio or software code—in response to a user’s prompt or request.”* (Stryker & Scapicchio, 2024)

Another definition by Feuerriegel et al. (2024) explains that generative AI *‘refers to computational techniques that are capable of generating seemingly new, meaningful content such as text, images, or audio from training data. [...] Generative AI systems can not only be used for artistic purposes to create new text mimicking writers or new images mimicking illustrators, but they can and will assist humans as intelligent question-answering systems.’*

What can be noted from both definitions is that genAI allows for the creation of new, original content in various forms, based on a system trained on previous data, with content generated based on user prompts.

These so called prompts are, as defined by Giray (2023), a specific instruction or query you provide to a language model to guide its behaviour and generate desired outputs. Using the right prompts for the best outputs has become so important that prompt engineering is becoming an important branch of genAI for optimal results. Organisations are already implementing changes into their hiring practices that are a reflection of their genAI ambitions, which includes hiring prompt engineers. (McKinsey & Company, 2024)

Generative AI became popularised with the release of OpenAI’s ChatGPT in 2022 and the applications made based on ChatGPT. The rise of generative AI is also due to the fact that it can be handled with natural language, so the use cases have multiplied (Coursera, 2024). Where AI had a barrier to entry in the past, often due to a necessity of technical knowledge, genAI opened endless possibilities due to ease of use and ease of access.

Other significant genAI tools that became very popularised are text-to-image generators, allowing users to generate an image or even videos based on a prompt. Marketeers can use tools like Dall-E or Midjourney to generate an image within seconds that fit with their content marketing strategy (Wahid et al., 2023).

## **2.2. Artificial intelligence in marketing**

As AI has made its entry into the corporate world, marketing has been impacted in various ways. A study from McKinsey (2024) estimates that AI, and more specifically genAI, could add up to 4.4 trillion dollars annually to the global economy. This impact will also be present amongst marketeers. In 2017, only around 20% of marketeers adopted one or

more AI technologies in their business (Bughin et al., 2017). A survey from the Belgian statistical office shows that in 2023 nearly one in two large enterprises used AI in its activities, signifying an accelerating adoption into the professional world (Statbel, 2023).

## **2.2.1. Tools and technologies**

### **2.2.1.1. Conversational AI**

Conversational AI involves leveraging AI technologies like machine learning (ML) and natural language processing (NLP) to develop chatbots, voice assistants and other tools that mimic human interactions. These tools are designed to understand and respond to natural language queries, offer recommendations, and provide personal assistance to customers. (Manic, 2023)

The most used conversational AI tools today are large language models (LLM's) like ChatGPT, which can be defined as 'a category of foundation models trained on immense amounts of data making them capable of understanding and generating natural language and other types of content to perform a wide range of tasks' (IBM, 2023).

### **2.2.1.2. Predictive AI**

Predictive AI can be defined as the "the use of data, statistical algorithms, and machine learning techniques to analyse historical data and make predictions about future events or outcomes" (Božić, 2023). The use of predictive AI in marketing involves using advanced analytics techniques to identify trends, patterns, and relationships in data that can then be used to make informed predictions. Marketeers use it to identify patterns and trends that are used to predict customer actions like their purchasing decisions, which also helps to tailor their campaigns and target the right audience at the right time with the right message (6sense, n.d.).

## **2.2.2. Applications of AI in marketing**

In today's environment, AI is being actively used in one way or another by marketeers all around the world for various applications. Studies like the one from Devang et al. (2019) laid out some of the current applications of AI in marketing. Additions of this non-exhaustive list are made based on the literature.

### **2.2.2.1. Advertising**

AI is actively being used in advertising to generate more leads, more revenue or more impressions. The following table made by Nesterenko & Olefirenko (2023) shows the current applications of AI in advertising within different companies as well as their effects.

**Table 1. Examples of AI applications in advertising by different companies and their effects**

Company	Usage case	Effect
McDonald's	Encouraging consumers to visit their restaurants	Reduction of the price per visit by 168%
Best Western	Personalization of advertising with the help of AI from IBM Watson Advertising	Increased customer interaction time by 2.2 times Increase in website traffic with sales by 48.6%
CVS Pharmacy	Engaging consumers in regions with a high risk of influenza	Attracting 42 million visitors 644 million ad impressions Increase in the number of clicks on ads (CTR - click-through rate) by 120%
Walgreens	Identify potential customers based on weather conditions	379.98% increase in in-store traffic with native advertising
TruGreen	Create ads and optimize solutions based on collected user data	Increase the CTR level by 4 times Visitors stay on the site for 2 minutes longer

Sources: developed by the authors on the basis of (IBM Watson Advertising, 2021).

As we can see from the table, AI has various applications and effects for advertising, with significant impacts on the price per visit, customer interactions, click-through rate or even an increase of in-store traffic. All of these ultimately resulting in AI boosting sales significantly for companies using it.

During a study realized by Nesterenko & Olefirenko (2023) they surveyed respondents about their assessment of several commercials, one of which was generated by AI. The results suggested that the ads generated by AI are more effective than the conventional ones. Additionally, it is interesting to note that AI-driven advertising campaigns have an increased effectiveness compared to human driven campaigns, as found by Nesterenko & Olefirenko (2023).

#### **2.2.2.2. Content creation**

Another impact AI has on marketing is in content creation, including both text and image (or video) generation tools. For copy generation, a lot of tools are available for marketers to use, which are almost all generative pre-training transformer (GPT) tools like ChatGPT from OpenAI, Gemini from Google or Claude 3. A study by Vidrih & Mayahi (2023) explains that the use of generative AI-driven storytelling has a real transformative impact in marketing. With the use of these tools, marketers can now create an engaging, personalized and impactful narrative that resonates with the target customer (Vidrih & Mayahi, 2023). A survey conducted by BCG in countries across North America, Europe, and Asia showed that 49% of respondents already used AI for content creation within their marketing operations (Ratajczak et al., 2023), showing a clear evolution of the use of AI for content creation.

Tools like Dall-E from OpenAI or Midjourney are generative AI tools that are able to generate images based on user prompts. These tools are being used by marketers to generate different types of content, also used in advertising. Examples of AI usage in content creation today are companies like Omneky who leverage tools like Dall-E to actively generate visuals and text that are used on social media platforms (Dillet, 2022).

### **2.2.2.3. Product design**

Marketeers also make active use of artificial intelligence through generative AI image generation tools. These AI image generators go as far as allowing fashion companies to design new wearable products with the help of Midjourney. The image generator allowed for the creation of fashion products that are aligned with specific design criteria and also meeting customer specific needs. The use of the image generator helped marketeers by significantly accelerating the ideation process of fashion design by easily translating initial ideas into detailed design concepts (Y. Zhang & Liu, 2024). This study is one of many examples of how AI can assist marketeers with the creation of new products through genAI content generation.

Another study done by Lee & Chiu (2023) also found that the use of image generators like Midjourney have a positive effect on product design, but are rather complementary to the use of online search visual stimuli than a exclusively superior tool. The study also highlighted that participant have a general positive attitude towards the use of text-to-image generators in their work.

### **2.2.2.4. Marketing automation**

Marketing automation has been one of the first areas in which AI has been applied within marketing, helping marketeers automate a lot of processes. Marketing automation can be defined as “*a technology that manages marketing processes and multifunctional campaigns, across multiple channels, automatically*” (Salesforce, n.d.). It allows for a company to send automated messages across various channels to the target customer. In combination with AI, it enables marketeers to identify qualified leads, develop better nurturing tactics as well as generate relevant content (Haleem et al., 2022). An AI-driven marketing automation platform called Albert, which is able to autonomously optimize the outcomes of marketing campaigns, was used by Harley-Davidson to try and increase their sales in New-York. The results show that Harley-Davidson was able to increase its leads by 29 times thanks to the AI driven platform, showing the impressive capabilities of AI driven campaigns (Power, 2017).

### **2.2.2.5. Recommendation systems**

Recommendation systems are used by many companies to try and suggest relevant products at the right time on the right page. Amazon and Netflix both make use of recommendations on their platforms to try and increase their sales (Shabana, 2021). When combining AI to recommendation systems, companies are able to achieve higher sales and even avoid people churning from subscription services like Netflix. Netflix estimates that the combined effect of personalization and recommendations powered by AI helps them save more than 1 billion dollars per year (Gomez-Uribe & Hunt, 2016). These deep leaning algorithms make use of transaction history, customer profile and other parameters to make predictions and offer personalized suggestions. (Devang et al., 2019).

