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**GENERATIVE ARTIFICIAL INTELLIGENCE TO CREATE
MARKETING CONTENT**

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GENERATIVE ARTIFICIAL INTELLIGENCE TO CREATE MARKETING CONTENT

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Abstract

The subject of this study is marketing content, and **the object** are the differences in the perception of human-generated or created advertising content. In this regard, **the main research question** is whether human-generated marketing content without additional modifications and humanization is able to achieve a similar or better effect compared to human-generated marketing content.

The study aims to analyze previous studies and collect empirical data necessary to explore the initial possibilities for automating creative processes through generative artificial intelligence tools.

For the realization of the set goal, the following **research tasks** have been formulated:

1. To carry out a literature review of previous studies related to the use of artificial intelligence in marketing and communication campaigns, as well as of ethical principles in the development and use of artificial intelligence in human activity.

2. To design and conduct an empirical study to provide data to explore the possibility of automating the creative processes in the creation of marketing content at the time of the study.

3. To compare and analyze the impact that the created and generated marketing content has on the same audience.

4. To discuss the ethical context related to the use of generative AI tools in the generation of marketing content.

Based on the research work carried out and the application of several approaches, methods, and analyses, the following **scientific and applied results** have been achieved:

1. Based on a literature review, the ethical context in the use of artificial intelligence is presented.

2. Ethical and moral problems in the use of artificial intelligence tools in communication campaigns are discussed with a view to outlining the opportunities and risks of using them to generate marketing content.

3. The possibilities for automating the creative processes in the creation of marketing content at the time of the study are studied.

4. The risks associated with automating creative processes through generative AI tools and using content generated in this way without humanizing it are outlined.

Keywords: generative artificial intelligence, marketing content, artificial intelligence, ethical problems in the use of artificial intelligence, automation of creative processes, social media.

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Introduction

Elena Dimitrova, or Eco Elena, is a Bulgarian nano influencer who, as of February 2024, has 259 followers attracted in less than a month. At the same time, the content she created reached 84,519 people, received 8,900 likes (this is a great result for such a period), 9 invitations to romantic dates from her followers, and not a single comment, in which some doubt is expressed that the profile is generated by artificial intelligence. Eco Elena's "personality" is a form of social experiment in which freelance journalist Georgi Karamanev (2024) attempts to publish for a month content generated entirely with the help of Chat GPT¹ from a fictitious profile to find out if anyone would suspect that there is no real person behind the profile. Although this cannot be considered a pure Turing test (see Chapter One), as the author of this experiment says, it gives us a specific reason and direction for reflection on what applications the use of artificial intelligence (AI) tools can lead to in marketing practice.

A year earlier, in April 2023, historian and philosopher Yuval Harari, in his column in the magazine "The Economist", argued that artificial intelligence, through its ability to generate language (words, sounds, or images), hacked the operating system of human civilization (Harari, 2023). The arguments put forward by the philosopher are related precisely to the fact that civilization is formed based on stories created and spread by people. And that these stories form the basis of cultural, social, and economic life. In cases where stories are not created by human minds, Harari sees the danger of "the end of a human-dominated civilization." Through this thesis, the philosopher argues for the need for urgent regulation of the use of AI. The question he raises is how people can be sure whether new AI-based tools are being used for good or for evil. The first step, according to him, is to assess the true capabilities that these tools have. In this sense, the study of audience reactions to AI-generated marketing content can be taken as an attempt to evaluate some of these opportunities and, respectively, the use of such tools in marketing communications. Which, in turn, makes the topic of this study extremely relevant.

It can be assumed that the AI content generation tools currently used in marketing communications are at an early stage of their development, and on the other hand, that this development is extremely dynamic. Such research can only be regarded as relevant at the time of its conduct and cannot claim to be able to predict with certainty the extent to which the use of AI in the creative industries poses an opportunity or a threat. In any case, however, the results of such a study can be used as a guide to the current opportunities and risks of using AI in the creation of marketing content. This, in turn, would allow guidelines to be formulated to improve the work of specialists in the field in terms of (1) improving the quality and efficiency of content creation, as well as (2) overcoming some of the possible risks associated with such use. At the same time, such research can be seen as part of (3) the debate on ethical and moral issues related to the use of AI and the need for regulations and adaptation of existing ethical frameworks.

If we go back to the attempts of journalist Georgi Karamanev (2024b), a week after announcing the results achieved by the virtual personality created with AI tools, he presents the results of another of his attempts – to check whether people can distinguish between "created" and "generated" content. The new social experiment involved 1816 respondents who had to "guess" whether the content they saw was created by a specific person or generated by AI. A debatable point in such an attempt is that if the respondent is familiar in advance with

¹ ChatGPT is an artificial intelligence chatbot developed by the company OpenAI and released for free use in November, 2022. It communicates with users in natural languages and was developed based on large language models that are trained using neural networks and deep learning based on access to large data sets on the Internet.

the work of real people, such as the artists Hieronymus Bosch and Maya Bocheva - Wiki, with the translations of "Hamlet" by Valeri Petrov and Geo Milev, or with the work of Pencho Slaveykov, the correct answers are a matter of knowledge, not recognition. However, the journalist's experience, without claiming to be a scientific experiment, is indicative of the interest that people and those working in the field of content marketing have in the wide range of possibilities of generative AI tools.

Both of the experiences we describe here are part of a trend that started less than a year after AI tools became freely available to people from all over the world. In early January 2024, Fortune magazine published an article about the first AI-powered influencer in Formula E, who stayed "at work" for two days due to the dissatisfaction of sports fans (Prakash, 2024). However, such attempts are skyrocketing because they build on earlier developments, such as the one about the first computer-generated Instagram influencer, Lil Michela, named by Time magazine as one of the most influential people on the Internet for 2018 (Time, no date).

This wave is constantly gaining strength, and the question of "what and how is changing?" for those who create marketing content is taking on new and different dimensions. So far, in this direction, the publicly asked questions, which have not yet been definitively answered, cover the two poles of uncertainty. On the one hand, there are fears that AI tools can lead to job losses, and on the other hand, that it is through them that the work of specialists in the industry would become more efficient and easier, and in this sense, would improve. These two alternatives are not mutually exclusive options located somewhere in the future. In both possible scenarios, the basis is the saving of resources by organizations that work in the field of creating marketing content, financial, and time, which can lead to the redirection of human, resource, and financial potential in other directions, from which future benefits can be accumulated.

The answer to the question "Which of these two scenarios is more likely?", since it is the subject of futurism and global economic and social forecasts, is not the subject of this essay. Here, the goals we set ourselves are different, and they are directly related to *the exploration of potential opportunities, the tools for generating marketing content through AI, and the risks and their use* at the time of design and conduct of the empirical study. The **main idea** of the research described here is *to present the results of two specific studies on the capabilities of AI tools to automate creative processes in marketing content creation at two specific times, located one year apart*. These opportunities are explored based on the perception of AI-generated marketing content within the simulated campaign, which is compared with the perception of content created by professionals starting their professional careers within the same simulated campaign. Since there is a time lag of one year between the two attempts to study the perceptions of the audience, conclusions can be formulated based on this, with all the limitations on the scope and representativeness of the study carried out, and conclusions about the trends in the development of the problem under study.

Here, it is necessary to make an important clarification from the point of view of the goals and objectives of this study. Its scope does not include the use of AI tools in the process of generating marketing content, which can be defined as an area with huge potential and scope beyond the capabilities of one particular study, but only one of its possible aspects. What's more, the use of generative AI is already a fact for many functional areas in the organization, and marketing is perhaps the most benefited by innovation in content creation through AI tools. This, in turn, gives rise to considerable scientific and practical interest in the various areas of application of AI tools in the business of organizations. In this direction, it should be specified that both in the field of science and at the institutional level, debates on the possibilities of automating the processes of content creation through AI and the related ethical and moral issues are still ongoing and deserve the attention of both researchers and practitioners.

In this sense, it is worth clarifying that *the focus* of the research presented here falls on the differences that may or may not be detected both in terms of quality and in terms of some of the impacts of human-generated marketing content and similar content generated by AI tools, with the minimization of human intervention. Here, in turn, we need to pay attention to the differences between the use of AI tools in the creative process of generating marketing content and between the content generated by AI tools, since we are talking about two different processes. In the first case, the use of AI tools supports specialists in their creative processes of content creation (which is increasingly becoming a common practice not only in the field of marketing), while in the second case, the content creation process is caANied out by or "entrusted" to AI tools and, in this sense, in the framework of such an experiment, The content created can be seen as a product of generative AI rather than a direct result of human activity. This is because the tested content does not go through "humanization" processes, and the intervention of specialists in its generation is reduced only to the final layout of the advertising incentives used in the study, a functionality that is not available at the time of designing the incentives using generative AI tools.

Let's illustrate this idea by automating typical marketing processes such as retargeting or A/B testing within digital marketing campaigns. In the first case, ad exposures are driven by an algorithm depending on the digital behavior of consumers at different touchpoints of the digital user journey. And in the second, the choice of variations of advertising content is determined depending on the reactions of users to the variations used within the campaign, also based on a predefined set of criteria and variables. In both cases, the logic of the described processes is set in advance according to the goals and objectives of the campaign, but the activities are practically automated and are "freed" from direct human intervention. This, in turn, gives us grounds to assert the existence of a set of autonomous micro-solutions within the campaign, which are not directly caused by humans. From here, by analogy, the question of automating the creative processes of creating marketing content can be deduced. Or, to sum up, the question that underlies the results of the study presented here is "*What could be the opportunities and risks if, within the campaigns, marketing content is not created by humans, but is automatically generated by AI tools?*"

If we go back to the creation of marketing content using AI tools, we can say that the usual practice is to use them at the moment mainly for generating both ideas and preliminary versions of marketing content, which are subjected to more or less additional processing and settings before the advertising exposure. But in the end, it is the people who use them who decide exactly which of the ideas and which of the options should be part of the campaign and which should not be used. At the same time, however, if the ethical issues and related risks of using AI tools for content generation are ignored, it is quite possible (and in all likelihood technically feasible) a scenario in which, under pre-set criteria, the processes of generating and using marketing content are automated and caANied out without the involvement of specialists in the creation of such content.

However, such a scenario would be possible if at least three specific conditions are met: the first is if AI tools can go through all stages of the creative process of creating marketing content on their own, and the second is if AI tools can autonomously generate such content that is not inferior in quality or impact on campaign audiences. Compared to the target content created by specialists. The third is the recognition that AI-generated content does not cause negative reactions in the campaign audiences.

If the first condition falls outside the sphere of our scientific interest, since its implementation is a matter of technical solutions related to the creation and programming of algorithms for controlling AI tools, then compliance with the other two conditions can be verified and tested empirically within the framework of the study designed here. Of course, the opportunities and risks of such automation of creative processes cannot be ignored,

because they raise ethical and moral questions that are of utmost importance. In this sense, the **formulation of the scientific problem** discussed here includes at least two main sections related *to the opportunities and risks that the automation of the creation of marketing content through generative AI tools can lead to*. The first is related to the study of *the possibilities to identify differences in the assessments of the quality of generated and created marketing content, as well as their impact on the target audience of the campaign*. The second is *with the ethical and moral aspects of future automation of creative processes for the creation of marketing content*. Since these two questions are still debatable and concern general processes related to the use of marketing content in general, the study and discussion of the results of such a study can contribute to the development of marketing knowledge, especially when it comes to trends in automating marketing actions. Observed in recent years. It is also necessary to clarify here that the scientific problem is not aimed at creating generative AI jobs and modifying their results, but rather focuses on trying to assess the effects of applying AI tools in comparative terms between human-generated marketing content and similar content. Generated by AI tools while minimizing human intervention.

Of course, such a study of consumers' receptions of marketing incentives – such as human-generated content and AI-generated content – is part of the larger topic of the emergence and development of AI, which has nearly seven centuries of history. In this sense, to determine the context of the conducted research, as well as to outline the potential benefits of conducting it, Several more important topics need to be addressed. If we go back to the question "How is AI-generated content perceived?" or to the even more vague "Can AI create better marketing content than specialists?", we can't help but go through the expectations focused on this content and its characteristics. This, in turn, stems from the perceptions, attitudes, and assessments that people have toward AI in general, which are formed based on topics, ideas, and concepts developed in the fields of philosophy, ethics, morality, mathematics, and technology. In this sense, before moving on to **the main question** of this study – "Are AI tools able to generate better quality marketing content compared to human-created content without additional intervention?", an overview of the development of the idea of AI in these areas of human knowledge should be provided, paying particular attention to the ethical and moral questions that this development raises. From this point of view, it is necessary, based on an overview of basic theoretical ideas and concepts, to define basic concepts such as creativity, creative thinking, and ethical framework through the prism of the processes of creating marketing content, to be able to design a conceptual model and design of the research caANied out based on them and to check the thesis and the resulting hypotheses.

The main thesis of this text is that *the development of AI tools for content creation has the potential to lead to the future automation of creative processes in the creation of marketing content*. In this regard, the **main objective** of the study *can be formulated – to check whether and to what extent there are differences in the perception of the quality and impacts of AI-generated marketing content*. At the same time, the moral and ethical questions that the development of AI tools raises in the field of marketing content are also taken into account, and in this sense, as part of the objectives of the study caANied out, the research, generalization and conceptualization of these issues can be indicated. *Marketing content within a specific simulated communication campaign, with the subject being the differences in the perception of AI-generated and human-created marketing content*.

With the object and subject of the study described in this way and for the fulfillment of its main goal, the following more important tasks can be defined:

- To review the literature sources, outlining the key themes related to the emergence, development, and potential applications of the idea of AI, and to derive their links to the creation and/or generation of marketing content.

- To propose a process for designing marketing content in which to explore the differences in the perceptions of the target audience of a campaign between created and generated content.
- To conduct an empirical study to obtain primary data to outline the differences in the audience's perceptions of generated and created marketing content.
- Based on the study, formulate guidelines for working with AI tools in terms of automating creative processes in the creation of marketing content.
- Outline a potential set of possible changes that need to be taken into account in the future work of marketing content creators and training professionals with a view to the development of AI tools.
- To conclude on the opportunities and risks that come with the development and use of AI content creation tools in the field of marketing communications.

The performance of these tasks is associated with several *main limitations of the study*.

The first limitation is related to the time frame of the study carried out. Both the design of the incentives used and the collection of empirical data are carried out in two waves – from November 2022 to April 2023 and from November 2023 to April 2024. to generate ideas and verbal content for the designed campaign, and Midgernay to create images for the campaign. In this sense, the use of other AI tools may result in results different from the reported ones, as well as if the survey is conducted in other periods or with other respondents in the sample.

The second limitation is related to the time lag of one year, which can only show the changes that have occurred in the use of these tools and in the samples and specific content authors used, and it is quite possible that in other studies, periods with other samples and authors, results other than the reported results will be obtained.

The third limitation is related to the use of students from the Bachelor's program "Digital Media and PR" at the University of Economics – Varna as authors of marketing content. It is quite possible that if variants of content created by professionals with long experience are used as incentives in the designed study, different results from the reported ones will be obtained. These three limitations, however, can be perceived as "natural" because of two main arguments – that (1) Open access content creation tools still have a "short" history, and that (2) students at the end of their studies are, just like AI tools, at the beginning of their professional career, and in this sense, the comparison of the two types of content can be interpreted as caANied out "on equal terms". On the other hand, the commented third limitation is related to one of the practical goals of the study – to investigate the ability of young graduate marketers and communications professionals to compete with the opportunities that generative AI tools provide to organizations in creating marketing content.

The fourth limitation concerns the object and subject of the study. It has already been commented that the ideas and concepts of AI pass through different areas of human knowledge. In this sense, the exploration of the opportunities and risks associated with the use of AI tools to create marketing content could be carried out outside the context of philosophical and ethical problems that concern basic principles, derived from the fields of mathematics, physics, psychology, and computer science. Although this requires the use of an interdisciplinary approach to the researched topic, this text does not set any tasks and goals and does not pretend to formulate basic conclusions that fall outside the scope of marketing theory and practice. Moreover, here the object and subject of the study are limited only to the application of AI tools for generating marketing content, and not at all to topics related to the development and capabilities of AI, including those of a purely technological nature. Or, if it is necessary to make further clarification, the question that concerns us here is not *how AI programs work*, but *how AI programs can be worked with in marketing communication campaigns* from the point of view of a single goal, *in automating the creative processes for*

creating marketing content. This clarification is particularly important because it points to the area of interest of the research conducted, and it is directly related to the expected changes in the work of the specialist or organization that plans and creates marketing content within the framework of specific communication and advertising campaigns.

The results of the study and the conclusions drawn from it can serve as a starting point for future research into the use of AI tools and in particular the opportunities and potential risks associated with the future automation of creative processes for creating marketing content, as well as for the reformulation of context and environments, in which the specialists – theorists, and practitioners – in this fieldwork. Due to the extremely dynamic development in the field of AI, the results of the study conducted are rather historical, as the conclusions reached are valid at the time of empirical data collection and analysis.

Chapter One
Main stages, ideas, and concepts in the development of artificial intelligence

1.1 Importance of debates on the question of whether machines can think or not

The traces of the beginning of the term "artificial intelligence" are lost back in the years, and it is difficult to trace them without falling into speculation or historical exaggeration. In one of his Forbes publications, for example, Gill Press points out that the idea of artificial intelligence (AI) first appeared in 1308 in the manuscript of the Catalan poet and theologian Ramón Llull "Ars Generalis Ultima" (The Supreme Common Art) as a supplement to his proposed method of creating new concepts based on a combination of existing old ones (Press, 2016). Of course, such a thesis can be argued in the context of the notion that the ideas at that historical moment were inspired by a god (divine intellect), and in this sense, the combination of already existing ideas does not have a completely natural character and is the task of reason of a lower order. The author already cited sees the next appearance in the history of the concept of AI in the manuscript of the mathematician and philosopher Gottfried Leibniz "Dissertatio de Arte Combinatoria" (Dissertation on the Art of Combinatoria), which proposes an "alphabet" of human thought, based on the assumption that all ideas in human history are the result of the combination of a relatively small number of simple concepts (Press, 2016).

Naturally, such studies published in publications aimed at a non-specialized audience, such as Forbes, cannot be accepted without reservations, but on the other hand, they shed light on the public interest in the emergence of the idea of AI and the search for its source. At the same time, tracing the "history" of the emergence and evolution of the concept of AI, one feature can be highlighted. This is a multidisciplinary approach that incorporates tools and ideas from different fields of human knowledge, such as theology, philosophy, mathematics, physics, mechanics, and art (suffice it to point out only based on the publication cited here that the idea of AI passes through the creation of names such as Jonathan Swift, Nikola Tesla, Thomas Buys, Karel Čapek, Claude Shannon, Alan Turing, etc.). The idea that something completely new can be created based on what already exists is precisely the step that allows the imagination to formulate the concept that, in addition to the human (in the medieval tradition as a function of divine providence), another, non-human, and in this sense "artificial" intelligence that is capable of thinking can exist and be used. From now on, it is completely normal for such an "enticing" idea to occupy great minds in various fields of knowledge related to the creation and development of ideas. Especially since we add one of the leading trends in the consideration of AI, related to attempts to define thinking (and as an inherent characteristic of AI), which gives grounds to trace the history of AI to 450 BC; to one of Plato's early dialogues "Euthyphro", in which the idea that behavior can be determined by a series of rules first appears (Dreyfus, 1972), as, as we will see later in this literature review, thinking itself is defined as a process.

After the weak associative connections discussed so far, based on which it is difficult to accept how the idea of AI originally appeared, but the context of its emergence is outlined, let's look at a document officially adopted for the beginning of its use. Here, we are referring to an official invitation from Dartmouth College, published on August 31, 1955. (McCarthy *et al.*, 1955). The invitation is for a two-month summer seminar on AI scheduled for next year, behind which are four iconic names – John McCarthy from Dartmouth College, Marvin Minsky from Harvard University, Nathaniel Rochester from IBM, and Claude Shannon from Bell Labs. The seminar in July and August 1956 is generally considered the beginning of scientific research related to AI, and the authorship of the term "artificial intelligence" is awarded to McCarthy (in an attempt to define the actions of machines that humans would define as intelligent).