#### **2.2.2.6. CRM**

Customer relationship management (CRM) is defined as “a set of integrated technologies used to document, track and manage an organizations relationships and interactions with existing and potential customers” (IBM, 2021). It had already been shown that the use of CRM by companies helped to drive growth as well as better ROI (Guerola-Navarro et al., 2024), and with the combination of AI and CRM a business is now able to better predict product recommendations as well as sentiment analysis, speech recognition analysis, algorithm and content summarization with the help of natural language processing (NLP) (Chatterjee et al., 2019).

#### **2.2.2.7. Market research and customer segmentation**

AI applied to market research can help marketers achieve better results by helping them with segmentation, targeting and positioning. AI can also assist in finding profitable client segments through the use of text mining and machine learning algorithms (Wisetsri et al., 2021).

A study from Manic (2023) explains that the use of conversational AI for market research helps to streamline research and offer audience insights that fully understand the target market. The researcher explains that it collects and analyses data at impressive speeds and gives analysts the ability to make quick decisions. Overall benefits of AI use in market research include the reduction in amount of time spent on understanding customer feedback and providing recommendations on how to target them effectively.

#### **2.2.2.8. Chatbots**

Businesses make use of chatbots augmented by AI to better help customers. AI chatbots can be defined as “AI application that uses natural language processing (NLP) to understand and enable conversation between” (A. & John, 2015). They help companies provide a better customer service, improve customer satisfaction or even aid them during the sales process in the context of e-commerce (Nguyen & Sidorova, 2018).

#### **2.2.2.9. Digital marketing**

In digital marketing, AI is used by marketers to understand customer behaviour, actions and indicators. This results in them being able to target the correct individual in a timely and effective manner. AI is also being used to quickly process big amounts of data from emails, social media and the web. Information gathered from data allows to determine which content is most likely to bring customers back to the site, and which customers are most likely to unsubscribe. Marketers may also use AI in digital marketing in combination with marketing automation to help them make the right decisions and have a beneficial influence on company outcomes (Haleem et al., 2022).

#### **2.2.2.10. E-commerce**

AI applications in e-commerce include enhancement of customer experience through AI assisted chatbots, personalised recommendation systems, fraud detection and

prevention, supply chain management enhancement as well as dynamic pricing (Joshi, 2024).

#### **2.2.2.11. Decision making**

AI helps marketers make better decisions by analysing big amounts of quantitative and qualitative data. Deep learning is used to analyse all the data and help marketers gain better insights and understand a consumer's interaction, leading to overall better individual targeted campaigns and ROI. With AI becoming more widely available, agencies can use it to analyse data, predict trends and improve the quality of their brand, which overall results in an increase in sales while saving money (Haleem et al., 2022).

#### **2.2.3. Challenges of AI in marketing**

The implementation of AI into marketing has come with some challenges for a lot of companies. According to a study from (Mahabub, 2023), one of the challenges of implementation of AI is the technical limitations. These technical limitations mean that companies need to train their marketing teams as the adoption of AI is a transformational process.

Having good quality data as well as handling this data is also a challenge of the implementation of AI in marketing as AI models are based on this data (Mahabub, 2023).

Costs related to the usage of AI tools can also be a difficult challenge, especially for SME's, as the price of certain tools can quickly stack up to important amounts as licenses need to be paid on a per-user basis (Kshetri et al., 2023). This can lead to companies having to make difficult choices as to which tools to use.

Furthermore, surveys showed that companies are inputting confidential customer information into genAI tools like ChatGPT (Kshetri, 2023), which is a privacy concern as well as a challenge, as studies showed that consumers are less likely to do business with a company that fails to protect their confidential data (Kshetri et al., 2023). Other challenges include costs with transitioning to new tools as well as employees' unwillingness to use genAI, concerns as to how genAI would fit into corporate culture, and concerns about genAI leading to job losses (Kshetri et al., 2023).

#### **2.2.4. Advantages, risks and limitations of AI in marketing**

The use of artificial intelligence in marketing brings some risks and limitations with it. One of the big risks associated with the use of LLM's like ChatGPT are the hallucination effects. These hallucinations occur when an LLM like ChatGPT produce seemingly credible but incorrect responses, like inventing words that it doesn't understand (Xiao & Wang, 2021). These hallucinations can become a risk for any company if they publish AI generated content that contains misinformation. Another issue from using LLM's is that they are prone to just follow instructions from the user rather than having a genuine conversation. When the information given by the user is insufficient, the models tend to

make assumptions about what answer the user wants to get instead of asking for clarifying questions (Shen et al., 2023).

Although being revolutionary, the use of AI image generator tools is still not perfect and can display visible flaws, like shown by Bhaimiya (2023), which can be a risk for marketers if used for official communication channels.

When using AI for marketing or other purposes, the quality of the output will depend on the prompts constructed by the user. If a prompt is not clear, the desired output might not be attained. These limitations can be addressed through new roles like prompt engineers or by educating the user on correct prompt engineering (van Dis et al., 2023).

Data collection and data handling is also a concern for marketers as a study done by Chatterjee et al. (2019) has shown that without benefitting and actionable data, no AI algorithm will be able to deliver meaningful and effective predictive experiences. It is thus of capital importance for organizations to possess the necessary workforce and experience in data analysis in order to efficiently gather, analyse, synthesise, and apply data as to employ AI to perfectly forecast customer behaviour. Data thus represents a real challenge for marketers and only collecting data of customers without proper segmentation would not give effective results by application of AI (Chatterjee et al., 2019).

The use of AI also represents some significant advantages for marketers. Studies show that SME's are prone to focussing more on running their core business activities which results in less time available for creating valuable content for their customers (Taiminen & Karjaluoto, 2015). AI creates opportunities for SME's to remove their knowledge and time limitations and creating them a lower barrier to entry to compete with big companies who have more resources (Wahid et al., 2023).

Marketers also express that implementing AI into their marketing operations help them increase efficiency as well as to save time by helping speed up data processing and ensuring accuracy and security (Haleem et al., 2022). A survey conducted by Salesforce showed that the use of genAI saved marketers over 5 hours of work per week (Salesforce, 2023). It also eliminates laborious and time-consuming activities by automating routine and repeatable tasks which means marketing teams can focus more time on strategic goals to create effective AI-powered campaigns (Jarek & Mazurek, 2019).

Other advantages of AI implementation include better conversion rates, ability to make more informed marketing decisions, having a better grasp of consumer data, enhancing the ROI and providing the ability to deliver more value to clients as well as better service (Mahabub, 2023).

### **2.2.5. Ethics and privacy**

With the accelerated adoption of AI in marketing, significant ethical and legal concerns are raised (Kumar & Suthar, 2024). A study found that image generators pose a potential big risk for marketers as they highlighted the presence of two biases embedded within AI image generators, being systemic gender and racial biases as well as subtle biases in facial expressions and appearances. The risk associated with the use of these biased models may shape and reinforce societal perception and stereotypes, which companies may not want to be associated with (Zhou et al., 2024).

Data privacy is also a concern for marketers as AI systems frequently rely on extensive data collection and processing which can raise significant privacy and security issues (Mittelstadt et al., 2016). Transparency and understanding how decisions are made and who are accountable for them, social biases leading to discriminatory outcomes and intellectual property, and consumer protection are amongst other current ethical challenges that marketers and other industries face (Kumar & Suthar, 2024).

### 3. Methodology

#### 3.1. Qualitative approach

The research method used in this research is a qualitative method by means of a content analysis. Due to the exploratory nature of the research, this qualitative method was deemed appropriate for capturing the depth and complexity of the experts' perspectives on AI's impact in marketing (Harwood & Garry, 2003).

Interviews were performed with marketing specialists from both SME's and big companies in Belgium. A sample size of 13 interviews was chosen and 13 interviews were effectively conducted with Belgian marketeers.

The semi-structured interview approach was used, and the marketing experts were presented with a list of 14 open-ended questions around the topic of AI in marketing and its impacts (see table 2). However, due to the inductive research approach, where the current hypotheses are not limited, new questions could be added to the interview based on the circumstances. The interviews all lasted between 30 and 50 minutes and were conducted over the course of 3 weeks.