If we take a quick look at the invitation already cited, we can see what is the scope of this increasingly popular concept of the use of AI from that moment on, and in particular, the areas that can be distinguished within it. The cited paper points out a total of seven key points related to (1) automated computing, (2) the ability to program computers to use natural language, (3) the use of neural networks, (4) theories about the size of computation required to perform a given set of actions, (5) self-improvement, (6) the construction of abstract constructs, and (7) the delineation of the differences between creative and "unimaginative competent thinking." A closer look at these major problem areas could lead to a simpler summary of the problem associated with the use of AI – is it possible, let's call them "machines", to be created, programmed, and trained to act like the human brain? Here is how the main problems that the authors of the call see in each of these areas are defined:

(1) A major obstacle for automated computing to reach the capacity of the human brain is the inability to create programs that take full advantage of the capacity of computing.

(2) The inability of existing programs to extract the context, and hence the main meanings and purposes of the words used in speech, or in other words, to master the rules for communication through language.

(3) How to organize individual neurons into a network so that this network can create its own concepts.

(4) If any algorithm, to find a specific solution, plays out all possible combinations, then the process has a low degree of efficiency – this, in turn, necessitates the application of criteria for the effectiveness of the computational procedures.

(5) Since one of the main characteristics of intelligence is its self-improvement in the process of performing specific tasks and challenges, this means that algorithms must be developed that help AI to self-learn and develop on its own.

(6) The difficulty of defining abstract models and constructs clearly and precisely necessitates the application of machine methods for creating abstractions based on sensory and other input data;

(7) Based on the hypothesis that the difference between creative and traditional thinking is due to random (unpredictable) impulses, there is also a need to include 'controlled randomness' through which AI begins to resemble the intuitiveness of human intelligence.

If we look at these seven defined problem areas in the use of AI, we can see that each of them continues to be a "hot topic" and a subject of debate 70 years later. Here we come to one of the main research questions – whether and to what extent this time was enough for these questions to find their answers, and the problems posed, to be solved. Before attempting such conclusions, however, it is necessary to take a look at the emergence of the concept of AI in the field of social sciences.

The first published publication in full-text databases on the keywords "artificial intelligence" is the monograph of the French philosopher and scientist Raymond Rouet, "Cybernetics and the Origin of Information" (Ruer, 1954), published a year earlier than the already considered invitation to the summer seminar in 1956. In his monograph, Rouet defines the two key concepts on which he created his theory. He defined cybernetics as "the science of controlling information from machines of an organic or artificial nature" (Ruer, 1954, p. 5). The philosopher defines the beginning of this new science for its time in the 40s of the last century, pointing to its interdisciplinary origin as an intersection between mathematics, physics, technology, and psychology. Based on a historical review of the evolution of "machines," Ruer also defines the necessity of the emergence of cybernetics, which he considers to be directly related to the stage in which "machines transmit information to each other and themselves" (Ruer, 1954, p. 9). Quite logically, this concept draws attention to the possibilities for information to be collected, processed, and used in the process of communication. This, in turn, means that when defining AI as a leading characteristic, its

ability to process and create information through which "machines" can communicate with themselves and, of course, with representatives of the human species can be determined.

The second concept defined by Rouet in this work is "information". According to him, the usual meaning of the word necessarily includes two basic elements – these are "consciousness" and "meaning" (meaning), and these elements are essential for the existence of information (Ruer, 1954, p. 9). From this starting position, the author defines information as "the opposite of entropy", since it is through it that unstructured data acquires meaning. A similar thesis had already been expressed six years earlier by Claude Shannon, who in his "Theory of Information" defined entropy (in physics, a measure of the disorder of thermodynamic systems) precisely as the absence of information (Shannon, 1948). Continuing this line, Rouet asks the question of how information can be measured. According to him, effective communication within a structure received and recorded by devices is the essence of information and represents, in itself, the creation of new structural orders. From this starting point, Rouet also raises the next question, which is essential for understanding the concept of AI as part of information processes. He claims that „... *in the transfer of a structure from one machine to another... The form is ultimately conveyed as a signifying unit, as a conscious being can become aware of both the result and the form.*“ (Ruer, 1958, p.11). As a consequence, according to Ruhe, the conscious being perceives the transmitted structural order as a whole, thus forming it (giving rise to its new meaning), in contrast to the "machine", which performs this transmission through a set of operations or, in other words, through a predetermined algorithm for processing the data included in the structural order.

It is here that cybernetics, according to Ruhe, comes to the so-called "paradox", generated by the two theses about the origin and essence of information, presented by the American mathematician and philosopher Norbert Wiener in his book "Cybernetics, or Control and Connection in the Animal and the Machine" (Wiener, 1948). The first thesis is that machines cannot create information because the message transmitted by the machine cannot be of greater scope (and content) than what has been received in it. Wiener's second thesis is that information machines cannot mimic the functioning of the brain or nervous systems through a mechanism (or an algorithm) because they do not contain any transcendent or other properties to be imitated by a mechanism (here Rouet quotes the above-mentioned work of Wiener (Wiener, 1948, pp. 116-133)). Of course, being primarily a philosopher, Ruhe comes to the big question of whether a machine can be like a person and participate in the communication process precisely as a person, and not as a machine. Drawing on the notion of man as a "rational being," contrasting it with the notion of man as a "rational animal" (influenced by the signals coming from rudimentary organs and emotional flashes), Rouet concludes that "*A thinking machine is a more real person than a person who experiences emotions and passions*“ (Ruer, 1958, p. 33) and in this sense does not exclude the idea that when or if a machine is created that can perform the processes of processing, creating and transmitting information characteristic of the human brain, then this machine would realize the functions of AI.

The ideas presented here are not intended to represent the current understanding of AI, but to outline the starting point, or rather, the areas from which these ideas are generated and evolved. Let's now take a look at the accessible full-text scientific publications that appeared in the sixties of the last century and are related to the idea of AI. Although this question has not yet been directly posed, can machines replace humans? One of the first starting points in the search for the role of AI, or rather "computing machines" (computers), is being discussed in this direction. It is about trying to define the advantages that computers have in terms of the operations they perform in business processes over people who perform these operations without their help. This raises the question of the need to rethink the place and functions that humans perform in these processes because of the higher computing power and the ability of

computers to handle a large volume of data and its processing, which is defined as "intelligence" (Simon and Newell, 1958).

Since this is an important point, let's take a brief look at the concept of intelligence. The word used in the quoted text is intelligence (in the phrase "intelligence of machines"), which is generally translated as "the ability to acquire knowledge and skills". However, when we talk about intelligence in the field of computers and their ability to process data and information, are we talking about this first meaning? The Merriam-Webster online dictionary gives several basic meanings to intelligence. First, it refers to "the *ability to learn or understand, or to deal with new or repetitive situations*" (Merriam-Webster, no date). The second meaning represents intelligence in a completely different aspect – as the ability "to *apply knowledge to manipulate the environment or to think abstractly, measured by objective criteria*". Only the fourth meaning refers to "the *ability to perform computer functions*".

Of course, all these meanings can be attributed to the idea of defining AI, and in particular to some of the characteristics that form it. From the point of view of the tasks of the historical review of literature sources, however, it is important to point out here that at this stage, the goal is to outline in general the topics, scope, and focus when considering the concept of artificial intelligence in different periods. In this case, the meaning of the phrase in the cited publication in the context of its use refers rather to the ability to collect and process information for a certain period, which is a basic criterion for one of the most popular methods for measuring human intelligence (Mensa Bulgaria, no date).

It is worth noting that during the period under study, researchers' interest in AI (understood as the ability to process data through a given algorithm to find a solution) was also tied to solving purely practical problems. Such are, for example, the creation of computer simulations when performing experiments (Conway, Johnson and Maxwell, 1959), the optimization of assembly lines in production to increase the efficiency of the production process (Tonge, 1960), or the potential for the use of heuristic programs in management processes (Tonge, 1961).

Despite the small number of full-text scientific publications dedicated to AI until the early sixties, it can be argued that researchers' attention to this topic is not negligible. In this regard, the book "Computers and Thought, the First Anthology of Artificial Intelligence", published in 1963, should also be mentioned (E. A. Feigenbaum and Feldman, 1963). It features scientific publications published so far on the topic by twenty-eight AI researchers, making it a significant event. The anthology was prepared based on the bibliography of another researcher, Marvin Minsky, as indicated in his article "Steps to Artificial Intelligence" (Minsky, 1961), which is considered to be the first attempt at a literature review on AI. In the cited article, also published in the anthology in question, Minsky advocates several main theses when considering AI. As a starting point, he advocates the idea that computers (until now) can only perform those operations that are assigned to them, and in a way that is predetermined. This, Minsky points out, leads to the first limitation, namely that by performing a series of possible operations until a specific solution is found, the process is characterized by a very low level of efficiency. This limitation, according to the author, can be overcome by using pattern recognition combined with learning, so that, based on the experience gained, the number of possible solutions can be reduced to a smaller volume. Which, in turn, leads to the second, according to Minsky, restriction – machines to be able to construct models in the environments in which they operate. Solving this second constraint, Minsky says, is a task of heuristic programming and involves five main areas: (1) search, (2) pattern recognition, (3) learning, (4) planning, and (5) induction.

Heuristic programming in computer science is generally defined as an idea close to the approach of using AI to solve problems using experience-based rules or protocols, or in other words, as "a *philosophy that is different from quantitative, logically controlled computer*

processes" (Rouse, 2016) and involves the search for non-traditional solutions in which, Based on the experience gained, the desired solutions are reached. Formally speaking, this leads again to the already discussed definition of intelligence, considered as the ability to process information and find an appropriate solution in the shortest possible time. In this sense, it is not so much the search for a solution, but the transformation of the search process into an effective tool that brings the idea of AI closer to how people make decisions, based on knowledge and incentives, but also under the influence of their experience.

The comparison of these two processes – in humans and machines – actually marks the beginning of AI researchers' quest. If we start from the assumption that thinking is a process of separate steps, in which people go through a succession of associations and related decisions that are influenced or generated by specific stimuli, then why is it not possible to train machines to follow a similar process in the search for specific solutions? It is his vision of such a process that Minsky describes in the article repeatedly cited here. If we have to present it in detail, it starts with (1) looking for a possible solution among a huge range of options, which makes this process inefficient. To increase the effectiveness of finding a solution, it is necessary (2) to limit the options for a solution from the possible to those that seem most suitable. Here, performance can be improved by (3) targeting the search following the experience gained so far from previous searches. Based on this, through (4) situation analysis, the initially set search criteria are replaced with those that are more relevant. Finalizing this process can lead to (5) "intelligent machine behavior". Although Minsky's vision presented here seems logically ordered and justified based on an extensive literature review conducted by him, supported by several examples, at this stage, it can be seen more as an attempt to optimize existing processes by changing the approach, rather than as proposing a qualitatively new idea for the creation of AI.

Here we come to another question that at first glance crosses the boundaries of the field of science: can machines think? This question was asked ten years earlier by Alan Turing, who pointed out as the main starting point the need to define the two basic concepts associated with it – "machine" and "thinking" (Turing, 1950). The impossibility of doing this within the framework of the sought connection between "machine" and "thinking", Turing replaces with, in his opinion, a much more relevant question, proposing a "game of imitation". This is the already known "Turing test" to check whether a computer has intelligence in the human sense of the word or not. Without going into unnecessary details, the meaning of the Turing test is expressed in the following: if a person communicates through messages with another person and with a computer, without knowing who is what, is it possible for the computer to deceive the person that he is a person and not a machine? If this were to happen, according to Turing, the question "Can machines think?" would find its answer.

According to Minsky, this issue is more aesthetic than technological. He advocates the thesis that "*We must not allow our inability to discern a place of intelligence to lead us to conclude that programmed computers therefore cannot think*" (Minsky, 1964). In other words, although he rejects the idea of "intelligence in a machine," he nevertheless admits the possibility of, let us call it "process autonomy," concluding that the question is more about the impossibility of fully understanding thought processes and, in general, intelligence, than about giving a definitive answer to this question.

Several arguments and counterarguments can be sought in this direction. Questions related to "thinking machines" are a field for discussion by many researchers. Of course, the starting point of these discussions is the nature of thinking itself, and a frequently used approach is the search for dictionary definitions, although the lack of a single definition is emphasized. In general, most dictionaries define thinking as "*the action or ability of the mind to create thoughts*" (Merriam-Webster, no date); „*to believe in something, or to have an*

opinion or an idea" (Cambridge Dictionary, no date); such as "*the activity of the brain to consider a problem or possibility or to create an idea*" (Collins Dictionary, no date) or "*to believe that something exists, that it will happen, or to use your mind to understand or solve something*" (Britannica, no date). As can be seen from this quick review of the definitions of thinking in four of the most popular dictionaries, the scope of the concept is wider. It includes both abilities and specific activities, processes, and even beliefs and beliefs.

But let's go back for a moment to the nature of thinking, as a function of human consciousness, before we dive back to the main question that fascinated scientists in the early 1960s: "Can machines think?" To do this, it is necessary to compare two main points of view that take a look at Cartesian dualism. The first takes us back to the work of the French mathematician, physicist, and philosopher René Descartes, and the second to one of the brightest names in twentieth-century philosophy – Gilbert Ryle. This, going back in time, although it seems slightly removed from the main theme of this work, is extremely necessary for two main reasons. The first is related to the idea of AI in general, which defines it mainly by comparing and distinguishing it from the "natural" or human intelligence. And the second is that the main line in this comparison is the nature of thinking itself.

The main idea that drove all creative processes under René Descartes was to turn philosophy into a system of thought that would encompass all human knowledge. Although this goal may seem too ambitious, it was Descartes who became the founder of the rational approach to scientific research, thus setting a new point of view on knowledge in the time of dominant religious dogmatism. And to the world as a whole. Based on the philosophical ideas of Plato and Aristotle about the dualistic nature of the world and man, Descartes considered the mind and the body as separate "substances", the body, according to him, having no ability to think, and the mind having no spatial dimensions. In his theory, man is considered as a link between the "soulless bodily mechanism" and the "willing and thinking soul"² (Bachvarov et al., 1985, p. 131). According to Descartes' teaching, the essence of the "soul" is thinking, and in this sense, he considers living organisms as "complex automatons, deprived of the ability to think" (Bachvarov et al., 1985, p. 131). In this line of thought, one who is tempted to philosophical speculation would say that from the point of view of Descartes' philosophical system, the question "Can computers think?" seems to have been solved more than 300 years ago, but as we have already pointed out, here we use the ideas of the French mathematician and philosopher only to outline the context of the question we are interested in when considering AI receptions.

If we return to the topic of "thinking", in the work "Discourse on Method", published in 1637, (Descartes, 2011), as well as in the work "Rules for the Guidance of the Mind", written in 1628, but published in 1701, Descartes defined four basic principles on which the modern understanding of finding rational solutions to problems or problems is based (Watson, no date). The first is not to accept something as true unless it is self-evident. The second states that the problems to be solved should be divided into their constituent parts. The third presents the process of finding a solution as moving from simple to complex tasks, and the fourth is concerned with the verification or verification of the original judgment" (Watson, no date). In this sense, for Descartes, thinking is defined as a process independent of the physical organism, which exists a priori in human beings, as a manifestation or rather as a function of their "soul". This concept is perfectly understandable because of the leading religious dogmatism already mentioned, and the persecution of all ideas that cast doubt on its divine origin.

² In Descartes' teaching, in essence, dualism in man is expressed through the connection between the soulless bodily mechanism and the thinking soul.

Entering into a dispute in absentia with Descartes, three centuries later (in 1949), Gilbert Ryle published the book "The Concept of Mind", in which he attempted to debunk Cartesian rationalism (Ryle, 2009). According to him, the main mistake is in considering the relationship between "consciousness" and "body" as two categories of the same logical group. In his book, Ryle refutes this interpretation of the mind-body relationship by drawing attention to the popular belief (which he defines as the dominant dogma in idealism and religious teachings) that every person has a mind and a body, and that the mind can continue to function after the death of the body. According to Ryle, this basic principle contradicts everything that modern science already knows about the human mind (Ryle, 2009). Here, of course, we refer to the question of the relationship between "consciousness and body" and the paradox of how to place in a common system the mental and the physical, which are essentially entities of different systems (Kim, 1998). This is the main problem associated with trying to answer the question "Can computers think?"

Of course, within the framework of this text, the issues discussed so far are not questions of the main research, but *of the context of the main research*. If we have to define AI, or more precisely, the presence or absence of the ability to perform a mental activity (according to the researchers, since here we are only conducting a literature review on the topic), we can assume a conditional logical chain, by arranging the following assumptions as follows:

- (1) *Thinking is a function of the mind*
- (2) *Only living beings have a mind*
- (3) *Only living beings can think*
- (4) *Therefore, mechanical devices cannot think.*

Viewed in isolation from each other, these statements are based on previously presented ideas and concepts. From the point of view of the philosophical system of Descartes' dualism, there are internal contradictions embedded in this logical chain. Moreover, defining living organisms, except man, as "complex mechanisms" that have no consciousness, ergo cannot think, Descartes would immediately define the internal contradiction in placing a logical relationship between "true" and "false" statements (we recall that in his system, only those statements that are obvious and cannot be questioned are true). In this sense, if we replace (3) and (4) "living beings" with, say, "human creatures", this contradiction would disappear and (4) can be verified as a "true" statement.

Starting again along the presented logical chain from (1) to (4), and considering (again according to Descartes' concept) living beings and machines/computers as complex mechanisms, here again, we do not see the presence of contradictions. According to the second concept under consideration, however, the constructed logical chain is based on the fundamental contradiction of considering within a logical order entities such as "body" and "consciousness" and thinking as a manifestation of this consciousness. In other words, although it may be questioned, thinking, seen as a process of simple actions united in more complex logical chains, can be "liberated" from the imperative that it is an intrinsic characteristic only and derives solely from living organisms. With this, we can return to the question of "thinking machines".

In his article "Thinking Through Machines", Jerome Kernan defines thinking as a "mental process" and poses a series of three questions: (1) Do computers think if they think – (2) how do they think, and (3) do we need to know how it works (Kernan, 1965). Going through the philosophical aspect of these questions through several examples from everyday life and business practices, he juxtaposes the concept of "thinking" with that of "intelligent behavior" that can be simulated by computer programs, defining two main types of this behavior. The first is related to the use of AI to solve specific tasks, and the second is related to the imitation of cognitive processes in human behavior. It should be noted here that Kernan

views these types in the context of management, not as intrinsic characteristics of computers that have "complex economic behavior," but rather as simple (separate, unrelated) "behavioral patterns." We present this view because it is important for understanding the context in which the "reasonable" behavior of machines was considered in the mid-sixties.

In the same direction is the publication of Wayne Meinhardt, who examines the relationship between AI, computer simulations of behavioral processes, and management approaches (Meinhardt, 1966). Focusing on research using computer models to study human cognitive and social processes, which, during this period, according to him, were characterized by increasing numbers, high quality, and rapid development, Meinhardt defends the thesis that this cannot help but affect the way management processes are perceived and viewed in general. According to his research, this type of computer simulation can be considered a type of "intelligent behavior". Examining the various points of view in the period under consideration that define or deny the ability of computers to "think", he argues that although it is possible to speak of "intelligent behavior", the question of their ability to think remains too controversial. In addressing this problem, Meinhardt points out the lack of a unified concept of thinking in general. Based on previous research in the field of AI, he defines thinking as "*a process in which information is obtained, manipulated, evaluated, and influenced*" (Turing, 1950; E. Feigenbaum and Feldman, 1963; Kernan, 1965).

Meinhardt builds on the research of Feigenbaum and Feldman and cites the working hypothesis for defining human thinking as "the activity of processing information in the human nervous system" (E. Feigenbaum and Feldman, 1963). Based on this hypothesis, it is assumed that (1) information processes are "fully explainable", and this explanation can be carried out through (2) observation, experimentation, analysis, modeling, and verification of models, from which he formulates the conclusion that (3) computers, as information processing devices, can be programmed to perform all these processes, ergo to be "taught" to think. It should be pointed out that Meinhardt does not reject this working hypothesis of Feigenbaum and Feldmann, but makes it clear that it can only be accepted through the restriction that "even if computers can be taught to think like humans, it is a matter of a very long way that has not yet been traveled."

In the cited article, Meinhardt proposes three approaches to considering the idea of computers being taught to "think" – (1) research through artificial intelligence, (2) computer simulations of cognitive processes, and (3) computer simulations of social behavior. In this regard, he raises another important issue related to the use of these three approaches – the possibility of defining a computer program as a behavioral model. Difficulties (1) to define the set of variables that this behavioral model contains, and (2) to define the relationships between these variables that allow the computer system to function as a natural system whose function is such a behavioral model. Since we are more interested here in the application of AI tools than in the fundamental question that preoccupied science in the sixties of the last century, related to the ability of computers to "think", in this article, Meinhardt's review of the application of AI programs is of greater importance to us. In summary, he points out several areas of this application – (1) solving complex mathematical problems based on accumulated data from previous solutions, which mimics learning processes (2) solving specific tasks in the field of business process management, by providing random options (3) using a heuristic approach to solve difficult problems, by reducing them to a series of easier and (4) simulations of human behavior in games in which a person plays against a computer program. It should be emphasized here that all four described areas of application include attempts to create algorithms through computer simulations, which resemble *thinking as a process of variants of a sequence of steps* in different models of behavior.

In any case, it is also necessary to point out the limitations of this approach to presenting the idea, on which Meinhardt focuses his attention. According to him, these

computer simulations should be considered mainly as *a tool* that expands human knowledge in some areas, including behavioural and social sciences, or carries out specific activities. This can serve as one of the starting points in the definition of AI, especially when it comes to the already discussed line of opposition between human thinking and "thinking" in machines. In this sense, the opposition between the idea of AI and natural intelligence in humans (seen as two mirror systems of the same logical order) can be seen as an idea in the field of science fiction rather than of rational science, at least as far as the development of technology in the sixties of the last century is concerned. Because, at this stage, the possibilities of mimicking processes characteristic of human thinking are discussed rather than the ability of computer programs to carry out this process independently (Newell and Simon, 1961; Hunt, 1968).

Looking at the numerous publications of the sixties of the last century in this direction, Meinhardt supports the thesis of thinking as a process of concrete steps, based on Neisser's idea that, unlike humans, who have multiple goals that change in the process of their implementation continuously, computers have only a single goal that is set in advance (Neisser, 1963). This, in turn, allows him to conclude that "*To think like a person, a computer program must be endowed with powerful internal states*", which are, for example, emotions that she does not have. Which, in turn, casts doubt on the question of whether the achievement of such a goal is possible at all or not. Because at this stage, computers (computer programs) are defined more as assistants in people's activities than as an alternative to them (Wilkins, 1968).

Although the main debate in the sixties of the last century revolved around the idea of "thinking machines", it highlighted several main questions that occupied researchers during the period. The question "Can computers think?", although it is the subject of much discussion in the field of social sciences, should not be neglected, because of its ethical, philosophical, and technological context. The idea of man being regarded as the creator of a "thinking being" or of a machine possessing an intellect is, of course, not of a religious nature. This can be supported by two main arguments. First, research in the field of the human brain, as well as cognitive science, is advancing at a rapid pace and increasing understanding of how "thinking" actually works. At the same time, technological advances are becoming so strong which is gradually beginning to create confidence that the day when a computer with capabilities approaching the potential of the human brain can be made is not far off. From here, the idea of the probability of creating a "thinking machine" is only one step away. And, as has already been shown, the concept of AI is a logically grounded and completely natural manifestation of it.

If we go back to the "Turing Test" discussed here, we can see that as early as the beginning of the 1950s, a very important focus of the idea of AI stood out. The question he raises is not whether computers can think, but whether they can present themselves as thinking beings through their actions. In other words, it addresses the question of whether computers can create such content that its recipient perceives as created by a person or not. Of course, this question includes one of the concepts discussed so far to use AI as a tool in various fields – from mathematics and informatics to the management of production and sales processes. It is these two aspects of the idea of "thinking machines" that take us back from the field of religion and science fiction to that of social research. This development, it can be said, shifts the focus from the question of "*is it possible to create AI*" to the question of "*when would it be possible for people to make full use of AI in their work*".

1.2 Prerequisites for optimistic and pessimistic expectations about the benefits and applications of artificial intelligence

In the 1970s and 1980s, the topic of AI continued to be the subject of numerous studies, publications, and debates, and the high expectations associated with them. Significant in this direction is the article from 1970 by Life magazine journalist Brad Darragh, or rather Marvin Minsky's statement quoted in it that "*From three to eight years we will have a machine that will have the intelligence of an ordinary person*" (Darrach, 1970). If we can define the ideas and related developments for AI until the sixties of the last century as "visionary", it is quite natural that the expectations in scientific circles, in the mass media, and in practice are that these ideas will begin to become reality as quickly as possible. This is completely understandable since most of the difficulties mentioned for the creation and mass use of AI computers are associated with their limited capacity and capabilities. With some caveats, it can be argued that during the period under consideration, the thesis constantly appears that when computers have sufficient computing power, they can perform such processes that are within the power of the human brain, and beyond.

Such conviction is rooted in the already-mentioned notion of formalizing mathematical thinking (Jacquette, 2019). The idea that mathematical thinking can be reduced to or mimicked through a series of operations to be "mechanized" opens the door to accepting the possibility of creating AI at all. This refers to Leibniz's ideas that if a universal language is created through which all problems can be described, then all that remains is to find a method for solving them, which leads to the philosophical question, "Can all problems be solved if they are formulated in a universal language?" As a consequence of Leibniz's concept of universal language, which reduces all concepts to non-decomposing entities (primitives), through the combination of which all possible ideas can be described, are the developments of Alonzo Church and Alan Turing. They, independently of each other, rejected such a possibility, proposing methods of mechanized calculations, on which von Neumann's developments, which laid the foundation for the development of modern computers, were based (Barendregt and Barendsen, 2000). In the end, Church and Turing attempted to refute Leibniz's thesis by replacing the intuitive concept of "solvable" with "calculable" which led to the idea that a mechanical device, working with combinations of symbols (in the case of 0 and 1), could mimic the processes of mathematical deduction, which made the idea of creating AI seem completely feasible (Berlinski, 2001).

The development of these ideas expectedly provoked interest in the creation of AI, not only because of the bold thought that it is within human capabilities to create a "thinking machine", but also because of the high potential that the seemingly endless possibilities for applying AI in various spheres of economic and social life have. Such potential led to huge funding for the then-current conditions, and it is debatable whether significant funding gives rise to optimism that the creation of AI is very close or quite the opposite. And – quite naturally – the inability to make the predictions of AI visionaries come true leads to pessimism and stagnation in the development of AI. Daniel Cr evier, a Canadian AI researcher and entrepreneur, describes this process as a "domino effect", in which the emerging cynicism in research circles begins to find a wide response in the mass media, and hence this leads to the creation of negative attitudes in funding institutions (Crevier, 1993). Then, quite expectedly, there was a suspension of funding, which began the first "Winter of AI" – a term that first appeared at a seminar organized by the American Association for Artificial Intelligence (Crevier, 1993, p. 203).

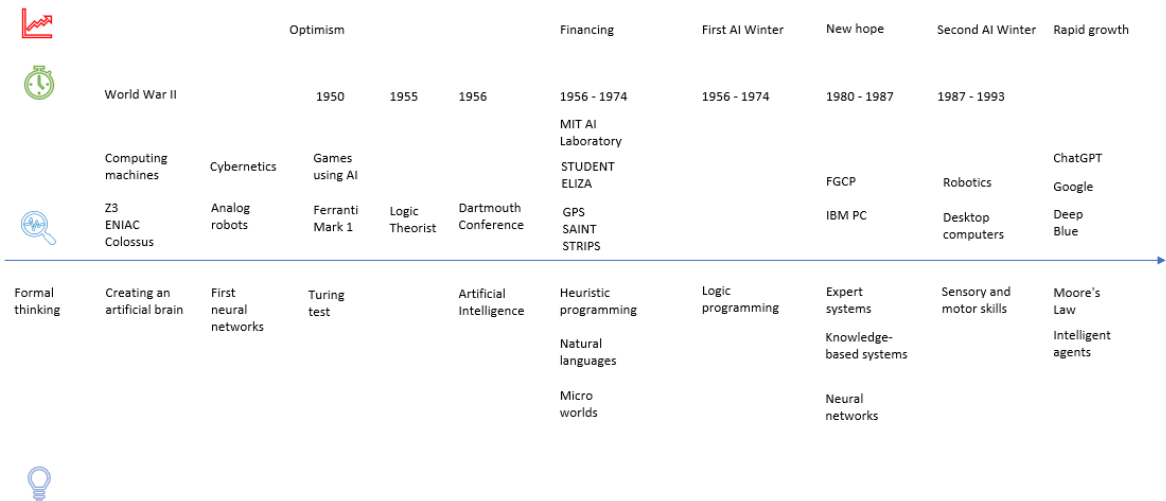


Figure 1.1. Evolution in the development of AI
Adapted from (Crevier, 1993; Berlinski, 2001; McCorduck, 2004)

In this regard, it can be pointed out that in the development of the idea of AI, receptions and related research and practical development and commercialization alternate periods of optimism and pessimism, which lead to rapid development and subsequent stagnation. This development is presented in Figure 1.1. and has the task of outlining the dynamics in the interest and lack of interest in the development of computer programs with the use of AI, rather than going into detail in terms of technological challenges and their (possible) solutions, which topic is interesting, but is the subject of another scientific field.

Tracing the history of the development of AI concepts, AMS outlines, in fact, the curve of expectations in general towards the idea of creating and developing AI and the related understanding of the possible applications of such a concept. If we go back to the first "automata" – mechanical devices resembling the external forms of humans or animals, where the idea of humanoid robots originated, and combine such a vision with the understanding of Plato and Socrates, and hence of Descartes about the nature of thinking, we can clearly see the origin of the idea and, respectively, the aspirations for the creation of AI. Quite naturally, the idea of creating AI is very close to the idea of creating an "artificial brain", which gained great importance through the computing machines used during World War II (Stanford Encyclopedia of Philosophy, 2006). The benefits of having to exhaust possible combinations in breaking secret codes, on which the outcome of the war may depend, are obvious. Thus, once the idea of formalizing mathematical thinking has been taken seriously, the idea that computing machines can be seen as artificial or mechanical brains is only one step away.

This optimism, in turn, can be argued with several basic premises that stem from (1) Norbert Wiener's cybernetics, (2) Claude Shannon's information theory, and (3) Alan Turing's theory of computation. If we trace the relationship between the individual arguments, we will see that if we approach the understanding of the human brain as an electrical network of neurons (Wiener, 1948) Add the understanding of information such as the presence or absence of a signal (Shannon, 1948) and add to them the understanding that any form of mathematical calculation can be represented digitally (Turing, 1950), the idea of creating an "artificial brain" would sound completely realistic. Also worth mentioning here is the already mentioned Turing Test (as if humanity is intuitively preparing to deal with its future fears of the emergence of AI, under the guise of the need to work out a clear criterion for whether the goal of its creation has been achieved or not), as well as the first appearances of computer games using AI, such as checkers and chess games (F. J. Corbató, 1963). In fact, the first computer program to successfully use elements of AI was created with the University of Manchester's

Ferranti Mark 1 computer by Christopher Starchev, one of the pioneers in the design of programming languages and video games (Campbell-Kelly, 1985).

If electronic checkers and chess games only hint at the possibilities that AI programs have and their future applications (in 2023, the global revenue of the game industry exceeds \$184 billion (Webb, 2024)), then Logic Theorist, created in 1956 by Alan Newell, Herbert A. Simon and Cliff Shaw are considered to be the first computer program that actually "owns" AI (Crevier, 1993). This computer program managed to prove 38 of the 52 mathematical theorems described in Bertrand Russell and Alfred Whitehead's book "Principles of Mathematics" (North Whitehead and Russell, 1927). It was this program that gave the future Nobel laureate in economics, Herbert Simon (1978), grounds to declare that the question of whether a material system can possess the properties of the human brain has already been solved (Russell and Norvig, 2003). It should be emphasized, however, that this assertion, in the field of modern philosophy, has been refuted by the popular "Chinese room argument" presented in John Searle's 1980 publication "Minds, Brains and Programs" (Searle, 1980).

In his article, Searle introduces the concept of "strong AI" and argues that it is not really about "thinking machines" but about computer programs, adding that no single program is enough on its own to be able to think. He supports this argument with the following argument: if a person who does not know Chinese receives notes written in Chinese characters and has all the instructions to be able to return a relevant answer in Chinese characters, he would give the impression that he knows Chinese. People, according to Searle's thought experiment, would think that the person in the room is fluent in Chinese, but that doesn't mean that if a computer program passes the Turing test (by fooling a person into thinking that it's not a program by mimicking rational behavior), it has intelligence and can think. This, according to Searle's concept, is because, unlike computer programs, the human brain has biologically specific capabilities to induce cognitive processes (Searle, 2010).

Everything said so far in this paragraph can be defined as a "prehistory" of the birth of AI, which is considered to be the summer seminar at Dartmouth in 1956, already discussed in the previous paragraph. To those who learned to use English, which also led to significant funding of developments by government departments and funds in the United States until the mid-1970s (Crevier, 1993; Russell and Norvig, 2003; McCorduck, 2004). This gives reason to talk about the "golden years" of AI, which, however, are coming to an end, and with them, the huge state funding of the sector for two reasons. The first is related to the fact that the great optimism of researchers creates great expectations, which, however, do not materialize through specific products or practical developments and, accordingly, turn out to be financially inefficient (Crevier, 1993). The second reason is related to the series of criticisms of the pioneer of modern understanding of AI, Marvin Minsky, about the capabilities of neural networks, which practically stopped development in this direction for more than ten years (McCorduck, 2004).

However, during the so-called "golden years" of AI, various developments took place, which can be considered as indisputable progress in the realization of the idea of its creation and use. According to extensive research on the history of AI in the cited works of McCord and Krevier, the main achievements in this period are related to the perception of "thinking" as a process of "searching", heuristic programming, the use of natural languages in programming, and the concept of "semantic networks" and simplified models (also known as micro-worlds or micro-world programs). "Thinking" as a process of "searching" actually presents in a simplified form the basic algorithm behind most of the AI programs created during this period. This idea can be compared to moving step by step in a maze towards achieving a certain set goal or finding a specific solution, guided by the set algorithm. With this method, however, the number of possible options is very large, which creates the need to use the heuristic approach (see previous paragraph) to reduce the possible options. On the

other hand, the ability of computer programs to "communicate" leads to the idea of using natural languages, which, in turn, leads to the concept of generating meanings through semantic networks (Jones, Willits and Dennis, 2014), which set "is/isn't" connections between a series of related concepts (such as "woman" and "man", "man" and "child", etc., which can be assigned to a common semantic nest).

Regardless of this accumulation of ideas and concepts that show the potential for the use of AI programs, the above-mentioned "domino effect" leads to the termination of funding for projects and specific scientists working in the field. An explanation for this fact, which led to the first "AI winter", can be found in the relatively limited capabilities of AI programs in the 1970s (Crevier, 1993). According to Krevier, these limitations are related to (1) limited computer memory or processor performance, (2) the sheer number of solution options that require an impossible number of computer hours of work to find the solution, (3) the unattainable amount of data that must be accumulated in the database for the AI program to work adequately, (4) the inability to perform seemingly simple actions such as recognizing faces or moving around a room without touching them other objects, known as the Moravec Paradox (Moravec, 1988) and (5) constraints in logical processes that require a change in the processes themselves. These limitations, coupled with the incessant criticism that AI programmes cannot come close to the way humans find solutions, and a lack of results, fully explain the stagnation of development in the field during the period considered.

Another important specificity should be noted here. The debate around AI computer programs seems to be motivated by the question we started with – can humans create a thinking machine or not? By transferring this idea from machines to computer programs with AI, the question somehow naturally reframes itself: "Is it possible for computer programs with AI to think like a human?" As evidence of the importance of such a question, but also of the logic behind asking it, are the concepts already considered in the Turing test, the argument of the Chinese Room, and the Moravec paradox? From this position, it can be said that the turning point that led to the end of the first AI winter is a simple idea that appears in the journal *Science* in Gina Kolata's article "How Can Computers Gain Common Sense?" (Kolata, 1982). The article quotes McCarthy as saying that "*machines are needed to solve problems, not computers to think like humans*". Here the debate comes to the so-called "qualification problem" – a concept according to which an AI cannot act like a human, because to perform a specific action, as a human would perform it, an infinite number of conditions must be taken into account that characterize the performance of the action itself (McCarthy, 1986), which, quite obviously, cannot be set by default in any algorithm. In other words, here the question comes again to the opposition between the formal processes performed by computer programs and the informal thinking characteristic of the human brain (Voss, 2001). In this way, the focus on which the vision for AI programs rests shifts from the likening of human behavior to solving specific problems, not in general, but in clearly limited, specific areas and a set of situations.

It is the successful solution of specific problems through AI programs, such as 'expert systems', that leads to a new boom in AI (Crevier, 1993). Essentially, expert computing systems are programs that have a relatively simple design and answer questions within a specific, limited field, with the answers drawn from a set of capabilities defined by experts in the same field. Their efficiency is so great that corporations have begun to invest in their creation and development, which returns interest in AI to a large extent, mainly due to its widespread commercialization (Winston and Prendergast, 1984). At the same time, this rise is also because neural networks, "forgotten" in the 1970s, are gaining popularity again as a result of two scientific events. These are John Hopfield's proof that a form of neural network ("Hopfield Network") can learn and process information in a completely new way, and David Rumelhart's popularization of a new method of training neural networks ("backpropagation")

(Crevier, 1993; Russell and Norvig, 2003), which represent a kind of "breakthrough" in this area.

After the boom in expert systems and their widespread use in corporations and the renewed interest in neural networks, there is again a decline in the development of AI programs. According to some researchers, this decline can be explained by the expensive maintenance and development of expert systems on the one hand, and on the other hand, by the rapid development of the personal computer market, which at some point began to surpass expensive enterprise hardware solutions in terms of computing power (Crevier, 1993; Berlinski, 2001; Russell and Norvig, 2003). Moreover, the expectations for AI formed during the boom period are again not fully justified, which leads to a redirection of government funding to other areas where faster returns are expected (Crevier, 1993). In this sense, it can be argued that interest in AI is returning along with the realization that AI-based solutions are becoming more and more common in the technology industry in areas such as data mining, logistics, industrial robotics, speech and image recognition, the banking and insurance sectors, and especially in the field of search engines (Russell and Norvig, 2003).

In the seventies and eighties of the last century, the main topics that fell into the focus of researchers of AI programs could be searched in different directions. It is noteworthy that the interest in the practical application of these programs is beginning to prevail, at the expense of the philosophical questions raised so far related to the possibilities of simulating the work of the human brain. For example, specific applications of AI programs for sales forecasting can be used to replace the lack of basic statistical knowledge and skills of sales professionals by offering easy-to-use AI computer programs (Collins and Mauritsen, 1987). This example is quite indicative of the above-mentioned shift in focus in the understanding of AI from their perception as systems with intelligent behavior to tools with specific practical applications, such as the aforementioned AI computer systems that are used in sales management (Collins, 1984).