**Table 2. Questions asked during qualitative interview**

<b>Interview question</b>	
Question 1	<i>Can you introduce yourself and describe your current role in marketing?</i>
Question 2	<i>How long have you been working in marketing/this company, and what significant changes have you observed over the years?</i>
Question 3	<i>How would you define artificial intelligence in the context of marketing?</i>
Question 4	<i>Can you describe some specific AI tools and technologies you currently use or have used in your marketing activities?</i>
Question 5	<i>How has artificial intelligence impacted your marketing strategies and campaign effectiveness?</i>
Question 6	<i>Can you discuss some challenges you faced when integrating AI into your marketing strategies?</i>
Question 7	<i>How has AI changed the way you approach market research and customer segmentation?</i>
Question 8	<i>How has AI changed the way you analyse and utilize customer data?</i>
Question 9	<i>How do you see AI affecting the creative aspects of marketing, such as content creation and design?</i>
Question 10	<i>What impact has AI had on marketing analytics and the measurement of campaign effectiveness?</i>
Question 11	<i>What opportunities do you believe AI presents for the marketing industry?</i>

Question 12	<i>How do you see the role of AI in marketing evolving over the next five years?</i>
Question 13	<i>Do you think there are any ethical considerations or risks associated with using AI in marketing?</i>
Question 14	<i>What advice would you give to other marketing professionals considering adopting AI technologies?</i>

### 3.2. Sampling

The experts were selected based on the concept of purposeful sampling. This means that the participants were identified and selected due to the fact that they are knowledgeable about or have experience (Creswell & Clark, 2017) with the use of AI in marketing. The main selection criterion for this study was that the interviewees had to work for a company that actively makes use of AI in their marketing activities. This was to ensure that marketeers with firsthand experience in AI and marketing could provide a more precise evaluation of AI's impact on marketing.

Based on the selection criteria, a total of 13 interviews were conducted with experts from 13 different companies. Table 2 provides an overview of the participants profiles.

**Table 3. Profile of the participants**

<b>Participant</b>	<b>Position</b>	<b>Company</b>
Expert 1	Co-founder	Imagin3studio
Expert 2	Marketing officer	Agoraz & incroyIAble
Expert 3	CEO	Stairway & Bablr
Expert 4	Solution engineer	Salesforce
Expert 5	Head of marketing cloud	Forward
Expert 6	Managing director	Human37
Expert 7	Marketing strategy lead	Microsoft
Expert 8	Generative AI marketing specialist	Ontex
Expert 9	Digital creative strategist	DesiRED
Expert 10	Communications manager	Materialise
Expert 11	Owner	Fair advantage
Expert 12	Chief innovation & data officer	Space
Expert 13	Commercial & digital strategic business solutions director	Coca-Cola europacific partners

### 3.3. Ethics

All of the participants were made aware of the facts that audio data was going to be recorded during the interview, and be transcribed, anonymized and analysed for the

purpose of this research. They were given the context for the need of this interview and notified that the recordings would be deleted upon completion of this study, all of this to ensure that privacy and confidentiality were maintained throughout the research process, with sensitive data only available to the researcher.

### **3.4. Data analysis**

The recorded interviews were transcribed by the researcher to ensure accuracy in the data representation. The transcriptions were imported into the qualitative data analysis software ATLAS.ti to facilitate the coding and analysis of the data. Open coding was used to identify distinct concept within the data and these codes were generated inductively from the content of the interviews (Sybing, n.d.). As the coding process progressed, similar codes were regrouped into broader categories to organize this data more effectively.

The findings of this study are presented through the codes that were identified during the data analysis, with each code being discussed in the findings section where quotes from the interviews are used to illustrate how AI is used and perceived by the marketing experts.

## 4. Findings

In this section, results are presented from the semi-structured interviews conducted with marketing experts on the impact artificial intelligence has on their work as marketers.

### 4.1. Tools & technologies

As it comes to the AI tools used by the marketing experts, all 13 interviewees explained using at least one generative AI tool like ChatGPT, Claude, Perplexity, Vertex AI, Heygen, Midjourney, Gemini, or ElevenLabs for various tasks like content generation, image and video creation, text generation, and more. Not only generative AI tools are used by the experts, but also predictive algorithms for optimizing campaigns and automating triggers, like Salesforce's own embedded Einstein AI.

*"that means we use a lot of Salesforce embedded AI, and Salesforce has their own kind of AI concept, which is called Einstein" – Expert 5*

*"We work a lot with chatGPT agents, so we create an agent inside the chatGPT for the team for easier work." – Expert 8*

*"ChatGPT, Claude, Gemini, have all been used for blog articles, LinkedIn posts, social media posts in general, emails to potential customers, setting up quotes for customers, preparing slides, Midjourney or DALL-E or Leonardo AI for creating visuals for clients of mine. I've used Heygen for getting videos of clients into another language, spoken by the voice of the presenter in the video. Those are the main things I can think of now." – Expert 11*

### 4.2. AI as a co-pilot

Out of the 13 experts, 11 expressed that AI, and more specifically genAI tools, acts as a literal co-pilot in different kinds of tasks ranging from market research to data analysis or decision making. Most of them mentioned the ability of genAI to be an assistant and help marketers brainstorm ideas and projects, augmenting their capabilities while executing the work faster and being able to focus on the more important and less redundant tasks.

*"marketers have a tool that they can use to create new content with but also to brainstorm ideas and then to use as a reasoning partner, a sparring partner, those kinds of things" – Expert 10*

*"it can aid as an assistant where you can brainstorm ideas off. It can put those ideas also in a sort of structure, marketing structure, marketing strategy structure. Helps to focus more on being creative and don't waste too much energy of putting in the right structure or format or layout or thinking about all the other necessary things that come with determining a strategy" – Expert 11*

Although interviewees expressed their acclaim for genAI's ability to assist marketers in different tasks, one of them expressed a more critical view on its abilities and that marketers cannot take it for granted.

*"It's a Copilot. It's really an assistant. AI should help you. But don't take it for granted."* – Expert 5

### 4.3. Automation

Automation is highlighted by the experts as an important benefit of AI in marketing, with 16 mentions across interviews. Experts are generating bots within genAI tools like ChatGPT to help them automate task and gain time over the long term. They explain that automation, along with generative AI, can help streamline tasks such as A-B testing and content creation, speeding up processes. In essence, the trend towards automation and AI integration aims to simplify tasks, increase efficiency, and support autonomous task execution over time.

*"We can do a lot of more A-B testing, come up with creative imagery. So it speeds up a lot of things"* – Expert 3

*"Then, you have all of those predictive algorithms, so next best product, next best offer, next best action. Those are super important for any campaigns. Also, automating triggers"* – Expert 4

### 4.4. Speed and efficiency gains

When questioned about the efficiency of AI usage, all of the 13 experts unanimously agreed on the important impact AI has on their time and work efficiency, with AI significantly reducing the time required to complete tasks and allowing marketers to achieve in hours what previously took them days.

*"Well, I think it's, first of all, helping to take away parts of the boring work, because mostly in marketing, you have like a general idea of where you want to go and what you want to create, but then you still need to make it happen. [...] It can help to create more in-depth insights on a customer or creating cohorts for your social media campaigns and come up with ideas on how to reach those"* – Expert 1

*"Now we can do in four hours, what we can do in five days"* – Expert 2

*"People think that sometimes I spent like five or 10 days working on it, whilst actually I can do it in two days"* – Expert 7

Experts also mention that a significant advantage from the saved time also include budget saving, as they don't need to hire external expertise for certain tasks, which is now replaced by AI.

*“Time-saving is cost-saving”. – Expert 3*

*“It saves a lot of money, for example, company had to pay, for example, for photo shooting like 5,000 euros, so now you don't need to do it because you can create everything in mid-journey”. – Expert 8*

As AI impacts campaigns and marketer’s budgets, interviewees explain that AI can impact the simple daily tasks like writing an e-mail faster:

*“I'm going to quickly describe the email that I want to write, for example, and then, yeah, in a few seconds, I already have an email draft.”. – Expert 4*

#### **4.5. Content creation and creativity**

As genAI tools evolve, they get better and better at creating content. Although little previous literature pointed at the real impact of the use of genAI on content creation, all of the 13 interviewees expressed the effects genAI tools have on their operations, with 42 mentions across interviews. The most used genAI tools amongst marketers varied from any LLM for textual and copy generation to Dall-E and Midjourney for image generation.

GenAI is seen by marketers as a tool that enhances creativity and productivity in their content creation. Many believe that it can be a valuable asset in generating ideas and speeding up processes, although not all of them agree that it can currently be used for professional use, with mentions of tools lacking diversity in content. As some of the marketers praise the use of genAI generated content, others explain that a lot of work is needed as the image generated content does not feel like a real picture, signaling a contrasting use of content creation tools by marketers.