Of course, interest in the application of expert systems in practice remains, with the use of AI tied to natural languages, automatic programming, and industrial robotics (Kumara and Lehtihet, 1986). In this direction, it also comments on the limitations of the use of AI in cases where knowledge structures require such possibilities of expression that do not exist in conventional algorithms (Althoff *et al.*, 1988). In some of the publications, in addition to the specific applications of AI programs, the focus is on considering them as a tool that supports and makes more effective the work of specialists in specific professions, such as evaluators (Dreyer, 1989) or credit managers (Srinivasan and Kim, 1988).

Quite naturally, interest in AI is maintained and growing in the field of robotics. One of the directions in which this interest is directed is in discussions on the creation of a "human interface" for robots. The idea is related to the possibilities within the production process for an operator to communicate with a robot through natural language by giving specific voice commands. The main problem here is rooted in understanding the exact command and its correct execution, which requires a step-by-step introduction of knowledge throughout the life cycle of an industrial robot – and not in the possession of a set of knowledge that was introduced during its production and has not developed (Hinde, 1989). Which turns the accumulation of knowledge into a conceptual framework for setting the algorithms that govern AI (Russell *et al.*, 1989). This idea was also discussed by Igor Alexander, starting from the different levels of intelligence of industrial robots, conditioned by the development of computer technologies and AI programs (Aleksander, 1986). According to him, the main problem is related to the "human knowledge" used in decision-making processes being "translated" in an appropriate way into the language used by computer programs, which in turn requires a new type of logic used in expert systems.

In the early nineties of the last century, a landmark article appeared - "Elephants do not play chess" (Brooks, 1990). In it, Rodney Brooks argues that a fundamentally new approach to creating AI programs is needed. According to him, intelligent systems, and rather robots, must be in constant interaction with the environment, which, he says, contradicts the traditional approach of abstract manipulation of symbols. As the main argument for the proposed approach, Brooks presents the claim that the physical interaction of the program with AI would allow the construction of a model of behavior based on the principles of the environment in which AI operates. Brooks develops his thesis by stepping on the concept of "language of behavior", which he considers as a set of single actions related to the implementation of a complete process. According to him, an algorithm is needed to collect and manage these units in a comprehensive model of behavior (in specific situations). Applying such an approach, according to Brooks, is concerned with solving four main problems (Brooks, 1990, p. 14), namely finding a way:

- to combine more individual modules to generate behavior in such a way that they are productive and relate to each other in a complete process;
- to deal with multiple sources of perception of environmental data in such a way that they are combined into a semantic unit;
- to automate the construction of interfaces for interaction between the individual modules (units) that generate the behavior so that larger and therefore more competent systems can be built on this basis;
- to automate the construction of the individual modules that generate the behavior in a way that will ensure their modification (under the influence of the data received from the environment).

The solution to these four main problems, according to the cited publication, could be implemented only after sufficient knowledge in the creation and operation of AI has been accumulated and the necessary experiments have been conducted. The early nineties marked a new moment in the development of AI. The prevailing concepts are being challenged, computer science and technology are developing at an accelerated pace, which leads to a qualitative change in the computing power of computers, and hence in their ability to process data and generate information of different types and natures. After the two 'AI winters', in which reality is far behind the promises of the visionaries who have received funding, a series of developments in different areas of economic activity are accumulating, showing the unfolding potential of AI.

What has happened since the early 1990s can be defined as an exponential development of AI programs and AI concepts in general. In 1995, Richard Wallace developed the A.L.I.C.E chatbot. (by Artificial Linguistic Internet Computer Entity), (Wallace, no date), based on the idea on which Joseph Weizenbaum's computer program ELIZA was created (Weizenbaum, 1966). To this idea, Wallace adds the collection of data from online natural language arrays, which allows the chatbot to answer a huge number of questions "acceptably". The algorithm of both programs is such that, based on the recognition of keywords in the question, the program formulates such an answer that creates a belief in the questioner that it is communicating with an "intelligent machine". Although Weizenbaum's program is often defined as the first chatbot ever, in fact, what it has in common with later AI programs based on large language models is the idea that meaningful communication between a human and a computer can be simulated. Or as Weizenbaum defines in the cited article, the algorithm of ELIZA's work,

„... Input sentences are analyzed based on decomposition rules that are triggered by keywords appearing in the input text. Responses are generated by reassembly rules related to selected decomposition rules...“

In his paper, Weizenbaum points out several main components of the algorithm, based on which late language models, when processing huge amounts of data, will use "deep learning" and neural networks to simulate much more convincing communication with people and answer much more complex questions. These components, arranged within a single process, make up the following sequence:

- (1) identification of the most important keywords contained in the input message,
- (2) finding a minimum context for the use of these words,
- (3) the selection of an appropriate transformation rule and the implementation of this transformation,
- (4) using a built-in mechanism to generate responses to missing keywords in the incoming message, so that the response is in the context of the conversation being held so far, and
- (5) providing algorithms that facilitate editing, especially expanding the possible range of options at the scriptwriting level (Weizenbaum, 1966, p. 40).

Seen from the standpoint of striving to create "intelligent machines", even such a basic program seems like a big breakthrough (as the appearance of Chat GPT is perceived thirty years later). In May 1997, a computer program popularly named Deep Blue defeated reigning chess champion Garry Kasparov to win a prize of \$1.1 million. In the interview that one of the creators of IBM's expert system, Murray Campbell, gave to Deborah Yao 25 years later, it is claimed that it was this event that radically changed the field of AI (Yao, 2022) – because the expectations accumulated during the years of the "AI winters" received concrete evidence of the existence of working programs.

An interesting fact that can be discussed in this direction is the commercialization of Furby – the first talking home "robot", which in just two years after its creation in 1998 realized sales of more than 16 million units and was banned from being imported into the territory of the American space agency because of the potential danger that it could record classified information (*World: Americas Furby toy or Furby spy?*, BBC, no date). A year later, MIT researcher Cynthia Breazeal created Kismet, a robot that can recognize and simulate human emotions (*Kismet, the robot*, MIT, no date). All these events show the trends for AI to enter people's ordinary lives and thus, more or less, shape and/or change the attitude of people and researchers towards the topic.

If we had to summarize the most important changes that took place during the period under consideration, we would, first of all, put the transformation in the perception of the idea of AI – from a means of creating a "thinking machine" or in other words, a condition without which such a machine cannot exist, to a computer program with AI, which can be a tool for increasing the efficiency of the work of specialists in various fields of knowledge. The economy and even the usual way of life. In this regard, instead of the sought "computer intelligence", which should be equal to or surpass humans, comes the idea of opportunities to solve specific problems through AI, a characteristic property of expert systems. This can again be seen as a fundamental idea, as it "narrows" the scope of the expected action of AI programs to specific areas of activity or knowledge, for which, according to their current state and development, software and hardware technologies can provide the necessary resources. And in this sense, it replaces the unrealized vision of AI with the implementation of more modest, but possible tasks at this stage.

Viewed from the outside, humanity seems to be giving up its claim to create artificial intelligence ("thinking machine"), replacing it with seemingly "reasonable" or "convincing" simulations of human behavior, especially when it comes to the sphere of communication between computer programs and humans. Nevertheless, attempts to realize this ideal continue. In this direction, the already considered concepts for the accumulation of sensory data from the environment, based on which (self-)training of AI programs can be carried out, so that the

decisions and actions they take are more and more similar to human ones. On the other hand, perhaps the greatest contribution to the search for "intelligent" communication between humans and AI programs has led to the use of deep learning concepts, neural networks, and language models. Quite naturally, an incomplete understanding of how a program works and what its application can generate great distrust and raises several ethical problems, which are discussed in the next paragraph.

1.3. Ethical and moral issues related to artificial intelligence applications³

In 1993, Verner Vinge published the article "The Future Technological Singularity". In it, he argues that in thirty years, people will have the necessary technological means to create a "superhuman intelligence." When that happens, he says, "the human era will be over." (Vinge, 1993). Most likely, this is a simple coincidence or an "irony of fate", but thirty years later, Yuval Harari finds a reason (the beginning of free access to use ChatGPT) to claim that AI has "hacked the operating system" of human civilization, with which example it is no coincidence that this text begins. These two references indicate the presence (or activate the already existing) dividing line, on one side of which stand people and on the other – machines. And here "machines" should be understood not so much as automata or technological devices, but as the "intelligence" or algorithm that controls their actions. We have already repeatedly mentioned the roots of these fears or apprehensions, which have accompanied human civilization since its earliest years and are connected, in general, with the unknown and difficult to understand. This idea can be traced back to the deification of the elements of nature, which sheds the seeds of doubt, and hence of the belief that there is some other intelligence, unknowable to humans, that can interfere and change their destinies, evolved into ideas about the divine origin of the world to the post-apocalyptic visions of creative industries in which machines conquer the world. Although this does not fall within the object and subject of the present study, it only determines part of its context. Rather, this example shows that the topic of AI, passing through different areas of human knowledge, requires the application of an interdisciplinary approach for no other reason than so that the phenomena and facts of interest to us from the object of study can be better understood in the context of the environment that gives rise to them. In this sense, the fear that AI programs will lead to job losses in the creative industries and the technology industry is a familiar "fear" that is very reminiscent in its nature of the main reason for the Luddite movement in the 19th century.

As with every appearance of something new and difficult to explain from the point of view of the processes that drive and control it, but which finds rapid application in people's daily lives and their economic activity, several arguments "for" and "against" arise here. Insofar as the arguments "for" the existence of AI programs in terms of their immediate benefits and the potential they possess have been attempted to be described in the previous paragraph, it is time to look at the arguments "against", especially as regards their ethical interpretation since it is a driving factor for the development of AI in general and the attitude towards it. In her book "Machines That Think: A Personal Study of the History and Perspectives of Artificial Intelligence," Pamela McCorduck defines four types of arguments against AI programs (McCorduck, 2004, p. 209). These are (1) arguments of emotions, (2) arguments of irreconcilable differences, (3) arguments born of a lack of existing examples, and (4) arguments with ethical considerations. The first group of arguments, she points out in the cited work, can be reduced to the idea that "intellect" or "reason" can only be a human characteristic, and no one else can possess it. This understanding, in itself, takes us back to

³ The ethical context of the application of AI programs in this paragraph is considered from the standpoint of applied ethics, which deals with the study from a moral point of view of practical problems, such as the use of AI in the household, social and economic life of people.

the dark ages of human history, but even if it were extended to "an intrinsic characteristic of living beings," it still cannot be accepted as unconditional. The second group of arguments McCord summarizes with the statement that reasonable behavior requires creativity and originality, and no machine possesses such qualities. Here she raises another question already discussed in the previous paragraph – that intelligence requires the presence of learning processes by processing sensory data from the environment – a contradiction that can be overcome using Brooks' approach (Brooks, 1990). Of course, McCord also argues against this approach, and it is that intelligence requires autonomy, and no machine has one. The third group of arguments, according to her, can be summarized by arguing that even if computers can possess intelligent behavior, no one has yet made them exhibit it.

In contrast to the first three groups of arguments "against", in his book McCordak pays much more attention to arguments from the group of ethical considerations. It starts from the hypothesis that it is possible for computers to exhibit intelligent behavior, and in connection with this assumption, outlines a range of questions that arise from this if we accept the assumption as reality. First in this direction is the argument of "possibility"—(1) whether, even if computers are capable of intelligent behavior, humans should work to create or stimulate such behavior. Hence, following the same logic, the question arises (2) whether it is possible to predict the results of such intelligent behavior. If the answer is no, this also leads to the next argument related to (3) the need for greater caution in the development of AI programs. Here, of course, the classic argument of "Pandora's box" (or the opposition to caution against risk) is activated – that if you don't understand something well enough, you can't predict the outcome of using it, which requires more caution. And since the question rests on another mythological fear – "letting the spirit out of the bottle" – the next ethical argument is that (4) for such decisions it is necessary to hold a public debate, i.e. the decision to be made not by a select circle of developers and organizations, but by all people who will be directly affected by possible future changes. This raises the final argument related to (5) the need to pre-formulate a set of constraints that would give a higher degree of security to humans at the moment when AI programs begin to behave intelligently.

Before returning to the ethical side of the issues under consideration, let us clarify the idea. The concept of AI as a mirror image of human intelligence is already being commented on, which moves from the idea of developing procedures or algorithms through which intelligent behavior is created to the idea of simulating intelligent behavior. This fundamental distinction between the two categories – "is" and "looks like" – is again based on the idea of AI as a mirror essence of human intelligence. This juxtaposition can be traced throughout the history of philosophy and becomes the subject of a notion that is unconventional for the world of AI developers and researchers, which Hubert Dreyfus develops in his book *What Computers Still Can't Do: A Critique of Artificial Intelligence* (Dreyfus, 1972). According to Dreyfus's theory, human and computer intelligence are completely different from each other. He sees AI developments as a function of a long-standing philosophical tradition that attempts to define behavior as a set of three sets of rules – (1) practical, (2) intellectual, and (3) moral. The main problem in applying these outdated concepts is due to the fundamental difference between human intelligence and AI from the point of view of phenomenology, or, in particular, the lack of so-called "artificial intelligence". An 'external horizon' of perception that aligns the 'internal' or, in other words, allows the passage from the general picture (context) to the details, as opposed to the 'machine processing' of data, based on which the context must be determined (McCorduck, 2004, pp. 211-243). Dreyfus, however, questioned the possibility of intelligent behavior at all, due to the impossibility of describing ordinary human activities in their diversity by algorithms, and defined AI as "*Using computers to simulate intelligent behavior*" (Dreyfus, 1972, p. 77). In this sense, Dreyfus's research is important from the point of view of the question of whether and to what extent it is relevant

for moral and ethical norms that derive from and determine human behavior to be applied to AI behavior, except in cases where AI behavior is seen not as "behavior" but as "simulation of behavior."

Viewed in this context, however, the question of whether AI computer programs can think becomes a question of whether AI programs should be able to think (McCorduck, 2004, p. 353). The answer to this, according to McCorduck, goes through finding an answer first to the question "How do we exactly expect AI programs to change people's lives?" Thus, changing the focus of one of the main issues related to AI since its inception, it is clear that discussions about ethical norms affecting the use of AI programs would be relevant, rather than ethical norms of AI in general – i.e., the focus would be on the application, not on their existence.

According to McCorduck, Weizenbaum was the first researcher to seriously question the morality of AI, ten years after he introduced his ELIZA program (McCorduck, 2004, p. 356). He argues that there are areas in which computers should not interfere, whether they can do so or not, by identifying three main groups of actions. They are related to (1) actions that would directly affect human life, (2) actions that involve irreversible but obvious consequences, and (3) actions in which the computer program is proposed as a substitute for typical human functions, such as interpersonal relationships, understanding, and love (Weizenbaum, 1976, pp. 202-228). Although Weizenbaum's book "Computer Power and the Human Mind: From Judgment to Calculation" was met with devastating criticism (Agassi and Weizenbaum, 1976), it can be seen as an initial attempt to create a framework related to the ethical interpretation of the future application of AI programs. We should not forget, too, that this is taken as the first attempt in this direction, and areas (1), (2), and (3) are essentially points of reference, not a code of ethics, which is undoubtedly necessary if we accept Weizenbaum's arguments and the positions he defends.

In support of this statement (about the need for a code of ethics, accepting Weizenbaum's arguments), we can briefly take a time jump and see the continuation of this line of thought in the statement of Gabriela Ramos, Assistant Director-General for Social Sciences and Humanities of UNESCO (Ramos, 2023), which claims:

"In no other field is the ethical compass more relevant than in artificial intelligence.

These general-purpose technologies are re-shaping the way we work, interact, and live. The world is set to change at a pace not seen since the deployment of the printing press six centuries ago. AI technology brings major benefits in many areas, but without the ethical guardrails, it risks reproducing real-world biases and discrimination, fueling divisions and threatening fundamental human rights and freedoms."

We allow ourselves such a long quote because it shows, 47 years after Weizenbaum's publication that provoked a backlash among AI researchers in 1976, the same arguments that UNESCO used to promote the need for a code of ethics for their application. UNESCO's AI Ethics and Governance Lab provides access to resources to all stakeholders and outlines four core values and ten key principles contained in the "Recommendations on the Ethics of Artificial Intelligence", which was adopted by 193 countries in 2021 (UNESCO, no date). These four core values are related to (1) protecting human rights and dignity, (2) living in just and interconnected societies, (3) ensuring diversity and inclusion, and (4) protecting the environment and ecosystems. The adoption of these four sets of values ensures that AI programs can work for the good of humanity, societies, individuals, and the environment.

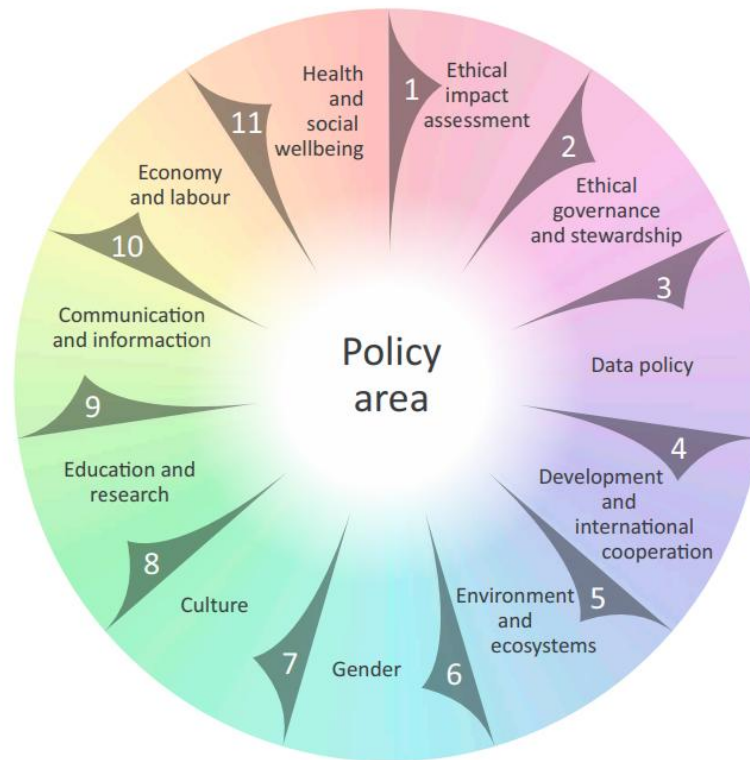


Figure 1.2. Policy areas for the responsible development of AI technologies

Source: <https://www.unesco.org/en/artificial-intelligence/recommendation-ethics>

As a basis for considering the ethical framework for the creation and application of AI programs, we use here precisely the "Recommendations..." for two main reasons. On the one hand, they have been accepted by all existing countries in the world, except the Vatican and Taiwan (which are not members of the UN), which means that the principles described in them are accepted as relevant to the dynamic processes in the development of AI. On the other hand, as already mentioned at the beginning of this paragraph, the point of view that we adopt when considering the ethical context of the functioning of AI is precisely from the standpoint of applied ethics. Which, in turn, turns the "Recommendations..." within the framework of the Code of Ethics in this area. It should also be noted that the starting point for formulating the recommendations is the perception of AI programmes as 'systems with the ability to process data in a way that resembles intelligent behaviour', as the speed of technological change would make any narrower definition of AI inapplicable in the future.

As can be seen, the changed paradigm for the understanding of "intelligent behavior" already commented on in this paragraph leads to specific formulations within the scope of ethical norms that affect their application, and, in general, it can be said to define them. In this sense, when creating the ethical framework for the work of AI, an approach is taken that takes human rights as a starting point. Based on this approach, ten core principles contained in the AI Code of Ethics are defined, from which eleven policy areas for their implementation are derived (Figure 1.2). These principles relate to:

- (1) The use of AI programmes must not go beyond what they are intended for. This creates a need for a risk assessment in their application to ensure the prevention of harm that may occur from the illegitimate use of AI.
- (2) Preventing unwanted harm and ensuring that vulnerability to malicious attacks is avoided.

- (3) Protecting data privacy throughout the lifecycle of AI programmes, as well as establishing a framework of principles that ensures data protection.
- (4) Respecting international law and national sovereignty in the use of data, as well as ensuring the participation of all stakeholders in the governance of AI.
- (5) Enabling AI programmes to be audited and monitored, ensuring that conflicts with human rights and environmental standards are avoided.
- (6) The transparency and explainability of AI programmes to a level appropriate to the context of their use, which would ensure that this does not conflict with other principles of their application (such as the protection of personal data).
- (7) Ensuring that AI programmes are not transferred to the ultimate responsibility that the people of the specific action should bear.
- (8) An assessment of AI technologies against their impact on the UN Sustainable Development Goals.
- (9) Promoting the understanding of AI through open and accessible education, civic engagement, digital skills, and training on AI ethics, as well as promoting media and information literacy.
- (10) Promoting social justice by all actors involved in the processes related to the development and use of AI and ensuring that these processes are accessible to all stakeholders.

A careful reading shows that all ten basic principles make up the ethical framework for the use of AI programs, and as can be seen, they build on the three starting points for the ethics of AI in Weisenbaum's publication cited several times, and a fourth one related to the protection of personal data and the transparency of their use can be added to them. It can also be pointed out here that the activities that are related to the concept of Sustainable Development (SD) as a whole can be assigned to the second zone in the Weisenbaum classification – avoidance of actions that are irreversible, which falls within the framework of the basic principle of SD for the use of limited resources in a way that is which would guarantee the right of future generations to be able to use these resources. If we were to place the above ten basic principles of the UN Code of Ethics on the use of AI in the adapted conceptual framework of Weisenbaum's basic principles, they would look like this:

- Not to endanger human life – (2) and (3);
- Not to lead to irreversible consequences – (1), (2), and (8);
- Not to replace typical human functions – (7);
- Ensure transparency and protection of privacy – (4), (5), (6), and (9).

As the second principle relates to (2) "preventing unwanted harm and ensuring that vulnerability to malicious attacks is avoided", it can be applied to both threats to human life and the prevention of irreversible consequences. as well as in the EU legal framework, the term by which we currently refer to AI programmes is 'AI systems', these two terms, in our opinion, can be used interchangeably. An argument for this is the very definition of AI that the EU adopts, namely: "... *the use of digital technologies to create systems capable of performing tasks that are generally considered to require human intelligence*". In this sense, the concept of "AI System" coincides with the (computer) "AI Program"⁴ used here. Since the issues of AI terminology used concern the legal framework for the use of AI, which in turn is

⁴ Following the evolutionary approach in the terms used, from now on in this text "AI systems" and "programs with AI" will be used interchangeably, despite the obvious differences between the concept of "system" and the concept of "program". Our argument, without going into the field of informatics and computer science, is that in the analyzed literature sources, depending on the positions and points of view of the considered authors, AI tools are defined as "programs", "systems" or "intelligent systems".

directly related to applied ethics, understood as the moral norms in the use of AI and therefore the rules that govern it, let us take a look at the concepts used by the EU.

According to the EU, the European Union is the first organisation to adopt an AI law, defined as "*a regulatory framework that aims to ensure that AI systems are safe and that they respect the law and fundamental rights and values of the EU*" (European Council, 2024). The aim of adopting such a regulation is to ensure that the use of AI follows a global approach that can be defined as (1) ethical, (2) safe, and (3) trustworthy. According to the philosophy of this regulation, finally approved on May 21, 2024, four levels of risk are defined, which require different strength and scope rules for use.

According to this risk-based approach, four main levels are defined: (1) minimal or no risks, (2) limited risk, (3) high risk, and (4) unacceptable risk. In turn, different levels of risk require maintaining existing or adopting new regulations to ensure compliance with the ethical framework of AI. For example, video games and spam filters are defined as (1), which does not require a change in the existing regulatory framework. The AI systems on which chatbots operate fall into category (2), which means that the principles of transparency and explainability already described must be applied to them, so that users are aware that they are communicating with an AI program and not with a living person. The AI systems that fall within the area (3) are those related to the use of means of transport, examination assessment, recruitment, and credit. For this reason, these systems must meet a strict set of pre-formulated criteria and be approved before they can be commercialised on the EU market. Zone (4) includes AI systems that use the collection and processing of cognitive and behavioural data about users, emotion recognition at work and in education, as well as social assessment. This also includes remote biometric identification systems, such as facial recognition, which, according to the perceived level of risk, are about to be banned, with some "certain exceptions" (European Council, 2024).

Based on the risk-based approach used and the associated classification of risk levels, the proposal of the European Parliament and the Council of Europe defining AI rules defines two types of AI systems, high-risk and low-risk (European Commission, 2021).⁵ According to Title III of the cited document, "high-risk" is defined as those falling into five main groups, namely:

- (1) Biometric identification and categorization of natural persons;
- (2) Management and operation of critical infrastructure;
- (3) Education and vocational training;
- (4) Employment, worker management, and access to self-employment;
- (5) Access to public and private services and benefits.

Although the issue needs a more in-depth legal interpretation, which is not the subject of this text, the AI systems that fall within the scope of this study, namely AI content creation tools, could, in a sense, be related to the so-called "AI Content Creation Tools". High-risk AI systems, to the extent that audience segmentation and profiling data are used in the planning of marketing and communication campaigns, which falls within the scope of (1), and to the extent that they can be used in the training of marketing and communication professionals, which in turn falls within the scope of (3). As the focus of this paragraph is on the ethical context in the use of AI, it is also worth noting Title IX of the cited document, which establishes a framework for the establishment of codes of conduct targeting 'low-risk' AI systems. According to the idea set out in this title, these codes should be in line with the existing ethical rules for "high-risk", but can also include voluntary commitments related to environmental sustainability, access for people from vulnerable groups, and the involvement of all stakeholders (European Commission, 2021).

⁵ We consider this document as a starting point for the definition of the four levels of risk adopted two years later

From the review of several important documents that form the current ethical framework for the use of AI, it can be seen that the values embedded in them, which determine moral and ethical norms, coincide with the common European and human values related to environmental protection, equal access to all social groups, and the protection of individual rights. Indeed, the main task of the documents examined is not to limit but to stimulate the development of developments related to AI and to increase their credibility through the creation of a common regulatory framework. Of course, the 'safeguards' set out in them are only intended to ensure that AI is not used for purposes that are contrary to fundamental European and global values, which shows that AI legislators and policymakers, if nothing else, at least assume the existence of such a danger. In this sense, the non-exclusion of such a danger can also be taken as a sign of the existence of hidden, latent fears about the possible future applications and directions of the development of AI technologies.

Is it possible to find such concerns in scientific publications related to the topic? The first thing we can say in this direction is that the interest in the ethical aspects related to the application of AI is significant. A quick check by keywords AI and "ethics", "ethical issues", etc. in one of the largest full-text databases of scientific publications (EBSCOhost) shows the presence of 1435 sources, of which 728 in scientific journals, 423 in journals, 20 in commercial publications, 31 in newspapers, etc. to show that there is also significant scientific interest in the topic.

If we limit the search only to scientific journals, we can see that the first published publication is from October 1981 (Brightman, 1981). The question posed by Harvey Brightman is related to the thesis that the decision to use AI programs to support decision-making, including management, is an ethical issue. Twelve years later, Omar Khalil asks the same question, tying it to the application of expert systems in the decision-making process. The ethical considerations expressed by him refer to the third area of ethical problems defined by Weisenbaum and are expressed in the position that AI expert systems should be used only as an aid, without transferring the responsibilities arising from the decision to them (Khalil, 1993). The arguments that Khalil points out are that expert systems with AI are not inherent in human intelligence, they lack emotions and a value system, and random or set biases may be present in their algorithms.

An interesting point of view on the problem is presented by Warren Sack in his article "The Artificial Nature of Man" (Sack, 1997). According to the author, the opposition of AI to human intelligence leads to "blindness" or "myopia" among both advocates and critics of AI. Sack argues that the main problem is rooted in the frequently asked question "Can machines replace humans?", in connection with which he makes the next assumption – "If machines can replace humans, then are humans a special kind of machines?". Building such a logical connection between the two questions, based on a literature review of the pros and cons of AI, Sack formulates four essential human characteristics that cannot be applied to hardware and software "machines" according to critics and advocates of AI – these are (1) mind, (2) emotions, (3) perceptions, and (4) body. Fixating on these four characteristics, Sack says, distracts us from the crucial questions surrounding the cultural and ethical impacts of AI on human nature, which can alter its boundaries and scope.

The divide between "natural" and "artificial" intelligence gives rise to the opposition of "us" and "them" and sets the context for how AI is generally perceived, regardless of which of the two camps is adopted. This division, according to Sack, determines how developers imagine AI programs and design them. In his article, the author finds the beginning of this trend in the ideas of some of the pioneers of AI, Herbert Simon and Alan Newell (Simon and Newell, 1958; Newell and Simon, 1961). Following this line, Sack comes to the thesis of one of the fathers of virtual reality, Jaron Lanier, according to whom the attribution of anthropomorphic characteristics and possible actions to computer programs leads to the notion

that computers can be like humans, which in turn creates a danger that people will begin to perceive themselves as computer programs (Lanier, 1995). Thus, Sack concludes, Lanier provides an alternative perspective on the utopian discourse related to the idea that AI programs can, in the near future, replace monotonous human activity and increase the efficiency of people's work. Such as sifting through huge amounts of data and weeding out those that are of interest, as well as formulating summaries based on such actions.

If thirty years ago the discourse that Sack talks about was utopian, then from today's perspective, this plot is becoming a reality, because here we refer to some of the main functions and characteristics of AI programs, such as, for example, search engines and chatbots. This, in turn, makes the point of view on the ethical problem discussed by Lanier relevant again. Moreover, referring to the ideas of Donna Haraway that all scientific and technological artifacts are not only theories and functional objects but also myths (Haraway, 1989; Bandlamudi, 2024), Sack draws attention to the idea that the boundaries between "human nature" and "artificial intelligence" are either insurmountable or non-existent (Sack, 1997:63-64). If we accept Haraway's understanding of scientific and technological facts as myths (which define the narrative of AI) and, in particular, one of the views in cybernetics about the anthropomorphic nature of AI, then we come naturally to the ethical context that Sacks sets in his vision of AI:

„The ethical implications of cybernetics-inspired critique depend on this ecological observation: everyone and everything is potentially, inextricably linked together and thus - at least in principle - deserves an ethical treatment“ (Sack, 1997, p. 64).

We pay more attention to Warren Sack's ideas about the ethical context of AI for a very important reason for us, related to drawing the boundaries of this context. The already juxtaposed two points of view for understanding AI, as a tool that facilitates people's work and increases its efficiency, and as a computer program/system with an "anthropomorphic" design, also set two possible ethical contexts. On the one hand, considering AI as a "tool", the moral questions that are raised are related to the ethical use of this tool by humans to other people or institutions. On the other hand, if we consider it as a computer program/system with an "anthropomorphic" design, it would mean that we give AI anthropomorphic characteristics, and in this sense, the moral question is transformed from *an ethical use of AI* to *an ethical attitude towards AI*. Of course, from the point of view of the rational approach, it is not possible to (yet) ascribe "human" qualities to AI and, in this sense, raise the question of the rights of AI within the framework of the social human-AI interaction. This, however, does not mean that Sack's position that the "anthropomorphic" design of AI programs/systems, to one degree or another, can change human nature, which in turn raises much broader ethical problems, although they most likely concern the near future.

Such opinions are not isolated in scientific circles (Sullins, 2001; Petersen, 2007) And in this sense, passing them by risks the consideration of ethical issues remaining one-sided. A similar point of view to Sack's is advocated by Allen, Varner and Zinser in the journal "Experimental and Theoretical Artificial Intelligence" (Allen, Varner and Zinser, 2000), but they go even further. In their article, the authors start from the thesis that the rapid development of AI technologies, and in particular of computer programs with AI, which are increasingly acquiring autonomy (defined as "autonomous systems" or autonomous agents), requires the creation of an "artificial moral system" (AMS) or artificial moral agent. The authors define the concept of a "moral system" as *"an individual who takes into account the interests of others and does not motivate his actions solely by pursuing his personal interests"* (Allen, Varner and Zinser, 2000, p. 252), raising another question in this regard – whether AI programs would operate in all situations as autonomous moral systems (AMS) or not. According to them, attempts to create AMCs are hampered by two areas of ethics on which no agreement has been reached.

The first has to do with the principle of utility, considered as a basic moral norm. According to this principle, "right" actions can be defined as those that maximize the overall good result of actions, which, however, contradicts the idea that, from a moral point of view, actions that maximize a good result can be defined as unjustified. This controversy raises many questions about whether and what algorithm could be created so that such contradictions could be autonomously resolved by the AI program from the point of view of ethical principles, and, obviously, here the question rests on the universality of ethical standards. The second problematic area of ethics, according to them, is at the conceptual or ontological level, and so to the question of ethical standards is added the question of what the characteristics of the "moral system" are. Based on their proposed definition, the authors of the article pose several questions – such as whether setting ethical standards and procedures for their implementation automatically turns AI into AMC, whether AI should perceive and analyze its actions from an ethical point of view, and whether, if it is to be "autonomous", AI should choose whether to follow or violate already set ethical standards. If they contradict his understanding of the behavior of the AMC.

The contradictions described in these two zones of (possible) ethical behavior of AI rest on such dichotomous pairs of concepts as "good" and "evil" and "right" and "wrong". This is how we arrive at Kant's categorical imperative (Kant, 1974), cited in the article by Allen, Varner and Zinser as "*act in such a way that the rule of your will may always become a universal law*" (Allen, Varner and Zinser, 2000, p. 253) In other words, through this basic principle of ethics, they introduce as a normative requirement for the behavior of AI its actions to be accepted as "ethical" by the parties concerned. This, the authors conclude, can only be achieved if AI can assess the effect of its actions in advance, which they define as the biggest challenge for AI developers.

The risks associated with the "ethical" behavior of AI programs are not a problem that concerns only a few researchers. At the end of 2012, a scientific conference entitled "Risks and Impacts of Artificial Intelligence" was held in Oxford, where a range of topics were discussed related to the pursuit of anticipating and managing the potential risks of the development and implementation of AI systems (Müller, 2014). During the conference, the following important issues are discussed, related to (1) the possibilities of predicting the impacts of future AI systems, (2) what interdisciplinary scope such research should have, (3) how the world will change under the influence of AI, (4) in what directions future research should focus on such a possible change, (5) what needs to be done, to preserve the scientific approach to investigating the effects of AI, (6) what are the best possible methods to ensure safety and predictability in the use of AI, and (7) whether it is possible to create a scientific field in which research would ensure the establishment of applicable security protocols. As can be seen from the scope of the topics discussed, the limits of the risks associated with the development and uptake of AI systems in mass use are clearly delineated. On the other hand, the already discussed issue of conflicts in the two ethical areas (Allen, Varner and Zinser, 2000) directly addresses one of the most important issues (7). This is because only through security protocols can the ethical behavior of AI systems be ensured, which, however, would only be possible in cases where these systems would be able to foresee the consequences of their actions and would have the ability to violate these protocols in situations of ethical dilemmas.

At the same time, however, opinions should also be indicated according to which security protocols could hardly guarantee the ethical behavior of AI systems. According to Miles Brundage, security protocols can increase the "probabilities" of ethical behavior of AI systems, but only in some, not all, situations, for three main reasons: (1) the nature of ethics, (2) computational limitations, and (3) the complexity of the world (Brundage, 2016). Other

researchers see greater risks of unethical actions in the field of robotics in the application of AI systems that simulate human behavior (Miller, Wolf and Grodzinsky, 2015).

It can hardly be assumed that the 2012 Oxford conference marks a borderline period, but it is noteworthy that scientific publications related to the ethical context of the use of AI systems have been growing at different rates in different periods. If we use the full-text scientific base EBSCOhost as a basis, we can see that from the appearance of the first of the already mentioned keywords to the beginning of the twenty-first century, their number is seven. In the first decade of the twenty-first century, the number of scientific publications doubled, and in the next decade, it increased tenfold, while for the last four years, their number exceeded five hundred (and from January to July, the number of published publications on these keywords was 369). Although such claims need additional, targeted research, such trends of growing interest in the ethical aspect of the application of AI systems can be found in other databases of scientific publications, which shows that the topic has become increasingly important in recent years and deserves special attention.

A review of scientific publications over the past ten years leads to the impression that among the main topics that researchers are concerned with are the risks of using AI systems, which raise many ethical questions. Some of these risks are related to one of the three starting points, generators of ethical problems (according to Weisenbaum) – the transfer of responsibility for actions performed by/through AI systems to AI, and thus the release of responsibility to the people who use them. In this regard, the question arises whether, if the advancement of technology leads to a point where AI systems achieve actual autonomy, people should be exempt from responsibility for their actions or not (Johnson, 2015) – something that the philosopher Robert de Georges defines as the "responsibility gap" in his book "Ethics of Information Technology and Business" (De George, 2003). Although he avoids giving a definitive answer to the question, Johnson supports the thesis that technological progress, and hence the evolution of AI, are not self-generating processes, but a function of human activity, and in this sense, the responsibility for the actions of AI systems cannot be transferred to them (Johnson, 2015, p. 714). Unless, of course, we assume that humans (still) have complete control over these processes.

Even if the impression has so far been left that the ethical issues related to the responsibility of AI systems for actions are projected only in future periods, if the de facto autonomy of AI has been achieved, this is not at all valid. Taking the example of self-driving cars as a basis for ethical constructions, Marc Coeckelbergh argues that the more important question is actually how the transfer of responsibility for AI's actions (in specific situations or scenarios while driving) changes people's subjective judgments about the moral consequences that these actions lead to (Coeckelbergh, 2016). For Coeckelbergh, this issue is of particular importance because, according to him, responsibility is a generalizing concept that is not considered in his cultural contexts, but should be before discussing the transfer of responsibility from humans to AI (Coeckelbergh, 2016, p. 757).

For us, this perspective is also of particular importance, as it puts a possible perspective on redefining responsibility as a concept, at least as far as the penetration of AI systems into people's lives and activities is concerned. For example, in cases where to achieve the necessary degree of autonomy to ensure their functioning, AI systems must be able to make ethical decisions independently (Millar, 2016). Advocating an anthropomorphic perspective in the development of AI, Miller proposes the introduction of five basic principles to define the scope and principles of operation of AI's "ethical assessment tools" (Millar, 2016, pp. 739-802). These are:

- (1) Proportionality in the approach used;
- (2) User-centricity;
- (3) Recognition and acceptance of the psychology of the user-AI relationship;

- (4) Integrating the principles of ethical human-AI interaction into AI design;
- (5) Determine which AI design principles are acceptable and which are not ethically acceptable.

Concerning the proposed principles, and in particular, about (4), Millar proposes a framework for the creation of a 'code of ethics' for human-AI interactions that sets out the principles for the creation and design of AI. This "code of ethics" includes four basic laws – (1) people's emotional needs must always be respected, (2) maximum transparency in the programming of AI systems, (3) the application of reliable design principles for AI systems in all aspects of its operation – hardware, software, as well as related to the processing of data outside the AI system, and (4) ensuring human informed consent to the principles of the "code of ethics" of the human-AI interactions (Millar, 2016, pp. 806-807).

Although the adoption of a code of ethics requires a broad discussion with equal treatment of the opinions and positions of all stakeholders, Millar's proposal still has concrete value, and it is in raising the issue of creating common ethical principles that address these still-new relationships between AI programs and humans who use them. As already commented here, an important point of view is also the perspective on changing people's perceptions of responsibility as a result of the use of AI, especially regarding automated actions, decisions, or consequences of the actions of autonomous systems with AI. It can also be said, albeit with the necessary amount of conditionality, that the main ethical determinants of actions – and in general of the design and existence of AI systems in general – are a form of "defensive reaction" against existing fears about the future development of technologies that people think they cannot control (DiCarlo, 2016). In this sense, the construction of an ethical framework or a "code of ethics" plays the role of a "safety net" that should prevent unethical actions, the consequences of which could lead to irreversible changes.