*“I think in terms of content generation, that AI will do probably 95% of the job” – Expert 1*

*“You used to be forced to know Photoshop, for instance. You don't need that anymore nowadays” - Expert 6*

*“I wouldn't recommend brands to really go with image content just because it still looks fake, but I'm confident that it will get better and better” – Expert 4*

A lot of experts mentioned creativity in relation to content creation, and express that while AI can support creativity processes, they still believe that true creativity and innovation come from human minds thinking about what doesn't exist yet, with AI helping to speed up creative processes, save time, and challenge and generate new ideas. Although genAI may not yet completely replace human creativity, marketers expect it to play a significant role in various aspects of content creation in the future.

*“The true creativity is something that doesn't exist yet. And at this time, AI is trained on human data and existing data. So yeah, it can help to achieve some combination that we didn't think about. But the true creation, creativity, innovation, it's thinking about something that doesn't exist yet. So at this time, I'm not afraid of that. And I believe that, yeah, it can, you know, like be a creativity booster.” – Expert 2*

*“I use it as a companion, so I go faster” – Expert 3*

*“Helps to focus more on being creative and don't waste too much energy of putting in the right structure or format or layout or thinking about all the other necessary things that come with determining a strategy” – Expert 11*

#### **4.6. Challenges and difficulties**

When questioned about the main challenges of AI integration in marketers' operations, 3 main categories were identified as being the biggest hurdles marketers face. The first and primary challenge mentioned by 5 out of 13 experts is the concern around data quality, data security and data usage. With the boom of LLM tools like ChatGPT, marketers explain data cannot just be put into genAI tools without risk. When other AI tools are used applied to data, the biggest challenge is to make sure that this data is usable and clean, which isn't the case for a vast majority of companies according to the experts.

*“The biggest challenge is data quality” – Expert 6*

*“the biggest challenge is, first of all, data” – Expert 7*

*“There are a lot of challenges with data security” – Expert 8*

*“I think the most important is that most of the tools that are out there, they're public, right? Except in the context of your own business, asking ChatGPT to do a strategy for you is pointless. Why? Because they don't have access to your context, they don't have access to your customer data. So as such, those tools in a business context, they're pointless. Meaning you need to have your own AI into your tools. That's a challenge, because either you develop it yourself, and it's very expensive, and it's very time consuming. Or you buy a solution, and there you can really ground that into your flow of work.” – Expert 4*

4 experts mention the difficulty faced around the choice of tools, as genAI tools are present in all kinds of formats with each their slight differences. It poses to be a difficult task to choose the correct tool for the job that marketers are seeking it to do.

*“There are a lot of different tools. And each tool comes with a payment plan. And then it's hard to select the right tool if you have a subscription of one year. It can be an investment where some other tools come up next month and could be more interesting than the one you signed up for. That's a challenge.” – Expert 3*

*“AI actually was the birth of so many different AI applications that you could spend months investigating and trying to actually use all these different AI applications. You have definitely so many to generate images, now you have AI to generate videos. AI is everywhere. Sound, video, copy, imaging, concept, data, and everything is, so the whole different, it's impossible to keep up with everything which is available, and then if you finally find something, you still need to find, you still need to investigate, like, can I use it, and when I use it, will it be mine, or is it a legal implication, and can I use it for a customer?” – Expert 5*

One of the experts even talks about genAI as a potential mean to dismiss marketing, as its capabilities allow to generate the same amount of output for less resources.

*“So for me, it's a threat because in the kind of the cost conscious world that we're now in, people try to use it as a dismissal of marketing. Do the same for less.” – Expert 7*

Furthermore, other challenges that are mentioned are the difficulty of learning to use and correctly prompt a genAI application as well as educating people to use it, inconsistencies in genAI output, fear of losing their job, and fear of using new technology.

#### **4.7. AI in market research and customer segmentation**

10 out of 13 interviewees explained that they actively use AI for market research and that genAI is transforming market research by handling tasks like creating questionnaires, analyzing data, making reports, generating recommendations, and even automating focus group questions. It streamlines processes, allows for better segmentation, and accelerates data management. 5 experts really praised genAI's capability of acting like a customer, enabling marketers to discuss topics with virtual customers in real time.

*“I use the tool to, for example, to act as my customer and I will show it what I plan to do or I will ask it feedback on things that I have done. I will ask it for feedback on campaign ideas that I have and those kinds of things” – Expert 10*

*“market research, with AI, you can talk to your target audience without talking to it. So you can already get some stereotype info about your target audiences or different customer segments before even talking to a customer. So validating certain USPs of your product or service before even talking to a real person.” – Expert 11*

#### **4.8. Ethical considerations and risks**

As it comes to the ethical considerations and risks of AI usage by marketers, the interviewees highlighted that everything around data usage and data security poses the biggest risks, with 12 out of the 34 mentions around ethics being data utilization. Marketer's main data concerns revolve around data being biased and its implications, as well as user data being wrongfully processed without consent and the usage of unclean data.

*“So there would be need of, big restrictions on who can use the data.” – Expert 3*

*“You need to make sure that your customers, that they gave consent for you to use the data and also what type of data. So you need to make sure that you gather all of the consent.” – Expert 4*

*“We touched upon this a bit before, but it needs everything related to biases. It's a key concern. It's a key concern and also who has the responsibility, the people drafting the algorithm, the people using them, people who selected the data, which is going to come in. Who can you blame when stuff hits the fan? That's really tough.” – Expert 4*

*“We all have biased data. All the data that we have as marketers is all biased. [...] You need to solve your data in order to properly use AI.” – Expert 5*

Other ethical considerations mentioned by interviewees included the legal implications of AI usage, the replacement of human by machine and regulations not evolving as fast as the technology.

*“You can't just replace human by machine” – Expert 12*

As the experts further highlighted the importance of the ethical considerations and risks of AI usage in marketing, all of them expressed the urgency and importance of ethical considerations, except one of them that expressed that the ethical discussion should not be a priority of marketers themselves, but rather from higher up.

*“I think it's a discussion that transcends marketing as a profession” – Expert 1*

#### **4.9. Data utilization**

As experts highlighted their concerns around data and AI, mentions were made of AI being able to supercharge data and better communicate with customers, remodeling data that is being lost, enabling to derive meaningful insights from data with improved decision-making, and make marketing strategies more effective amongst other benefits.

*“And that's where AI is coming back because what AI is doing today is remodeling data that are being lost.” – Expert 6*

The ability to analyze big amounts of data without being a data analyst is highlighted by 2 experts which benefit from less admin time related to data analysis as well as faster and more useful insights.

*“Strength of AI lies there in doing the first analysis on big amounts of data. You don't have to be a data analyst anymore to really get some useful insights from within the data.” – Expert 11*

*“We can remove lots of admin associated with it because in the past we had lots of operational people zooming into Excel files trying to crunch some numbers and it allows us now to automate lots of these processes” – Expert 13*

As data is discussed, marketeers continuously reiterated the importance of data quality, infrastructure, and data platform before implementing AI solutions, as proper data management and ownership are essential for successful AI implementation. If data is not clean enough and ready to be used with AI, results might be disappointing as experts explain.

*“And the thing that a lot of companies struggle is legacy data. Bad data, badly synchronized data, legacy data, polluted data, biased data. And so if we start to train models on this kind of data, AI fails.” – Expert 5*

*“Then people are going to be like, okay, now, and it's happening already. I did invest quite a lot of money to use those models, build them, train them on top of my data. The output that I'm getting is not wow.” – Expert 6*

#### **4.10. Product design**

Although the majority of experts focused on the use of genAI tools in tasks like market research, data analysis and content creation, only 2 out of the 13 experts specifically mentioned leveraging these tools for product design. Despite it being a less common practice among the experts interviewed, the insights provided by the interviewees highlight the potential of genAI in innovative product development. Advantages of the use of genAI tools for product design include reductions in both time and costs.

*“All visuals for now I create in mid-journey and even we create the 3D packaging, we create the packaging designs for our products in mid-journey and I can say that it saves a lot of money” – Expert 8*

#### **4.11. Personalization**

As personalization is becoming increasingly important in marketing, 6 experts expressed that AI can help to supercharge personalization for consumers, by enabling tailored messaging for specific audiences or channels. AI can assist in user segmentation, understanding clients and prospects, and creating personalized content for each individual.