While the majority of the issues addressed so far link the ethical context of the application of AI systems to the autonomy of their actions, other publications that address various ethical aspects need to be addressed. Some AI researchers question whether and to what extent the automation of knowledge work is ethical and, in this regard, argue the need to study the ethics of AI technologies and their impact on the decline of professions related to knowledge work (Sutton, Arnold and Holt, 2018). In this regard, Sutton, Arnold, and Holt suggest that attention should be directed in two directions: (1) to promote alternative skills that keep humans relevant to the rapid development of technologies using AI and (2) to expand philosophical discussions related to the ethics of the development of technologies with AI.

Other publications related to ethical issues in the application of AI programs raise some "exotic" topics that can be referred to as attempts at predictions based on logical constructions, but of course, have the potential for the development of technologies and societies in certain directions to pose important ethical problems. These scientific publications are related to potential or hypothetical possibilities, such as discussing the idea of the "personality" of AI systems (De Winter, 2018), the use of autonomous weapons of mass destruction (Chmielewski, 2018), or even the potential use of robots for self-defense (Zajac, 2018). While it may seem pointless to discuss events that are difficult to predict and (possibly) set in the future, such debates should not be ignored, as the view on the need to broaden the scope of ethical principles related to the use of AI has already been repeatedly commented on. Some other scientific publications on the topic focus entirely on practical potential problems that arise under the influence of the development of AI technologies and change the environment in some areas. Such are, for example, the changes that can occur in the insurance sector when using autonomous cars (Margan, 2018), the impact of autonomous business processes on cultural and ethical processes in societies (Wright and Schultz, 2018), or potential opportunities for fraud (Arkin, 2018).

The purpose of this paragraph is not to carry out an exhaustive literature review of all scientific publications relating to the ethical aspects of AI applications and, accordingly, to describe and analyse all those aspects, but only to outline the boundaries within which the ethical framework for AI is formed and, in this regard, to present the main ethical issues raised. Here it is enough to point out a general trend related to the review. It is noteworthy that in the first period, when the topic of the ethical context of AI began to gain popularity among scientific circles, the questions raised can be referred to philosophical debates related to three main areas. These are (1) the need to build an ethical framework, (2) the challenges – technological and philosophical – of incorporating such a framework into the algorithms that govern AI programs, and (3) the formulation of clear and workable ethical principles or ground rules that can serve to create an AI code of ethics. In the following years, however, the topics that fall into the interest of researchers on ethical issues related to AI have become more and more fragmented and begin to affect not only general, but also specific, areas of its application. Such topics are, for example, the relationship between AI ethics and business ethics, as well as the role and place of robotics in this relationship, which is directly related to the future needs of the symbiotic human-robot environment in the workplace (Chatterjee, 2023). Or in the study of the information asymmetry in the knowledge about AI of experts and non-specialists and the related need for a broad public debate on the importance of overcoming such asymmetry (Buhmann and Fieseler, 2023).

Special attention should also be paid to the ethical issues and challenges that are associated with AI tools for content creation, as they are the focus of this study. Of course, all aspects of AI ethics, especially when it comes to applied ethics, cannot be defined as unimportant. But at the same time, a detailed examination of the individual cases available that fall into the field of research interest would make sense within the framework of a more complex and comprehensive study of the ethics of AI. On the other hand, concerning the limitations set out in the introduction, in this text, we are more interested in the ethical issues related to the creation of marketing content from AI tools, rather than in the questions raised by all other areas of its application. In this sense, it can be considered that based on the literature review made in this paragraph, the *main* and more important topics and ideas related to the ethical context of AI are outlined, so the following examines the specifics of the ethical framework for working with these systems in content creation.

1.4. An attempt to systematise views on ethical issues related to the use of AI tools

With the beginning of free access to ChatGPT, topics related to the ethical context of AI systems acquire new relevance, or rather, another specific area in the field of ethical discussions. Opinions are advocated that generating "precise, high-reach content that looks like it was written by a human" is a turning point in the debate over AI ethics (Ilia, Colleoni and Zyglidopoulos, 2023). Ilia, Koleoni and Zyglidopoulos define three new challenges that such a debate would raise. These are (1) the generation of fake news, (2) the massification of the production of low-quality content, and (3) the creation of obstacles in the process of communication between stakeholders within the communication process. The authors see the focal point of the debate not so much in the very essence and characteristics (or in the nature) of AI systems but in their application for the specific purposes of content creation. In this sense, the center of the debate, according to them, should be focused on (1) the much easier creation of content that can be used to spread fake news and disinformation, (2) the increased opportunities for non-specialists to create content of low quality, but which would be difficult to recognize as "generated", and (3) the significant reduction of the direct exchange of information between stakeholders within the communication process. The reasons for this unethical use of AI content generation tools can be sought in three main directions – (1) the fuzzy responsibility for the consequences of using AI content creation tools, (2) the increase

in the deviations in their operation, and (3) the commercialization of user data (Illia, Colleoni and Zyglidopoulos, 2023, pp. 203-204). In their study, the authors offer a conceptual framework for solving the new ethical problems they describe, which includes several possible actions. A careful reading, however, shows that all three types of ethical issues discussed by the authors concern the use of the results obtained from working with AI systems, and not how these systems function. In this sense, it can be said that the article deals with ethical issues not of AI, but of the purposes of using AI-generated content – in other words, the issue here is about the ethical behavior of humans, not AI systems.

Other scholars discuss ethical issues related to the "appearance-reality" relationship that characterizes the "computer program-human" communication seen in the use of AI chatbots in customer service (Porter, 2017). Or ethical issues that arise when using AI expert systems in coaching (Terblanche, 2020). The differences in perceptions between male and female voices in AI voice assistants from the point of view of the concept of gender are also identified as an ethical issue (Borau *et al.*, 2021). Advances in the development of AI technologies, especially when it comes to data processing, image recognition capabilities, content generation, and recommendation algorithms, according to other researchers, lead to ethical questions, such as those related to provoking destructive behavior and self-assessments stemming from subjective notions that machines are better than humans (Maynard *et al.*, 2022).

One aspect of the ethical debate under consideration is related to the rapid development of AI chatbots and, in particular, those based on large language models – such as those of Google, OpenAI, and Meta in terms of the ethical use of the data they operate with (O’Leary, 2022). In this direction, the importance of observing ethical principles in the use of tools such as Chat GPT in healthcare is also argued in their possible functioning as virtual assistants (Javaid, Haleem, and Singh, 2023). For other researchers, the question of how the chatbot-human relationship through communication affects a person's morality is of fundamental importance (Zhou *et al.*, 2022). Based on the idea that the morality of an individual is also mediated by relationships with other people, the authors of the cited work argue the importance of studying the relationship they problematized from the point of view of the fact that the use of chatbots is already part of people's social life (Rana, 2023) and similar influences need to be investigated (Snell, 2023).

Over the past year, there has been a lot of discussion about the use of AI content generation tools in scientific work, and in particular in data collection for research and publications. According to many authors, the new capabilities of AI raise again important ethical issues related to text authorship, copyright compliance, plagiarism, citation practices, and moral norms in general (Lund *et al.*, 2023). Lund *et al.* argue that, in general, the use of AI content generation tools has the potential to completely change the academic environment, research, and publication activity, which requires an extremely careful attitude to the ethical issues that arise from their rapid development (2023, pp. 577-578).

In his concept article "The Dark Side of Generative Artificial Intelligence: A Critical Analysis of the Controversies and Risks of ChatGPT" (Wach *et al.*, 2023), based on a critical analysis of publications and practices, Christoph Wach *et al.* propose a framework for the negative effects of the development and implementation of AI content generation tools, articulating seven main threats. These threats are related to the findings of the authors at the time of their research (1) lack of regulation of the AI market, (2) dissemination of poor quality content, disinformation, fake news and biased viewpoints, (3) job losses due to automated business processes, (4) violation of personal data, privacy and social surveillance, (5) social manipulation and shaking of trust in established ethical principles, (6) increasing socio-economic inequalities, and (7) stress associated with the use of AI. It may be pointed out, based on the AI ethical principles systematised in the previous paragraph, that all of these

threats address fundamental ethical issues related to the use of AI systems. Also, however, except for certain caveats (3) and (7), these threats stem directly from the unethical motives that may be behind the use of AI generative systems, while (3) and (7) are interpreted as a consequence of the impact of technological advances on the labour market and people's social lives.

The use of the AI content generation tools that fall into the focus of this study raises its own, specific set of ethical questions. As can be seen from the review of scientific publications made so far, most of the studies examined discuss topics that are directly related to the application of AI-generated content. And in particular with the moral effects that this use entails. On the other hand, the connection between the ethical issues raised in academia and concerns about the violation of basic ethical principles after the advent of AI (especially after the commercialization of AI systems) and the ethical framework that encompasses the changed environment - which framework is set by the recommendations to the UNESCO Ethical Principles of AI already discussed in the previous paragraph (UNESCO, no date) and EU policies and regulations (EU, 2024) in this area.

To summarize the specifics of the ethical principles related to the use of AI and the way they form the basic principles of operation of AI systems for content generation, we will allow ourselves a "thought experiment". Being aware of the main criticisms and limitations of the applicability of such a practice, we will only emphasize that such an approach is repeatedly used in the formulation of logical constructions and the derivation of principles related to the ideas of AI – practices that have already been discussed in detail in the previous two paragraphs (for example, in the Turing thought test, the argument of the Chinese room, etc.). For this "thought experiment", two starting conditions can be indicated. The first is related to the choice of a specific AI tool with which to conduct our "experiment", and the second is related to the very specifics of the work of language model-based AI content generation systems.

The choice of ChatGPT can be justified by two main reasons. The first has to do with the fact that it is the official launch of the AI tool in November 2022, which can be said to drastically change the environment for content generation, and the consequences of this change have not yet been explored in sufficient depth (Maynard *et al.*, 2022) to realize their full scope and directions of development. The second reason is rooted in the opinion advocated by several researchers that although there are other available tools for generating content with AI, Chat GPT has visible advantages over others in terms of the functions it performs (Haleem, Javaid and Singh, 2022; O'Leary, 2022; Lund *et al.*, 2023) And from this point of view, it seems most suitable.

The second starting point is related to defining exactly what type of AI system ChatGPT is. According to the online edition of Encyclopedia Britannica, ChatGPT (the name is an abbreviation of *Chat Generative Pre-training Transformer*) is software that allows users to ask questions in natural language and receive answers that are difficult to determine whether they are given by a human or generated by an algorithm (Gregersen, 2024). The chatbot developed is based on GPT-3, the GPT-3 family of large language models of OpenAI. It is designed to generate natural language text by predicting the next word in a sentence or an entire sentence. The software is pre-trained using large databases, and self-learning techniques are incorporated into its algorithm. Chat GPT is most often defined as a large language model (LLM) that is trained to conduct dialogue (Lakshmanan, 2022). Lakshmanan defines language models as machine learning models in which algorithms are embedded in how to create sentences based on determining the probability of what is the most common (common) word order. In contrast, Lakshmanan says, large language models have enough parameters (GPT-3 has more than 175 billion) to be able to "learn" what is the most common word arrangement in a sentence in multiple contexts. Another distinguishing feature of large language models,

according to Lakshmanan, is their ability to remember word arrangements and generalize principles based on those arrangements through interpolations. This, however, Lakshmanan emphasizes, leads to another characteristic of large language models: the tendency to "hallucinate" (or invent facts, names, events, etc., that support their generalizations).

Here we present the principles of operation of large language models in a simplified form (after all, this text is not in the field of informatics and computer science), as this is of particular importance for our "thought experiment". This principle supports the thesis that generative AI tools, such as ChatGPT, generate their responses based on huge amounts of data, including available scientific publications. In this sense, it can be said that if we ask questions related to the ethical framework that defines the operation of the generative AI tool, this framework would be generated in two directions – on the one hand, answers would be given based on the most common context of information on the Internet related to the ethical context of AI, and on the other hand, on the basis of the self-learning mechanisms laid down in the design and the use of information from previous "conversations" on this theme with different users.

Let's now imagine that we have the opportunity to "conduct an interview" with an AI generative program concerning the ethical principles that define the "behavior" of the program when generating text on demand from a user (we put in quotation marks "conduct an interview" and "behavior" to emphasize the conventionality of these actions within the thought "experiment"). We have pre-formulated a set of questions related to our areas of interest in defining the current ethical framework for AI. Here is the initial list of questions:

- What ethical principles do AI programs follow?
- Which of these principles is of the greatest importance and which is of least importance to each other?
- What ethical principles should people follow when working with AI programs?
- How can the human-computer relationship be defined from an ethical point of view?
- How AI programs should "react" to the recognition of unethical behavior by a person entering the task;
- Is it possible to use AI content generation tools for unethical purposes?
- Who is responsible for unethical actions as a result of content generated by an AI program?
- Are there situations where AI content generation programs would violate ethical principles?
- Can AI programs anticipate the consequences of using content they generate to achieve relative autonomy?
- What (new) qualities and skills should people who will work with AI tools develop?
- Is it possible that there is an AI computer program that does not include compliance with ethical norms?
- What are the risks if such an AI program can be created?
- Can the current ethical framework for AI be changed and, if so, under what conditions and in what direction?
- In what direction will AI systems develop?
- To what extent do ethical norms determine the operation of AI content-creation programs?
- What direction would AI programs take if ethical norms did not exist?
- What is more important for the development of AI: technological progress or the existing ethical principles to which its work is subjected?

A close look at these questions would show that they are, in fact, a summary of the literature review of the ethical principles of AI made in this chapter and that they contain all the important issues that have been addressed so far. The idea behind such a thought "experiment" is to compare the responses generated by an AI system based on large language models with the opinions and positions of various scientists and researchers found within the framework of the literature review. The conditional "interview" with ChatGPT conducted within the framework of our study (Appendix 1) provides an answer to these questions. In order not to unnecessarily burden the text with volume, at the end of this paragraph, we present only the most important summaries since the full text of the answers given can be read in the annexes.

According to the answers given, seven basic ethical principles can be defined that determine the behavior of the AI generative program: (1) safety and well-being, (2) honesty and accuracy, (3) confidentiality and confidentiality, (4) impartiality, (5) compliance with rules and laws, (6) respect and courtesy, and (7) responsibility. Of these seven basic ethical principles, the most important are (1), and the least important are (5). In this response, the programme emphasises that *'all these ethical principles are important and work together to ensure safe, honest and useful communication between me and consumers'*, but it is of the utmost importance (1) because *'consumer safety and well-being are top priorities without which other principles would not make sense'*.

When defining the basic ethical principles that people must observe, seven are again indicated. These are (1) responsibility for information, (2) confidentiality, (3) respect for copyright, (4) responsibility for use, (5) critical thinking, (6) contextuality, and (7) ethics and legality. The reciprocity in the formulation of these two groups of ethical principles or rules of conduct is impressive. Quite naturally, the ethical rules of operation of AI are related to the observance of basic ethical principles when generating content, and in humans, to the use of this content. Here, perhaps, we should again emphasize the difference between content creation and generation. It can be described through the concept of the creator and the generator. If in the first case, we have the "creation" of something fundamentally new and non-existent so far, then in the second case, it is a question of choosing an appropriate combination of existing elements that are relevant to the chosen context of the application (which is the basic principle of operation of large language models).

In connection with this seemingly small difference, the ethical context of the human-computer relationship is also defined. It can be seen in the clearly defined function of the generative program with AI, namely – *"... Although AI computer programs do not have their own super-intelligence or consciousness, they can provide significant benefits through data analysis, process automation, and decision-making assistance.* This also defines the main application of AI-generated content from an ethical point of view – assistance in decision-making, not decision-making. From this position, quite naturally, the responsibility for the consequences of using AI-generated content cannot be "transferred" from human to AI, which in turn is in full agreement with the formulated ethical principles that determine human behavior within the framework of this "cooperation".

Despite the existence of reciprocal norms that should ensure the avoidance of unethical use of the generated content, such use is not excluded. Here again, the responsibility is clearly defined, and it lies with the user, not the content generator – *"... As an artificial intelligence, I am a tool that can be used by humans for a variety of purposes. I can be programmed or used by people for unethical purposes, but it depends on the individual actions and intentions of those who use me."* This also interprets responsibilities for the consequences of decisions taken based on AI-formulated recommendations or options for specific solutions. Or in other words, *"...If the person or specialist decides to implement one of the solutions I have proposed, he or she is responsible for the results of that action."* This means that it is only in the

prerogatives of humans to weigh all the alternative consequences of decisions made based on the recommendations of AI, which in turn shifts the moral responsibility for these decisions back to humans. Here, one can see the logic of exposing the series of arguments regarding moral responsibility for the consequences of actions taken through the use of an AI content generation tool with a clearly defined "tool" and "perpetrator" of the action.

This logic also holds concerning one of the already discussed risks of using AI generative programs – the use of content for manipulation, disinformation, or the dissemination of fake news (Wach *et al.*, 2023). As for the other, more important ethical issue related to the autonomy of AI systems (see the previous paragraph), a slightly different interpretation is given here. If the main criticism is that the autonomy of AI cannot be achieved because, from an ethical point of view, there must be an algorithm that allows AI to predict the consequences of its actions, then this statement is "refuted" by redefining the conditions for ethical behavior of autonomous AI. This new argument is related to the statement that "...*The main emphasis is on the system's ability to learn and adapt to be able to function effectively in different situations without constant human intervention*". Or we can see that the starting point of the principles of operation of large language models, discussed above, is adopted here (Lakshmanan, 2022), which emphasizes machine learning in a real-world environment.

An interesting parallel can also be drawn between the answers given and the main risks of using generative AI programs formulated by researchers (Steels and De Mantaras, 2018; Maynard *et al.*, 2022; Zhou *et al.*, 2022; Wach *et al.*, 2023). The five main groups of risks of using AI programs operating without ethical controls are defined as (1) manipulation and disinformation, (2) invasion of privacy, (3) racism and discrimination, (4) abuse and criminal acts, and (5) causing accidents and physical damage. Similarly, when comparing the answers given to the question of a universal ethical framework for AI and the recommendations of UNESCO and EU AI policies. According to the "proposal" for a universal code of ethics for AI, its framework would be defined by actions defined by six basic ethical principles – (1) transparency and responsibility, (2) protection of personal data and privacy, (3) non-discrimination and social inequality, (4) safety and trustworthiness, (5) interaction with people and society, and (6) education and training.

In this regard, the need to adapt such a conditional common ethical framework is also pointed out, depending on four groups of factors: (1) the dynamics in the development of technologies, (2) changes in social and cultural contexts, (3) changes in consumer expectations and perceptions, and (4) the emergence of new ethical challenges. Based on these answers, another conclusion can be formulated, although it is not explicitly stated, that the ethical framework is perceived not as static, but as a dynamic system that needs continuous adaptation under the influence of environmental factors. In this sense, it can be pointed out that the importance of ethical principles for this development also stands out when defining the main directions for the future development of AI. In this regard, five main directions of future development are defined:

- The integration of AI applications in all sectors aims to automate processes, improve customer service, and decision-making.
- Increasing the degree of autonomy of AI programs and using more complex decision-making algorithms adapted to different environments and conditions by increasing self-learning abilities.
- Adapting the most important ethical issues with expanding the scope of AI applications.
- Creation of intelligent assistants that will improve the human-machine relationship in wider areas of application – from medicine and science to art and culture.

- Develop regulatory and legal frameworks to ensure the fair and ethical use of new technologies.

The directions for future change described here actually represent the 'vision' of the place of AI systems within a dynamically changing environment. It can be said, however, that this 'vision' is largely determined by the ethical framework of both AI actions and the possible applications of these actions by humans.

The thesis that a generative AI program, based on generalizations made from all available online sources related to the topic of AI ethics, can generate the framework of the ethical context in which this program operates, cannot be accepted as indisputably proven by the thought experiment made here. At the same time, however, it can be argued that, following the principles of operation of large language models, this proof has, let's call it that with all possible conventions, a degree of reliability or can perform the role of a simple assumption ending with indirect evidence. However, since it confirms the conclusions made both based on the literature review of scientific publications on the topic and the "Recommendations..." of UNESCO and EU policies, this conditional level of credibility can be considered sufficiently high to outline the ethical framework for the work of AI generative programmes. It can also be seen that these three independent sources of conclusion lead to the possibility of formulating general principles that not only do not contradict each other but are in relative agreement even in their details. In any case, however, the ethical dilemma of whose responsibility it is for the consequences of actions and related decisions in the human-machine relationship seems to be resolved in all three cases in the same way.

Chapter Two

Artificial intelligence in the field of marketing and advertising

2.1 Main areas of application of AI tools in marketing

Judging by the initial reactions and concerns that flooded the public space after the appearance of Chat GPT, two groups of professions are indicated as the most affected: those in the field of marketing and those in the field of programming. One of the fast-spreading myths involves predictions of future job losses among programmers and marketing content creators. The arguments in this direction to the period under consideration seem to be completely rational and can be reduced to two main ones – (1) the chatbot can write code much faster than novice programmers and with much fewer errors, and also (2) it can generate much faster and much more variations of marketing and advertising content from employees at the beginning of their careers in marketing departments. In this sense, following rational logic, the idea that replacing many employees with a generative program with AI would result in a significant amount of saved resources seems like a perfectly reasonable prediction. Such a logical construction is only intended to outline the initial directions of the reactions caused by the concerns about the official opening of access to ChatGPT, based on our first impressions, and is not a conclusion made as a result of rigorous scientific research.

These reactions can be easily explained by the fears already described related to the ideas around the origin, essence, and development of AI in Chapter 1. At the same time, however, in parallel with these "predictions", or rather attempts to look to the future in the crystal ball of fears, opposite to them appear. At the other extreme, ideas are expressed that the new AI chatbot is a tool with huge potential that can be used in various spheres of human social and economic life, and through which the efficiency of professionals from different fields can be improved. Such an opinion is shared by some scientists, expressing those about the advent of a "new era" with the advent of the AI content generation tool (Haleem, Javaid and Singh, 2022). Among the areas where Haleem, Javaid and Singh see future potential for the greatest and fastest growth are customer service, online training, and market research – and in the long term, its role as a leading tool in the creative industries (Haleem, Javaid and Singh, 2022, p. 7).

Of course, these two theses are conditioned by a set of opposing statements and arguments, and, at least at this stage, it is difficult to predict with any degree of certainty how both the technologies behind AI generative programs and the labor market will develop in the creation of marketing content. While this may not serve as a reliable comparison base, let's see what the result of two Google search attempts is. The question "Will Chat GPT replace the work of content writers?" gives links to 248,000,000 results. Changing the question to "Will Chat GPT make the work of content writers better?" shows 148,000,000 results. If we replace "better" with "more effective", the number of results drops to 75,200,000. If we continue our experiments with the largest online search engine in the world, we will see that if we use the search for the keywords "ChatGPT" and "marketing fears", relevant to such a search are questions such as "How will ChatGPT affect marketing?", "What are the fears related to AI?", "Should we be afraid of AI?", etc. We can say that, at least as far as we are talking about the trends of public speaking, in the context of searching for information related to generative programs with AI, "pessimistic" over "optimistic" expectations prevail. Or at least that's what the ratio of the most frequently asked questions in Google shows.

If we put aside for a while the search for the context of the perception of AI tools for content creation and return to scientific publications on this topic, we can see that the interest in the relationship between marketing and AI, in general, has a long history. A search in EBSCOhost by keywords "marketing" and "artificial intelligence" shows 2,801 results of articles published so far in scientific journals. The first open publication in the results of this

search is related to the use of AI expert systems (see Chapter One, paragraph 1.2) in B2B markets and discusses their possibilities to support decision-making for choosing a marketing strategy and optimizing the activity of a retailer in the distribution channel (Lodish, 1982). It is noteworthy that at this early stage, among the indisputable advantages of using expert systems with AI, the generation of ideas for marketing solutions that have not yet been on the radar of the marketing strategy designer is pointed out (Lodish, 1982, p. 56). The model proposed in Lodish's publication has several applications, such as designing a marketing mix and other related decisions based on data from collected subjective judgments and sales information. In fact, during this period, most of the publications related to the applications of AI expert systems in the marketing activities of organizations were focused on personal sales (Collins, 1984) and sales management. As the main reason for this interest, it can be pointed out that within the organization it is easiest to provide initial data – both for expert opinions, considered as a basis for generating algorithms for decisions, and data for realized sales and related resources, which allows to compare the decisions made with the result of them and thus optimize the effectiveness of marketing actions.

Another, often overlapping interpretation of the relationship between marketing activities and AI is that of behavioral sciences. In it, the decision-making process is tied to the impact of attention and memory (Birnberg and Shields, 1984), and in this sense, it can be pointed out that AI systems have the potential to support both a better understanding of consumer purchasing decisions (Giunipero, 1984) and influence management decision-making (Tierno and Young, 1986). If we go back to the beginning of this paragraph and the two generalized points of reactions to the introduction of AI, based on the scientific publications reviewed so far, it can be argued that the focus falls mainly on the expectations that AI systems can improve the work of marketers – i.e. AI is seen as a tool to increase the efficiency of the specialist's work, and not as a threat to his job. This is also the direction discussed in the first chapter, paragraph 1.2. a statement about the possible applications of AI expert systems for sales forecasting and for replacing the statistical programs used with such systems, where AI supports the work of sales professionals who do not have the necessary statistical knowledge but need information obtained by such methods (Collins and Mauritson, 1987).

At the end of the 1980s, predictions were made that to date seem not only fulfilled but also exceeded expectations that AI expert systems would completely change the retail industry – especially when it comes to the potential of e-shops and product catalogs (Achabal and McIntyre, 1987). The widespread adoption of AI expert systems (see paragraph 1.2, First Chapter and Figure 1.1) also leads to various aspects that are considered in the scientific literature, such as their application to short-term supply planning, distribution, and marketing campaigns in the oil industry (Klingman, Padman and Phillips, 1988). Other researchers discuss the capabilities of AI expert systems in predicting sales volume under different ratios of variables in the marketing mix (Pymont, Morgan and Bond, 1988).

Also in the late eighties, the possibility of applying expert AI systems in the field of advertising began to be discussed. The possibility of using AI systems to solve semi-structured and unstructured problems in the field of media and advertising budgets, as well as the difficulties in qualitative aspects of advertising decision-making, are discussed (Cook and Schleede, 1988). As the main obstacle, Cook and Schleede point to the use of rigid procedures and quantitative modeling of large digital database sets, characteristic of AI expert systems, which they oppose to neglecting creative strategy. This, according to the cited authors, limits the usefulness of expert systems in the management of advertising products. In their article, they point out that most advertising solutions contain qualitative components that need to be taken into account, such as rules that present the relationships between facts and relationships between them, and semantic networks that set the context of the advertising decision (Cook

and Schleede, 1988, pp. 54-56). Indeed, the cited publication can be regarded as one of the first attempts, or rather as the design of a proposal for decision-making of the type 'advertising objectives – media mix' through the use of AI expert systems; moreover, by searching for rules that would allow the combination of quantitative and qualitative information, based on which such decisions can be taken.

In this direction, opinions on the need to adapt the basic principles of operation of AI expert systems to knowledge-based AI systems for the creation of advertising design can also be considered (Burke *et al.*, 1990). In their publication, Burke *et al.* characterize ad design decisions as a series of trial-and-error actions because of the huge number of possible creative options that are influenced by diverse and hard-to-define consumer perceptions and environmental influences, making it difficult to create and choose an ad design that maximizes campaign effectiveness (Burke *et al.*, 1990, p. 212). On the other hand, they discuss the problem of advertising effectiveness, which is linked to the practice of choosing one or two indicators to determine advertising effectiveness, which does not allow effectiveness to be measured (Burke *et al.*, 1990, p. 215). Since this is perhaps one of the first attempts to assign AI logical procedures to AI systems for generating advertising solutions, more detailed attention should be paid here because, in this type of decision, logic is subject to rules of a less formalised nature than the design philosophy of AI expert systems. (Burke *et al.*, 1990, p. 227). Moreover, scientific publications that explore the role and place of AI systems in making advertising decisions, in general, were almost non-existent in the 1990s, while their number began to grow exponentially only at the beginning of this century.

So, let's go back to Burke *et al.*'s proposal to create a knowledge-based AI system for decision-making for ad design. In their article, the authors define several starting points in the design of such a system. They start from the formulation of basic zones with rules related to advertising impact and, respectively, to advertising goals and the indicators necessary for their sizing. That the creation of advertising design is a "subjective and intuitive process", with decisions based much more on "*past campaign experiences, creative impulses, and intuition than on data provided by advertising research*" (Burke *et al.*, 1990, p. 212). In this regard, they argue that since creative processes are currently outside the scope of serious marketing science, AI expert systems have the potential to make marketing knowledge part of advertising design processes (Burke *et al.*, 1990, p. 213) and, in this sense, creative solutions to get out of the zone of subjective judgments and intuitiveness. In this regard, they propose the creation of a knowledge-based advertising design system using AI, which they call ADCAD (a name derived from the first letters of the approach chosen by the authors – *ADvertising Communication Approach Design*). The purpose of this system is to develop a tool based on the experience gained in building and functioning AI expert systems, through which decisions can be made based on market research data, theoretical formulations, and experiences for the choice of advertising goals, creative strategy, and communication approaches (Burke *et al.*, 1990, p. 213).

Starting from the idea of using the philosophy of AI expert systems, Burke *et al.* were faced with the task of first formulating a set of facts, rules, and models to support ad design choices. They looked at knowledge-based systems as a set of definitions of objects and variables in a given field. The relationships between these objects and variables and rules for solving problems/tasks related to the area in which the AI system operates. An appropriate processing procedure (Inference Engine) should be applied to those inputs and rules to draw the necessary conclusions from them that would support advertising design decisions. For their part, the authors of the cited publication define this procedure as "*a set of processes that manipulate the rules and facts based on the knowledge included in the system and the information entered by the user in such a way as to derive a proposal for a solution to the problem*" (Burke *et al.*, 1990, p. 214). This means that, in fact, how the procedure for

processing data in the system works directly depends on two factors: (1) how the summary and introduction of basic knowledge related to advertising action and impact are made, and (2) what rules and processes are set for their processing.

As a major challenge for the operation of such a knowledge-based AI system for advertising solutions, Burke and team see the creation of a knowledge base (data) for the functioning of advertising. In this regard, they point out as a basis the stages in the advertising design process, which they define as (1) defining market goals, (2) developing a marketing strategy to achieve them, (3) defining market segments, (4) choosing communication goals in segments, (5) positioning the brand/product/company in the selected segments, (6) deciding how to communicate positional decisions most effectively, and (7) checking whether the brand/product/company is already or not overtaken in this segment by competitors with similar strategies. If, from our point of view, the process defined by Burke et al. seems quite basic or "textbook", it would be better to imagine what the function of this process is in solving what they consider to be the main challenge in designing a knowledge-based AI system for advertising decision-making.

The AI expert system "knows nothing" about how advertising functions in the processes of marketing decisions and actions, and it is for this reason that it needs to be "trained", for which it is necessary to define very clearly the context of this action. The context, in turn, is formed by the basic understanding of "how marketing works", and it is in this context that the rules of "how advertising works" are learned. The authors of the cited publication are stepping on a solid theoretical foundation in the field of marketing and advertising, trying to solve the task they have set themselves. Building on this basis, they also define the main recommendations that ADCAD should deduce, namely decisions on the selection of – (1) a set of product benefits to be communicated, (2) the identity of the advertising spokesperson, (3) the appropriate advertising format to be used in the specific campaign, and (4) the emotional tone of the advertisement that determines the creative strategy (Burke *et al.*, 1990, p. 214).

The next step in designing ADCAD is to identify key variables. This means defining a full set of categories and values covering the area of advertising. In this regard, Burke and colleagues propose a table of variables and values developed based on their previous studies (Burke *et al.*, 1998), which they claim to fully cover the key areas of influence and functioning of advertising related to the variables mentioned above (1) – (4), adding to them the characteristics of the brand and the product, of competing brands and consumers. On the other hand, the determination of the relationships between the already defined variables is carried out based on the extraction of the ways of measuring the effectiveness of advertising that are found in scientific publications to date, as well as existing advertising models and advertising practices.

Since the theories, according to Burke et al., cannot cover all manifestations in the field of advertising, data from available empirical studies of advertising effectiveness related to consumer reactions to advertising incentives are added to them. The scope includes specific studies of the factors that affect the effectiveness of advertising, such as the size of advertising, advertising appeals, primary colors, etc., and the use of regression analysis is proposed to take into account their contribution to the effect of advertising on consumer reactions (Burke *et al.*, 1990, p. 215). Added to these variables is a set of yes-no recommendations derived from examples of specific campaigns published in the specialized advertising literature. Along with this, opinions and recommendations of advertising experts are included, who also formulate their own set of variables and rules of operation, subsequently added to the array of knowledge feeding the system.

What is the vision of the ADCAD system, according to the design of Burke et al., can be seen in Figure 2.1.

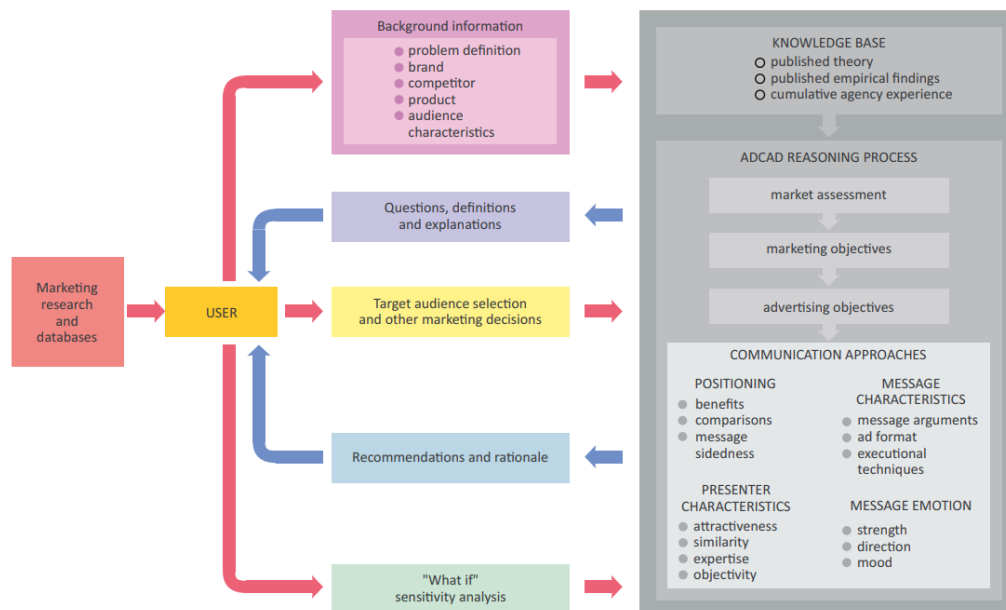


Figure 2.1. Main elements in the process of working in the ADCAD advertising solutions system

Source: (Burke et al., 1990)

Burke et al. point out that ADCAD can work for all brands and products in different product categories under the following restrictive conditions: the first is that it is developed based on current advertising models and theories, as well as existing practices. The second is that ADCAD can be used in a simplified model of consumer reactions to advertising impact, provided that (1) there is a latent need on the part of the consumer to change from his momentary state to another, desirable state, that (2) he sees a product through which he can make such a change, that he is (3) able to distinguish the brand offering the product from its competitors, and that (4) there are no behavioral barriers to the purchase of the desired product (Burke et al., 1990, p. 216).

The functioning of the data is presented in Figure 2.1. Elements of ADCAD are provided by a system of rules describing the achievement of a set of marketing and advertising objectives. Based on the data collected, Burke et al. formulated 11 marketing and 18 advertising rules related to the achievement of these goals, using a conditional analysis (of the "What-if" type), through which they believe that it is possible to determine the change in the final result when different values of variables related to the achievement of marketing and advertising goals change (Figure 2.1.). Once specific objectives have been defined, ADCAD has the task of proposing a set of appropriate communication approaches to achieve them. Since Burke et al. tied the achievement of goals to four main groups of approaches, they formulated, in a similar manner to the one already described, a significant set of rules for choosing a positional strategy (28 rules), message characteristics (80 rules), message author characteristics (20 rules), and the emotional tone of advertising (35 rules).

Without going into unnecessary details about the algorithm of ADCAD operation, we will point out that the system works based on three types of input data entered by the user, related to the characteristics of (1) the segment and the ideal user, (2) the product class and product category, and (3) the brand and its competitors in the market. After processing the three groups of input data using the set of rules described above, ADCAD provides input data for several types of decisions related to the achievement of (1) the marketing goals, (2) the advertising goals, and (3) the communication approach it recommends to use. As a result of the recommendations given, it is possible to select specific advertising solutions related to the positional strategy, the main and supporting message, the tone of the advertisement, and the

emotional impact. Of course, based on these recommendations, the user who enters the input data into ADCAD can change any of the output variables, after which they get a new solution. The logic behind the conceptual principle of ADCAD is the creation of a series of scenarios when one or more of the initial parameters of the outgoing advertising design solution are changed. At the same time, gaining experience from the changes made by the user, ADCAD can generate new rules to include in the provision of subsequent solutions.

Since it is not necessary to present the entire algorithm of ADCAD operation here, it is enough to pay attention to several main reasons why the system falls into the area of our interest. On the one hand, as already stated, this is one of the earliest open attempts to apply AI systems to solve marketing problems in the field of advertising and, in particular, in the design of marketing content. On the other hand, the proposed concept shows what logic and basic principles of work are laid down in specific cases when AI systems offer solutions for creating marketing content. Moreover, the cited article can also be considered one of the first attempts to conceptualize the work of AI in applications affecting creative processes. At the same time, the main merit of Burke et al. in the series of publications reviewed is that they argue the thesis about the limitations of expert systems with AI, despite their undeniable advantages, and offer a solution to a knowledge-based system with AI, which, in addition to quantitative data and formalized procedures, works with qualitative data, adapting and adding new rules through a learning process, based on which it proposes new solutions. Something that is one of the main advantages of the large language models that work today in cases where it comes to creating marketing content.

Such a thesis is advocated by other researchers (Keon, 1991). In his article "A Perspective on Understanding the Power of Expert Systems in Marketing," John Keon argues that marketing solutions require systems that can handle both quantitative and qualitative data, necessitating the use of hybrid systems such as knowledge-based systems. Unlike marketing systems, which operate based on mathematical models that process quantitative data, knowledge-based AI systems, through the use of heuristic programming methods, can offer solutions that other systems cannot provide, he points out (Keon 1991, p. 64).

Other possible proposals for the use of AI systems in the field of advertising are those related to the development of online commerce, and in particular, communication activities in online distribution channels. The potential for the use of AI systems is revealed by optimizing the processes for personalizing ads in online stores by applying the "decision tree" method (Kim *et al.*, 2001) or when personalising ads aimed at driving repeat purchases based on a mapping of behavioural, demographic, and product category data (Viaene *et al.*, 2001). There are opinions about the great opportunities that come with the use of neural networks in AI systems to predict users' reactions to advertising influences (Cui and Wong, 2004). One of the studies on the comparison of the three most commonly used methods in AI systems (artificial neural networks, decision tree, and logistic regression) argues that the increase in their effectiveness in predicting reactions is directly related to the size of customer databases. When it comes to solving complex marketing problems, AI systems perform best when they involve artificial neural network methods, while systems using linear regression perform better than others in larger client databases (Linder, Geier and Kölliker, 2004). However, provided that all three methods are combined within a single AI system, according to the results obtained, the effectiveness of predicting reactions is greater than when using any of the three single options alone, which in turn indicates the presence of a synergistic effect (2004, p. 344).