*“You can even have copywriting that's looking at your data that will personalize the copy for you, and you even have tools to do this in the salesforce marketing world that actually is going to combine and make sure that your copy is personalized based on the information, so you have different kind of copies” – Expert 5*

*"It helps in personalising your message to certain audiences or for certain channels. So you can have a general story about your brand or product. And it takes a lot of effort to personalise that for a certain target audience or a certain niche. So AI helps with that."* – Expert 11

#### **4.12. Competitive advantage**

With 12 coded mentions, 8 experts discussed that genAI like ChatGPT, Midjourney, and Heygen are revolutionizing marketing and enabling even smaller companies and startups to create powerful campaigns efficiently. The experts say that mastering AI tools will be crucial for future success in the workplace, as those who can integrate AI effectively will have a competitive advantage, and thus stress the urgency of adopting AI tools to keep up with competitors.

*"Really start now. Don't wait until, the market is saturated. Other agencies are speeding up, are trying things"* – Expert 3

*"I know agencies that have automated the whole thing through AI and that basically can do the same work but in less amount of time."* – Expert 6

#### **4.13. Advice given by experts**

As AI usage in marketing is becoming increasingly prominent across the industry, interviewees agreed that encouraging the use of AI is the best advice they can give to any marketer. They encourage anyone to experiment with AI tools in marketing to demonstrate their value and integrate them into their workflow. They further advice to focus on not only educating yourself but also other people that might not be AI and technology savvy. It is also important to not do AI for the sake of doing AI, but to ask yourself how AI is capable to help. Ultimately, the experts recommend others to start small with AI experimentation, to continuously educate themselves, and to encourage others to do the same.

*"Don't follow the mass, which means it's not because another company is doing this, you need to do it. So pick your battles. First, ask yourself why. What is the problem I want to solve? If there is a problem I want to solve, then you pick the battles."* – Expert 5

*"Don't forget that it's only a tool. Start by defining what you want to be able to do from a business standpoint and then think about how AI can or cannot help you achieve your goals."* – Expert 6

*"Do it, because if there is one industry where the quote 'you will not be replaced by AI, but you will be replaced by humans using AI' that's very true for the marketing industry."* – Expert 11

#### 4.14. Future of AI in marketing

Experts predicted that the marketing industry will see increased automation and AI-driven processes leading to cost-efficiency and productivity gains. This will impact roles such as copywriting and design, with focus needing to shift towards strategic thinking rather than execution.

*“I think it will be totally another world, especially in content creation and marketing already we have like AI movies which we can use for AI advertising, we can create AI creatives, we can create text, there will be chatbots where you don't need to type anymore, you will use the voices, for example, now in Midjourney I'm writing the prompts, I'm sure that in the future I will just tell, hey, Midjourney, can you do for me this or that, so I don't even need to learn how to make all these prompts and so on, so I think it will be more easier” – Expert 8*

*“Media agency will start automating a lot of things. We'll use AI to automate a lot of processes, a lot of repetitive operations.” – Expert 12*

As the opportunities of AI are discussed, two sides seem to emerge on the topic of job creation and job losses. Some experts tend to agree that AI will allow for job creation, but others expect AI to result in significant job losses although productivity will remain the same, if not increase. GenAI is also discussed as being a deciding factor in future development of the role of marketers.

*“I think Gen AI is going to keep growing, become more and more important. You're going to have people that are going to be specialised in that. There are big opportunities.” – Expert 6*

*“It will create new trends, new markets, new, new technologies. So new, new works, new jobs, new, you know, everything.” – Expert 9*

*“And as these tools get better, also better output for the same cost. And probably, and that's the downside of it, it will probably lead to people being fired.” – Expert 10*

*“Bigger agencies will have to let go a lot of people who are executing certain tasks like copywriting or designing certain things” – Expert 11*

Experts also expressed that the role of marketers will change dramatically, with a shift towards machine-human interaction. More companies including smaller businesses and startups will also be able to leverage AI tools for marketing campaigns and lower the barrier to entry.

*“I think that we will more and more have machine human interaction.” – Expert 9*

*“And I think marketers will probably become more and more people who operate the machine” – Expert 10*

*“Tomorrow, you can become a creative agency and start helping brands create content and you only need to prompt properly. That kind of removes a barrier that used to be an important one.” – Expert 6*

## 5. Discussion

The findings from this study provide valuable insights into the impacts of artificial intelligence on marketing. By analysing the data from the semi-structured interviews with marketing experts we can draw several conclusions.

First, these findings illustrate that the use of generative AI tools is on the rise as it bridged an important gap for a lot of marketers. As the study done by Taiminen & Karjaluoto (2015) showed that SME's have less time available for other tasks than their core business, this study reinforced and improved the findings of Wahid et al. (2023) by confirming that generative AI tools remove a barrier to entry and to compete with big corporations, through time and budget savings, as well as general ease of use. The experts thus emphasized that mastering genAI tools like ChatGPT, Midjourney, and Heygen is essential for gaining a competitive advantage in the rapidly evolving marketing landscape. They stress the urgency of adopting these tools to stay ahead of competitors, particularly as SME's and startups can now leverage AI to create impactful campaigns efficiently.

The findings also suggest that generative AI tools now act as an assistant and co-pilot to assist experts in decision making, project brainstorming, and ideation, resulting in an increase of available time for what experts call more important and less redundant tasks. The role of generative AI as a co-pilot in marketing not only enhances efficiency but also signals a shift in the professional landscape, where human expertise seems to be increasingly augmented by AI-driven insights. Additionally, generative AI tools also enable automation of tasks and personalisation for consumers through tailored messaging and personalized content, showing genAI's capability to further improve efficiency for marketers.

In line with the literature, the experts emphasized both the transformative potential and the challenges of AI in data utilization. While AI enhances the ability to analyse large datasets and derive meaningful insights, the quality of the data remains a critical factor. These findings align with the existing concerns brought up by Mahabub (2023) and Chatterjee et al. (2019) about the importance of clean and well-managed data for effective AI implementation.

As the study by Kshetri et al. (2023) already uncovered the difficult choice of tools to use due to important budget constraints, the data from interviews supports the difficult task for marketers due to a high volume of available tools with only slight differences. The results also indicate that additional challenges emerge like difficulties to educate marketers in relation to prompt engineering and inconsistencies in genAI output which is difficult to manage. The experts also highlight reluctance to use new technology that can be attributed to the rising fear of job loss within the industry.

In terms of content creation, the findings indicate that experts make use of generative AI to enhance creativity and productivity in their content creation. Amongst the experts, opinions differed significantly around the use of genAI content for marketing purposes,

as tools lack diversity and content and accuracy in image realism. In terms of creativity, various reasons were mentioned by experts that explain AI still lacks true creativity and that the human mind is still of capital importance in marketing operations.

On the topic of product design, this analysis supports the findings of Lee & Chiu (2023) with experts expressing the capabilities of generative AI use in designing products, with tools like Midjourney being used by brands to design packaging in a cost-effective way. This highlights the generative power of AI for marketers, opening up possibilities that were not achievable beforehand.

Findings on market research support the study made by Manic (2023) on the use of conversational AI for market research and deepens the results with experts expressing the ability to use generative AI to create questionnaires and generate recommendations. In addition, generative AI enables marketers to discuss in real time with virtual customers through conversational AI tools.

Amongst the expert opinions, we find broad agreement towards AI's capabilities to improve speed and efficiency. The experts' experiences demonstrate that AI not only accelerates routine tasks, such as email drafting and social media cohort creation, but also leads to important budget savings by reducing the need for external expertise. These insights confirm the growing reliance on AI to enhance productivity in marketing, offering both time and cost efficiencies.

When discussing the ethical concerns of AI in marketing, we found that the results are largely in line with the claims of Kumar & Suthar (2024) and Zhou et al. (2024) around the legal concerns and the risk associated with the use of data. Experts supported the claims by expressing concerns around the use of biased data as well as accountability for the consequences of unethical data use, emphasizing the need for better regulations and ethical guidelines to govern AI applications in marketing. In addition, there are worries about the potential misuse of consumer data, reinforcing the necessity for transparency and responsible AI practices.

Regarding the implementation of AI in marketing, the experts share clear advice. Marketers should actively experiment with AI as much as they can, integrate it into their workflows and continuously educate themselves. They should be aware that AI should be used strategically to solve specific business challenges and achieve goals instead of adopting it simply because it's available.

Looking towards the future of AI in marketing, the experts predict a significant increase in automation and AI-driven processes, which they expect will enhance cost-efficiency and productivity. Even though new opportunities in AI specialization will emerge, experts still raise concerns about job losses. The evolution of AI tools, like generative AI, suggests that marketers will need to adapt to more strategic roles focused on human-machine interaction.

## **6. Limitations and future research**

While this study provides new insights into the impact of AI on marketing, it is not without limitations. Due to the fast-evolving nature of the AI industry, some of the findings of this study may quickly become outdated as new tools and capabilities or new regulations can emerge.

As the study involved interviews with 13 experts, it may not be representative for all marketing professionals in the industry and results may thus not be generalizable. Additionally, as all experts were selected from Belgium, results may differ in other regions where they might experience the impact of AI in marketing differently.

The findings of this study are based on the participant's self-reported experiences, which could be influenced by their personal biases and knowledge. This can potentially limit the objectivity of the data.

Finally, there is still limited existing literature on the topic of generative AI use in marketing, which limited the quality of the references used in this study. Coding was performed in the ATLAS.ti software by the researcher, which may decrease the reliability of the study.

From a future research viewpoint, a larger and more diverse sample of experts across different industries and regions could be selected to enhance the generalizability of the findings.

As generative AI tools evolve quickly, new tools and applications are likely to emerge with additional impact who could be investigated. Future research could also perform a quantitative analysis to evaluate the extent of AI's impact on marketing outcomes.

Finally, future research may want to dive deeper into AI's impact and how it is transforming specific marketing roles such as copywriting, design and data analysis, and how these professionals are adapting.

## 7. Conclusion

This paper explores the impacts of AI on marketing through semi-structured interviews with various marketing experts. Based on the qualitative analysis, this thesis has shown that the findings align and reinforce current literature, but also uncovers new impacts of the use of artificial intelligence in marketing.

The findings of this study support the existing literature in several important areas of marketing. As found in previous research, AI continues to play an essential role in product design, marketing automation or even market research. It was found that the ability to engage with consumers through tools like ChatGPT has been reinforced, and highlights the potential of AI to facilitate deeper insights for marketers.

The challenges associated with AI use in marketing, including issues around data quality, biased data and the reluctance of some professionals to adopt new technologies due to fear of losing their job are consistent with the existing literature. Additionally, the importance of data as the foundation of a successful AI implementation is highlighted by the expert and also aligns with the concerns found in previous research. The concerns about biased data and its impact on marketers' outputs also remain a significant issue that emphasizes the need for better data management practices.

This study also highlights that AI continues to lower barriers to entry, allowing SMEs to compete with bigger corporations with the help of tools that increase available time and efficiency. In addition to time savings, experts now recognize AI's ability to deliver significant budget savings, making AI adoption even more attractive to business of all sizes.

While some of the findings align with existing literature on AI's role in marketing, this study also uncovers new insights, particularly in the area of generative AI's use. One of the most significant findings is the adoption of the recent genAI tools, which are transforming how marketers approach their work. These genAI tools act as a co-pilot in marketing by assisting marketers not just in executing tasks but in the creative and strategic processes as well. This change is most noticeable in content creation, where image generators like Midjourney are being used to produce creative content. Experts are however divided regarding the usability of these tools, indicating that this area is still developing.

Ethical concerns have become more pressing for marketing experts as they express that regulations are struggling to keep up with the rapid evolution of AI technologies as well as concerns around data being wrongfully processed without consumer consent.

When it comes to data, genAI applications have improved the ability to analyze big amounts of data quickly as well as allow marketers to remodel data that is lost, which revolutionizes how marketers derive insights and make decisions.

Finally, valuable advice is given by experts on the importance of strategic AI implementation. They recommend other marketers to start small and experiment with AI tools. They emphasize the importance of using AI to solve specific business challenges rather than adopting it for its popularity in the industry.

In conclusion, this thesis has contributed to the growing literature around AI and marketing by reaffirming existing research on this topic, but also by providing new insights into the impacts of artificial intelligence in the marketing industry. The current evolution of AI and genAI present both opportunities and challenges for marketers, who must carefully navigate them to extract AI's full potential in marketing.

## 8. References

- 6sense. (n.d.). *What is Predictive Marketing? Definition & Best Practices* | 6sense. <https://6sense.com/>. Retrieved July 28, 2024, from <https://6sense.com/platform/predictive-analytics/what-is-predictive-marketing/>
- A., S., & John, Dr. (2015). Survey on Chatbot Design Techniques in Speech Conversation Systems. *International Journal of Advanced Computer Science and Applications*, 6(7). <https://doi.org/10.14569/IJACSA.2015.060712>
- Alarie, B., Niblett, A., & Yoon, A. (2017). How Artificial Intelligence Will Affect the Practice of Law. *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.3066816>
- barnett, matthew. (2020, August 23). *When will the first general AI system be devised, tested, and publicly announced?* <https://www.metaculus.com/questions/5121/date-of-artificial-general-intelligence/>
- Baum, S. D., Goertzel, B., & Goertzel, T. G. (2011). How long until human-level AI? Results from an expert assessment. *Technological Forecasting and Social Change*, 78(1), 185–195. <https://doi.org/10.1016/j.techfore.2010.09.006>
- Bell, M. (2015, November 20). *Will smart machines out-create us?* Royal Television Society. <https://rts.org.uk/article/will-smart-machines-out-create-us>
- Bhaimiya, S. (2023, March 27). “Plasticky, hyper-realistic”: *If you fell for the viral, AI-generated image of Pope Francis in a white puffer, here are the tell-tale signs.* Business Insider. <https://www.businessinsider.com/viral-image-pope-francis-generated-by-ai-fooled-social-media-2023-3>
- Božić, V. (2023). *AI and Predictive Analytics*. <https://doi.org/10.13140/RG.2.2.23798.47682>
- Browne, M. S., Ryan. (2024, January 16). *OpenAI’s Sam Altman says human-level AI is coming but will change world much less than we think.* CNBC. <https://www.cnn.com/2024/01/16/openais-sam-altman-ai-coming-but-is-less-impactful-than-we-think.html>
- Buch, I., & Thakkar, M. (2021). *AI in Advertising*. <https://doi.org/10.13140/RG.2.2.19912.24323>
- Buchanan, B. G. (2019). *Artificial intelligence in finance*. Zenodo. <https://doi.org/10.5281/zenodo.2626454>
- Bughin, J., Hazan, E., Ramaswamy, S., Chui, M., Allas, T., Dahlstrom, P., Henke, N., & Trench, M. (2017). *Artificial intelligence: The next digital frontier?* <https://apo.org.au/node/210501>
- Chatterjee, S., Ghosh, S. K., Chaudhuri, R., & Nguyen, B. (2019). Are CRM systems ready for AI integration? A conceptual framework of organizational readiness for effective AI-CRM integration. *The Bottom Line*, 32(2), 144–157. <https://doi.org/10.1108/BL-02-2019-0069>
- Coursera. (2024, March 4). *What Is Generative AI? Definition, Applications, and Impact.* Coursera. <https://www.coursera.org/articles/what-is-generative-ai>

- Creswell, J. W., & Clark, V. L. P. (2017). *Designing and Conducting Mixed Methods Research*. SAGE Publications.
- Demystifying AI: Narrow AI, General AI, and Super AI Explained*. (2023, October 20). <https://www.toolify.ai/ai-news/demystifying-ai-narrow-ai-general-ai-and-super-ai-explained-12997>
- Devang, V., Chintan, S., Gunjan, T., & Rai, K. (2019). Applications of Artificial Intelligence in Marketing. *Annals of Dunarea de Jos University of Galati. Fascicle I. Economics and Applied Informatics*, 25, 28–36. <https://doi.org/10.35219/eai158404094>
- DigitalDefynd, T. (2024, May 24). What is Narrow AI [Pros & Cons] [Deep Analysis] [2024]. *DigitalDefynd*. <https://digitaldefynd.com/IQ/narrow-ai-deep-analysis/>
- Dillet, R. (2022, October 18). *Omneky uses AI to generate social media ads*. TechCrunch. <https://techcrunch.com/2022/10/18/omneky-uses-ai-to-generate-social-media-ads/>
- Dreyfus, H. L., Dreyfus, S. E., & Athanasiou, T. (with Internet Archive). (1986). *Mind over machine: The power of human intuition and expertise in the era of the computer*. New York: Free Press. <http://archive.org/details/mindovermachinep00drey>
- Eling, M., Nuessle, D., & Staubli, J. (2022). The impact of artificial intelligence along the insurance value chain and on the insurability of risks. *The Geneva Papers on Risk and Insurance - Issues and Practice*, 47(2), 205–241. <https://doi.org/10.1057/s41288-020-00201-7>
- European Commission. Joint Research Centre. (2020). *AI watch: Defining Artificial Intelligence: towards an operational definition and taxonomy of artificial intelligence*. Publications Office. <https://data.europa.eu/doi/10.2760/382730>
- Feuerriegel, S., Hartmann, J., Janiesch, C., & Zschech, P. (2024). Generative AI. *Business & Information Systems Engineering*, 66(1), 111–126. <https://doi.org/10.1007/s12599-023-00834-7>
- Filler, A. (2009). The History, Development and Impact of Computed Imaging in Neurological Diagnosis and Neurosurgery: CT, MRI, and DTI. *Nature Precedings*, 1–1. <https://doi.org/10.1038/npre.2009.3267.1>
- Fisher, A. C., Chandna, A., & Cunningham, I. P. (2007). The differential diagnosis of vertical strabismus from prism cover test data using an artificially intelligent expert system. *Medical & Biological Engineering & Computing*, 45(7), 689–693. <https://doi.org/10.1007/s11517-007-0212-z>
- Fjelland, R. (2020). Why general artificial intelligence will not be realized. *Humanities and Social Sciences Communications*, 7(1), 1–9. <https://doi.org/10.1057/s41599-020-0494-4>
- Giray, L. (2023). Prompt Engineering with ChatGPT: A Guide for Academic Writers. *Annals of Biomedical Engineering*, 51(12), 2629–2633. <https://doi.org/10.1007/s10439-023-03272-4>

- Gomez-Uribe, C. A., & Hunt, N. (2016). The Netflix Recommender System: Algorithms, Business Value, and Innovation. *ACM Transactions on Management Information Systems*, 6(4), 1–19. <https://doi.org/10.1145/2843948>
- Grace, K., Salvatier, J., Dafoe, A., Zhang, B., & Evans, O. (2018). Viewpoint: When Will AI Exceed Human Performance? Evidence from AI Experts. *Journal of Artificial Intelligence Research*, 62, 729–754. <https://doi.org/10.1613/jair.1.11222>
- Guerola-Navarro, V., Gil-Gomez, H., Oltra-Badenes, R., & Soto-Acosta, P. (2024). Customer relationship management and its impact on entrepreneurial marketing: A literature review. *International Entrepreneurship and Management Journal*, 20(2), 507–547. <https://doi.org/10.1007/s11365-022-00800-x>
- Haleem, A., Javaid, M., Asim Qadri, M., Pratap Singh, R., & Suman, R. (2022). Artificial intelligence (AI) applications for marketing: A literature-based study. *International Journal of Intelligent Networks*, 3, 119–132. <https://doi.org/10.1016/j.ijin.2022.08.005>
- Harwood, T. G., & Garry, T. (2003). An Overview of Content Analysis. *The Marketing Review*, 3(4), 479–498. <https://doi.org/10.1362/146934703771910080>
- IBM. (2021, September 22). *What Is CRM?* | IBM. <https://www.ibm.com/topics/crm>
- IBM. (2023, November 2). *What Are Large Language Models (LLMs)?* | IBM. <https://www.ibm.com/topics/large-language-models>
- IBM Data and AI team. (2024, May 13). *Types of Artificial Intelligence* | IBM. <https://www.ibm.com/think/topics/artificial-intelligence-types>
- Jarek, K., & Mazurek, G. (2019). Marketing and Artificial Intelligence. *Central European Business Review*, 8(2), 46–55. <https://doi.org/10.18267/j.cebr.213>
- Joshi, M. A. (2024). *Artificial Intelligence in E-commerce: A Comprehensive Analysis* (SSRN Scholarly Paper 4770338). <https://doi.org/10.2139/ssrn.4770338>
- Kshetri, N. (2023). Cybercrime and Privacy Threats of Large Language Models. *IT Professional*, 25(3), 9–13. <https://doi.org/10.1109/MITP.2023.3275489>
- Kshetri, N., Dwivedi, Y. K., Davenport, T. H., & Panteli, N. (2023). Generative artificial intelligence in marketing: Applications, opportunities, challenges, and research agenda. *International Journal of Information Management*, 102716. <https://doi.org/10.1016/j.ijinfomgt.2023.102716>

- Kumar, D., & Suthar, N. (2024). Ethical and legal challenges of AI in marketing: An exploration of solutions. *Journal of Information, Communication and Ethics in Society*, 22(1), 124–144. <https://doi.org/10.1108/JICES-05-2023-0068>
- Labaree, R. V. (n.d.). *Research Guides: Organizing Your Social Sciences Research Paper: 5. The Literature Review* [Research Guide]. Retrieved May 11, 2024, from <https://libguides.usc.edu/writingguide/literaturereview>
- Laskowski, N. (n.d.). *What is Artificial Intelligence (AI)? Everything You Need to Know*. Enterprise AI. Retrieved June 8, 2024, from <https://www.techtarget.com/searchenterpriseai/definition/AI-Artificial-Intelligence>
- Lee, Y.-H., & Chiu, C.-Y. (2023). The Impact of AI Text-to-Image Generator on Product Styling Design. In H. Mori & Y. Asahi (Eds.), *Human Interface and the Management of Information* (pp. 502–515). Springer Nature Switzerland. [https://doi.org/10.1007/978-3-031-35132-7\\_38](https://doi.org/10.1007/978-3-031-35132-7_38)
- Legg, S., & Hutter, M. (2007). *A Collection of Definitions of Intelligence* (arXiv:0706.3639). arXiv. <http://arxiv.org/abs/0706.3639>
- Mahabub, B. (2023). Impact of artificial intelligence on marketing. *East Asian Journal of Multidisciplinary Research*, 2(3), Article 3. <https://doi.org/10.55927/eajmr.v2i3.3112>
- Maker, M. (2010, May 26). *engaging experience: AI@50*. <https://web.archive.org/web/20100526081215/http://www.engagingexperience.com/ai50/>
- Manic, M. (2023). An Impact Analysis of Conversational AI on Marketing Processes. *Bulletin of the Transilvania University of Brasov. Series V: Economic Sciences*, 23–28. <https://doi.org/10.31926/but.es.2023.16.65.1.3>
- Manning, C. (2022, September). *Artificial Intelligence Definitions*. Stanford University. <https://hai.stanford.edu/sites/default/files/2020-09/AI-Definitions-HAI.pdf>
- McCarthy, J. (2007). *What is artificial intelligence*. <http://www-formal.stanford.edu/jmc/>
- McCarthy, J., Minsky, M. L., Rochester, N., & Shannon, C. E. (1955). A Proposal for the Dartmouth Summer Research Project on Artificial Intelligence, August 31, 1955. *AI Magazine*, 27(4), Article 4. <https://doi.org/10.1609/aimag.v27i4.1904>
- McKinsey & Company. (2024a, March 22). *What is prompt engineering?* <https://www.mckinsey.com/featured-insights/mckinsey-explainers/whats-the-future-of-ai>
- McKinsey & Company. (2024b, April 30). *What is deep learning?* <https://www.mckinsey.com/featured-insights/mckinsey-explainers/whats-the-future-of-ai>

- Mittelstadt, B. D., Allo, P., Taddeo, M., Wachter, S., & Floridi, L. (2016). The ethics of algorithms: Mapping the debate. *Big Data & Society*, 3(2), 205395171667967. <https://doi.org/10.1177/2053951716679679>
- Mubarak, M. (2023, April 23). *Narrow AI vs General AI and Super AI: How do they differ? - How to Learn Machine Learning*. <https://howtolearnmachinelearning.com/articles/narrow-ai-vs-general-ai/>, <https://howtolearnmachinelearning.com/articles/narrow-ai-vs-general-ai/>
- N Murali<sup>1</sup> & N Sivakumaran<sup>2</sup>. (2018). *Artificial Intelligence in Healthcare-A Review*. Unpublished. <https://doi.org/10.13140/RG.2.2.27265.92003>
- Nancholas, B. (2023, September 1). *Narrow artificial intelligence: Advantages, disadvantages, and the future of AI*. University of Wolverhampton. <https://online.wlv.ac.uk/narrow-artificial-intelligence-advantages-disadvantages-and-the-future-of-ai/>
- Narrow AI*. (2019, May 17). DeepAI. <https://deepai.org/machine-learning-glossary-and-terms/narrow-ai>
- Nesterenko, V., & Olefirenko, O. (2023). The impact of AI development on the development of marketing communications. *Marketing and Management of Innovations*, 14(1), 169–181. <https://doi.org/10.21272/mmi.2023.1-15>
- Nguyen, Q. N., & Sidorova, A. (2018). *Understanding user interactions with a chatbot: A self-determination theory approach*.
- Power, B. (2017, May 30). How Harley-Davidson Used Artificial Intelligence to Increase New York Sales Leads by 2,930%. *Harvard Business Review*. <https://hbr.org/2017/05/how-harley-davidson-used-predictive-analytics-to-increase-new-york-sales-leads-by-2930>
- Rao, A., & Verweij, G. (2024). *Sizing the prize What's the real value of AI for your business and how can you capitalise?* PWC. <https://www.pwc.com/gx/en/issues/analytics/assets/pwc-ai-analysis-sizing-the-prize-report.pdf>
- Ratajczak, D., Kropp, M., Palumbo, S., de Bellefonds, N., Apotheker, J., Willersdorf, S., & Paizanis, G. (2023, June 5). *How CMOs Are Succeeding with Generative AI*. BCG Global. <https://www.bcg.com/publications/2023/generative-ai-in-marketing>
- Roli, A., Jaeger, J., & Kauffman, S. A. (2022). How Organisms Come to Know the World: Fundamental Limits on Artificial General Intelligence. *Frontiers in Ecology and Evolution*, 9. <https://doi.org/10.3389/fevo.2021.806283>
- Salesforce. (n.d.). *What is Marketing Automation?* Salesforce. Retrieved July 25, 2024, from <https://www.salesforce.com/marketing/automation/guide/>

- Salesforce. (2023, June 5). *New Research: 60% of Marketers Say Generative AI will Transform Their Role, But Worry About Accuracy*. Salesforce. <https://www.salesforce.com/news/stories/generative-ai-for-marketing-research/>
- Salman, M., Ahmed, A., Khan, A., Raza, B., & Latif, K. (2017). Artificial Intelligence in Bio-Medical Domain An Overview of AI Based Innovations in Medical. *International Journal of Advanced Computer Science and Applications*, 8, 319–327.
- Shabana, A. (2021, December 16). Recommendation Engines: How Amazon and Netflix Are Winning the Personalization Battle - Spiceworks. *Spiceworks Inc.* <https://www.spiceworks.com/marketing/customer-experience/articles/recommendation-engines-how-amazon-and-netflix-are-winning-the-personalization-battle/>
- Shen, Y., Heacock, L., Elias, J., Hentel, K. D., Reig, B., Shih, G., & Moy, L. (2023). ChatGPT and Other Large Language Models Are Double-edged Swords. *Radiology*, 307(2), e230163. <https://doi.org/10.1148/radiol.230163>
- Snyder, H. (2019). Literature review as a research methodology: An overview and guidelines. *Journal of Business Research*, 104, 333–339. <https://doi.org/10.1016/j.jbusres.2019.07.039>
- Statbel. (2023, July 12). *Près d'une grande entreprise sur deux utilise l'intelligence artificielle*. <https://statbel.fgov.be/fr/nouvelles/pres-dune-grande-entreprise-sur-deux-utilise-lintelligence-artificielle>
- Stryker, C., & Scapicchio, M. (2024, March 22). *What is Generative AI? | IBM*. <https://www.ibm.com/topics/generative-ai>
- Sundaram, S., & Zeid, A. (2023). Artificial Intelligence-Based Smart Quality Inspection for Manufacturing. *Micromachines*, 14(3), Article 3. <https://doi.org/10.3390/mi14030570>
- Sybing, R. (n.d.). *What is Open Coding? | Explanation, Uses & Method*. ATLAS.Ti. Retrieved August 6, 2024, from <https://atlasti.com/research-hub/open-coding>
- Syeda-Mahmood, T., Walach, E., Beymer, D., Gilboa-Solomon, F., Moradi, M., Kisilev, P., Kakrania, D., Compas, C., Wang, H., Negahdar, R., Cao, Y., Baldwin, T., Guo, Y., Gur, Y., Rajan, D., Zlotnick, A., Rabinovici-Cohen, S., Ben-Ari, R., Guy, A., ... Hashoul, S. (2016). Medical sieve: A cognitive assistant for radiologists and cardiologists. *Medical Imaging 2016: Computer-Aided Diagnosis*, 9785, 58–63. <https://doi.org/10.1117/12.2217382>
- Taiminen, H. M., & Karjaluo, H. (2015). The usage of digital marketing channels in SMEs. *Journal of Small Business and Enterprise Development*, 22(4), 633–651. <https://doi.org/10.1108/JSBED-05-2013-0073>

- Tang, D., Ni, M., Zheng, C., Ding, X., Zhang, N., Yang, T., Zhan, Q., Fu, Y., Liu, W., Zhuang, D., Lv, Y., Xu, G., Wang, L., & Zou, X. (2022). A deep learning-based model improves diagnosis of early gastric cancer under narrow band imaging endoscopy. *Surgical Endoscopy*, 36(10), 7800–7810. <https://doi.org/10.1007/s00464-022-09319-2>
- van Dis, E. A. M., Bollen, J., Zuidema, W., van Rooij, R., & Bockting, C. L. (2023). ChatGPT: Five priorities for research. *Nature*, 614(7947), 224–226. <https://doi.org/10.1038/d41586-023-00288-7>
- Vidrih, M., & Mayahi, S. (2023). *Generative AI-Driven Storytelling: A New Era for Marketing* (arXiv:2309.09048). arXiv. <https://doi.org/10.48550/arXiv.2309.09048>
- Von Siemens, B. (2024, January 15). *Building trust in narrow AI to boost its use in healthcare*. World Economic Forum. <https://www.weforum.org/agenda/2024/01/why-building-trust-is-key-to-unleashing-ai-s-full-potential-in-healthcare/>
- Wahid, R., Mero, J., & Ritala, P. (2023). Editorial: Written by ChatGPT, illustrated by Midjourney: generative AI for content marketing. *Asia Pacific Journal of Marketing and Logistics*, 35(8), 1813–1822. <https://doi.org/10.1108/APJML-10-2023-994>
- Wang, J. F. (2023). The Impact of Artificial Intelligence (AI) on Customer Relationship Management: A Qualitative Study. *International Journal of Management and Accounting*, 74–90. <https://doi.org/10.34104/ijma.023.0074090>
- Wang, P. (2019). On Defining Artificial Intelligence. *Journal of Artificial General Intelligence*, 10(2), 1–37. <https://doi.org/10.2478/jagi-2019-0002>
- What is the future of AI (Artificial Intelligence)?* | McKinsey. (2024, April 30). <https://www.mckinsey.com/featured-insights/mckinsey-explainers/whats-the-future-of-ai>
- Wisetsri, W., T S, R., Julie Aarthy C, C., Thakur, V., Pandey, D., & Gulati, K. (2021). Systematic Analysis and Future Research Directions in Artificial Intelligence for Marketing. *Turkish Journal of Computer and Mathematics Education (TURCOMAT)*, 12, 43–55. <https://doi.org/10.17762/turcomat.v12i11.5825>
- Xiao, Y., & Wang, W. Y. (2021). *On Hallucination and Predictive Uncertainty in Conditional Language Generation* (arXiv:2103.15025). arXiv. <http://arxiv.org/abs/2103.15025>
- Zhang, B., Dreksler, N., Anderljung, M., Kahn, L., Giattino, C., Dafoe, A., & Horowitz, M. C. (2022). *Forecasting AI Progress: Evidence from a Survey of Machine Learning Researchers* (Version 1). arXiv. <https://doi.org/10.48550/ARXIV.2206.04132>

- Zhang, Y., & Liu, C. (2024). Unlocking the Potential of Artificial Intelligence in Fashion Design and E-Commerce Applications: The Case of Midjourney. *Journal of Theoretical and Applied Electronic Commerce Research*, 19(1), Article 1. <https://doi.org/10.3390/jtaer19010035>
- Zhou, M., Abhishek, V., Derdenger, T., Kim, J., & Srinivasan, K. (2024). *Bias in Generative AI* (arXiv:2403.02726). arXiv. <https://doi.org/10.48550/arXiv.2403.02726>

**UNIVERSITÉ CATHOLIQUE DE LOUVAIN**  
Louvain School of Management

Place des Doyens, 1 bte L2.01.01, 1348 Louvain-la-Neuve  
Boulevard Emile Devreux 6, 6000 Charleroi, Belgique  
Chaussée de Binche 151, 7000 Mons, Belgique

[www.uclouvain.be/lsm](http://www.uclouvain.be/lsm)