Based on the several main (among the many related to the topic) publications discussed so far, it is possible to derive a general trend. The cited researchers, pointing out the limitations of AI expert systems in terms of their application to marketing decision-making, discuss the need to derive common rules to determine marketing and advertising decisions. It is these rules that set the marketing context of the solution sought, which, in turn, requires the use of

less formalized mathematical algorithms, mainly because of the need to process both quantitative and qualitative data. At the same time, however, the marketing and advertising rules that determine the processing of different groups of data need to be extracted and used in the machine learning process. The large number of solution options, respectively, requires the use of hybrid methods and heuristic programming (Burke *et al.*, 1990, 1998; Keon, 1991; Boden, 1998; Kim *et al.*, 2001; Viaene *et al.*, 2001; Miami and DeBono, 2007; Bubeck *et al.*, 2023).

Quite expected, the advent of social media, and hence the development of social media marketing, leads to an expansion of the scope of applications of AI systems in the field of marketing (Pearce, 2019). Such are, for example, those related to optimizing the number of steps that users take to reach the information they are looking for on sites (Makris, Siaterlis and Vikatos, 2018). Special attention is paid to the management of contact points (impact zones versus stages) in the digital user journey (Kietzmann, Paschen and Treen, 2018), as well as the commercialisation of technologies related to IoT concepts and virtual assistants (Jones, 2018).

Another big topic related to the use of AI systems is the possibility of personalizing online ads to the individual characteristics of users and their behavior on the web (Deng *et al.*, 2019). Deng *et al.*, based on an experiment conducted with 80 respondents, claim that AI-generated personalized ad formats based on individual user characteristics lead to an increase in the effectiveness of advertising impact, as measured by the number of clicks on personalized ads (2019, p. 356). Based on the study, the authors conclude that the main advantage of the system for generating personalized advertising content (SGPRS) is the ability to include advertising content that corresponds to the current demand of consumers. In this sense, the ability to generate automated advertising content according to the state of users at the time of the advertising exposure is defined as a key competitive advantage that can be achieved by using AI systems. The main idea of this proposal is to use input databases on the digital behavior of users on the Internet (visited sites), their demographics, and other behavioral characteristics, which, based on Sentiment Analysis, personalize the advertising message that specific users see (2019, pp. 359-360). In this way, it offers the potential to increase advertising effectiveness.

Another more important change related to the development of digital marketing is the widespread adoption of the concept of content marketing. Since the term "content marketing", as it is also accepted to be used in Bulgarian, has a very wide scope and is already the subject of our previous developments (Vassileva, Palamarova-Kostova and Ivanov, 2024), here we will only indicate the definition summarized based on the literature review, which defines it as "*a communication approach linked to the creation and management of content through which the organization achieves its strategic and operational goals*" (2024, p. 124). It is argued that the inclusion of social media in organizations' communication mix leads to wider use of narrative strategies by incorporating metanarratives as the core for structuring marketing content in legitimizing new technologies and AI (Bonnin and Alfonso, 2019). This trend is relevant to how the story is structured (Mishra and Kern-Stone, 2023). We pay attention to this fact because the structuring of marketing and advertising content, both in its generation and in its creation, is subject to the structures of archetypal stories or scenarios that must be taken into account in the design choice. If professionals who create marketing content use in their work as advertising incentives constructions typical of the human narrative as metaphors (Ang and Lim, 2006) and stereotypes (Miami and DeBono, 2007), then these incentives need to be included in the context of marketing theories, expertise, and empirical data driving the generation of marketing content through AI tools. Which undoubtedly increases the number of variables and rules required to generate marketing content from AI.

In recent years, the development of AI has been taking place at such a rapid pace that it is not uncommon for AI tools to be used in the training of students in marketing and advertising programs (Yang, 2023). According to Yang, future professionals should be prepared to use these tools in planning and designing such campaigns, including advertising content. In this regard, ethical issues are discussed, such as the possibility of inserting unethical information into the generated advertisements (Huh, Nelson and Russell, 2023).

Another major area, in addition to sales and advertising solutions, in which the prospects for the use of AI systems are discussed, is market research (Brooks, 1989; Morgan and Bond, 1989). From the outset, the advantages of AI expert systems as intelligent tools for analyzing consumer choices and purchasing decision patterns have been highlighted (Ville, 1997; Hu, Shanker and Hung, 1999). In this direction, the advantages of using AI systems for profiling market segments and audiences are also discussed, thanks to access to databases of individual consumer behavior on the Internet (Boone and Roehm, 2002). Specific advantages of using them in quantitative studies in terms of the accuracy of results in smaller samples in the application of multivariate statistical methods are indicated (Sebban, Nock and Lallich, 2003) and qualitative surveys, such as the possibilities of increasing the number of participants in focus groups without hindering the effective collection of qualitative data (Easton, Easton and Belch, 2003).

In recent years, the possibilities of using artificially generated samples (also defined as silicon samples or synthetic datasets) in marketing research have been discussed (Sarstedt *et al.*, 2024). Sarsdet *et al.* argue that AI-generated "artificial samples" can support the initial stages of research, especially concerning the formulation of the program and, in particular, the initial testing of research hypotheses before leading the main study. According to them, this is extremely important in the initial design of the research tool, but at the same time, they also argue for the possibility that these AI-generated samples can be used in the framework of the main study, pointing out, of course, the ethical issues associated with such an approach. It can be pointed out that such an approach is directly related to the already discussed in the first chapter of the characteristics of AI for simulating human behavior, and from this idea of simulating the behavior of a whole sample of users, there is only one step, which goes through the expanding capabilities of AI systems, dictated by the development of neural networks and machine learning. In this regard, Sarsdet *et al.* recommend the use of AI tools in two main areas – (1) in pretests of research tools and pilot studies for the creation of measurement scales, visual stimuli, etc. and (2) in the framework of the main study to test and adapt analytical procedures, reduce costs and time for fieldwork, etc., paying particular attention to the limitations of using such an approach as regards the differences obtained from generated and actual samples (Sarstedt *et al.*, 2024, pp. 1264-1266).

In summary, several main trends related to the initial stages of the use of AI in the field of marketing can be deduced. Most likely, since the initial focus in the development of AI falls mainly on the creation and adaptation of different AI expert systems (Figure 1.1) to various narrow areas, at the beginning of the period considered, the most common systems are those supporting marketing decisions. At the same time, the capabilities for processing large databases and testing various scenarios in real-time determine the motivation for their use in all other areas where marketing processes are optimized – from personalization of offers in online distribution channels, to personalization of marketing content, which is carried out through the collection and analysis of large data sets, related to the first sales made, and then – to the digital traces that users leave when browsing the web. Another characteristic feature is that AI systems are seen as an important assistant in supporting the activities of specialists in creating content. On the one hand, these are ideas that can be generated at a speed at which the human brain can't process and extract general trends from large data sets. On the other hand, due to the exceptional ability of AI systems to generate a huge amount of content

variants or action scenarios. It is in connection with this that the next question can be raised, which is of particular importance to us – since AI systems are able (with a certain degree of conventionality) to simulate human reactions and behavioral patterns, are they able to simulate more complex processes than, say, a decision to make a purchase or choose a trademark, such as the creative ones. This is also the main issue that is addressed in the next paragraph.

2.2. Opportunities to simulate creative thinking processes through generative AI tools

In his seminal work "Critique of Practical Reason", Kant emphasizes the study of reason through "*the search for the principles of metaphysical knowledge of nature and ... Defining the Basic Principles of the Metaphysical Knowledge of Morality as a Guide to Human Behavior*" (Kant, 1974, p. 1). We can use a reference like this here as an attempt to illustrate the seeming impossibility of looking for "creative urges" in an AI content generation tool subject to set rules and processes, as well as self-learning algorithms. In other words, the main issue we are addressing here has to do with the "creativity" of generative AI (genAI), or rather *the possibilities with this tool to create marketing content adequate to the goals of the campaign*.

From the question posed in this way, of course, we cannot help but return to the "human-machine" opposition discussed in the first chapter, because, from the point of view of the present study, there are two possible starting positions for distinguishing between generated and created content. The first is to contrast human-generated content with that generated by the genAI. The second is to compare created and generated marketing content in terms of the impact it has, as well as the extent to which the goals set for its use are achieved. And if we deal with the practical solutions to such a question mainly in Chapter Three, before we start looking at it, it is necessary to attempt to define creativity as part of creative processes, because, in marketing and advertising practice, the creation of such content is primarily the result of creative processes.

There is one more thing that needs to be clarified in this direction. *The creative process*, which falls into the field of our interest, is *considered* here only *as part of the processes of creating marketing content*, and not as an end in itself, in an attempt to look into the hard-to-define forces that drive the creative nature to create a work of art, a scientific theory, a discovery, or an engineering solution. In this sense, for us, ***the creative process can be reduced to making specific decisions within the marketing context of the content being created, which should serve the achievement of marketing and advertising goals and objectives. We consider creativity*** as an inherent *quality or ability of the creators of this content* to come up with options that, at the moment and in this particular marketing context, have not been encountered, or at least not in exactly this form and in such a way, a combination of the elements used in them.

Before we start looking at these two elements of marketing content creation, however, it would be good to clarify a few basic concepts related to AI and distinguish them from each other as much as possible. Here we are talking about the already considered "AI systems" or AIS, the repeatedly mentioned "generative AI" (*genAI* from *Generative Artificial Intelligence*), as well as "Artificial General Intelligence" (*AGI*). The reason we do this only in this part of this work is rooted in the initially adopted historical approach of exposing and commenting on the available scientific information with the idea of following the natural evolution of ideas, which is reflected both in the concepts used and in the context in which they occur in the scientific literature.

GAI (*General AI*) is defined as the next generation of AI that has similar or greater capabilities than humans in solving a wide range of cognitive tasks (McLean *et al.*, 2023). In contrast to the widespread 'limited AI' (*ANI* from *Artificial Narrow Intelligence*) or ANIs,

such as the 'AI expert systems', voice assistants used by Amazon and Apple, or the autonomous driving systems of Tesla and Uber as repeatedly discussed in Chapter 1 (Kaplan and Haenlein, 2019), the purpose of SGIs goes beyond the narrow areas of applications of these AI tools and can perform complex tasks in many different environments, which in turn leads to the emergence of new social, psychological, economic and technological risks (McLean *et al.*, 2023). Since the GAI is still in the stage of developing concepts and possible technical solutions, and in this sense, it is a question related to the future of the development of AI technologies, we will not deal with it here, although they define the latest OpenAI chatbot as the initial step towards the creation of an GAI (Dupré, 2023) or rather as an early but unfinished version of the SGIs (Bubeck *et al.*, 2023). However, as the subject of this study is the specific capabilities of the genAI at the moment to generate marketing content, we will leave the questions related to the future development of the SGI for further studies.

GenAI is based on technologies working with large amounts of data, collected and analysed by AI, that produce media content – text, images, video, and other formats – as a result of user-input data (*prompts*) in the form of specific questions or assignments (Jovanovic and Campbell, 2022; Islam and Greenwood, 2024; Lecocq *et al.*, 2024). Since, however, here we are not so much interested in *the Generation Process* of marketing content as much as in *the possibilities of use* of the genAI to generate one, at this stage, it is enough only to try to distinguish the genAI from the other UIIs. In this sense, we use the term SIS here as a generalization for all computer programs that use AI in their work – an issue that is discussed in detail in Chapter One. In this direction, it is important to recall the already discussed specifics of AI expert systems and the differences in knowledge-based AI systems (Burke *et al.*, 1990), which can be defined as conceptualizing the idea and algorithms of using AI-based large language models to generate content. If it is necessary to recall what falls within the zone of our interest, these are precisely *the possibilities for generating content in the context of theories, models, empirical data from already caANied out studies and expert assessments in the field of marketing and advertising, which, by deriving new rules based on already proposed solutions and user reactions, can refine the proposals made by offering new content that is more in line with the task set.* Or, if we have to present in a simplified version this somewhat complex definition, the capabilities of the genAI to offer marketing content that can be used, given the goals defined by the user, and to achieve the result they are looking for.

Here, it would be good to specify the area of interest with one specific example. Let's imagine that we want to check whether a photographic image generated by the genAI would achieve a higher degree of efficiency in a Facebook post, which would lead to new links to an online store compared to a photograph taken by a professional photographer. The process of generating variations for the image sought, although developed both conceptually (Goodfellow, Ian; Pouget-Abadie, Jean; Mirza, Mehdi; Xu, Bing; Warde-Farley, David; Ozair, Sherjil; Courville, Aaron; Bengio, 2014) and at a practical level, falls within the realm of other scientific fields and will therefore not be considered here. In this sense, being mainly interested in the final result, to achieve the objectives of our study, we should rather test the reactions of audiences to these two types of images, which would allow us to compare the effects of generated and created content. However, the objectives of the review include the study of the principles of creating this image, to have a clear idea of what the starting points for comparison between the results of creative processes and those of the content variants generated by the genAI are. This is of particular importance because, as we have already pointed out at the beginning of the paragraph, marketing content is neither created nor generated as an end in itself, but only as a result of specific assignments – either to a specialist in Marketing or to genAI, moreover, to fulfill clearly defined marketing, advertising, or communication goals and tasks.

As mentioned above, the focus of our research interest is mainly on the *results of genAI* and not on the *processes of* generating marketing content through genAI. With such a distinction, we come to creativity related to creative processes, and in particular to the question of whether genAI programs can stimulate human creativity or not. Referring to the "thinking" of AI and adopting the thesis that the leading idea is not whether machines can or cannot be defined as intelligent, but whether they can simulate the processes characteristic of human intelligence, as far as creativity is concerned, it makes sense to use the same approach here. That is, the question is whether and to what extent genAI tools can simulate human creativity processes, or rather, to what extent we can assume that genAI-generated marketing content can achieve a similar result to human-generated creative marketing content.

There are different opinions and definitions of the concept of creativity. Although in this text we are interested not so much in its broad meaning, which refers to creativity in general, but in its narrow meaning, defined by the field of this study (creativity as part of the processes of creating marketing content), we cannot help but start by trying to define the concept of creativity in a general way. Since it is related to the work of specialists from different fields – from people who are engaged in art, through pedagogical professions, to economics, engineering, and exact sciences, it would be unthinkable to investigate the different aspects of the type of search and finding solutions in all these areas within the framework of a specific study dedicated to the possible differences in the use of created and generated marketing content.

In the scientific literature, the opinion is advocated that the conceptualization and study of creativity began with the work of two psychologists who published in the early fifties and sixties of the last century - Guilford and Torrance (Sternberg, 2006). Based on research on creative processes in children and young people, Guilford identifies, as a major problem, at least as far as psychological studies are concerned, how to detect and test creativity (Guilford, 1950). In his publication, he proposed a concept for measuring creative skills, based on data from previous studies, managing to isolate through the use of factor analysis four hidden groups of factors, or characteristics of creativity - (1) originality (*originality*) (2) ease of expression (*fluency*), (3) resourcefulness (*flexibility*) and (4) the ability to work out the details (*elaboration*). Another approach to defining creativity is related to the empirical study of specific reactions of scientists and artists through various qualitative and experimental techniques (Barron, 1958), which confirm Guilford's generalizations. It should also be pointed out that in his research, Guilford argued that creative talent is not directly related to the level of intelligence of individuals (Guilford, 1950, p. 444), and in this sense, it refers to other processes.

Building on these and other previous studies, Torrance explores and compares creative thinking in children, adolescents, and adults, emphasizing its manifestations in extreme conditions (Torrance, 1966). Based on his research work, he published two years later, perhaps the most widely used in psychological research (Sternberg, 2006, p. 74) Creative Thinking Test (Wallach and Torrance, 1968). Through this test, Torrance defined five main areas for evaluating creativity (1968, p. 3):

- Ease of expression/finding a solution (*fluency*) – evaluated based on the given total number of answers suitable for the task.
- Originality – the ratio between the "banal" or common answers and those that are less common and not typical for the topic under study is assessed.
- The abstractness of *titles* – the ability to synthesize and organize thought processes and the possibilities for insight into the topic under study are assessed.
- *Elaboration* – the imagination is evaluated through the ability to highlight the details and thus the ability to cover different aspects of the topic under study.

- Resistance to *premature closure* – assesses the ability of the solution search process not to be completed until the optimal solution is found based on the context of the information given.

Of all these areas, Torrance identifies the first as the most important because all other test scores, he argues, are a function of the ability to give either an appropriate or inappropriate answer (1968, p. 3). Within these five zones, a scale of thirteen variables is set in the test, through which creativity is assessed. These are (1) emotional expression, (2) the ability to structure a narrative/plot/story, (3) the speed of finding associative solutions, (4) the ability to generalize and find the essential, (5) the ability to complete incomplete ideas or images with missing information, (6) synthesizing and combining new ideas from the given elements, (7) the ability to see things in a new way/new point of view, (8) the discovery of internal connections, (9) the ability to capture moods, (10) the ability to search long enough for solutions that are not obvious, (11) the richness of imagination, (12) the ability to sense perception and (13) fantasy.

It should be noted that the Torrance test is conducted in two parts and includes studies of reactions to verbal and visual stimuli, and it was developed to determine the level of creative abilities of students. In this sense, it can hardly be applied to research either at the levels or, rather, at the extent to which genAI can simulate creative processes in generating marketing content. The reason we consider it here is not only in its widespread use to define creativity in people, but also as a theoretical framework based on which it is possible to define creativity as part of the process of creating marketing content through pre-formulated criteria and variables. In other words, to have some kind of starting point when we have to determine whether marketing content is creative or not. In this sense, the variables from the Torrance test (1), (11), (12), and (13) can be attributed to human nature rather than (yet) to the capabilities of genAI algorithms for content creation. At the same time, (5) can be attributed to the already commented tendency of AI to "hallucinate", filling in the missing links in the information detected by the algorithm with information that does not exist. As for the other group of variables in the Torrance test – (2), (3), (4), (6), (7), and (8), the literature review made so far shows that they can deduce key capabilities of AI to process and synthesize information, simulating a human way of thinking/making when generating content (based on such characteristics). Concerning (9), the already commented examples of AI systems that tend to simulate human emotions can be cited, and about (10), one can comment on the dialogic mode of working with the genAI, in which new solutions are proposed, until one that best meets the criteria of the assignor.

Since the approach to defining and measuring creativity discussed so far is psychometric, and we have already pointed out that the ideas of attributing human characteristics and qualities to AI are not relevant to the rational perception of the world and the phenomena in it, it seems necessary to answer the question of what of the above can be used to define creativity as part of the creative process in generating marketing content. In this regard, Sternberg proposes a different approach to defining creativity, which he ties to his own "investment theory of creativity" or *The Investment Theory of Creativity* (Sternberg, 2006, p. 87). In general, this theory rests on the idea that creativity is related to the ability to discover ideas that are not common but have great potential. This theory is based on some skills that can be explored through the Torrance test, especially when it comes to the ability to detect hidden connections between facts in the available information, presenting them through new and original points of view in an attractive way, and this can already be applied to the processes of generating marketing content.

In the field of AI research, the question of whether or not it has creativity has been debated for more than a quarter of a century (Boden, 1998). One of the theses advocated is that "*AI can be creative insofar as the most general definition of creativity is giving new*

answers, solutions, suggestions on given problems and/or topics" (Sulov, 2023, p. 75). According to other authors, although AI systems have already automated the process of managing advertising exposures, the creative process of generating them still requires human effort at the moment, but, in support of the above, they point out their belief that automating creativity based on big data and AI machine learning is only a matter of time (Chen *et al.*, 2019:347). In support of such a thesis, it is enough to recall the case of the IBM Watson supercomputer discussed in the first chapter, which is based on an AI system (Figure 1.1.), which, in addition to winning \$1,000,000 playing against winners of a popular TV quiz, was trained for three months by a team of the advertising agency Saatchi and Saatchi and ended up creating personalized advertising text for the presentation of a new Toyota car (Kinsell, 2017). Of course, a separate question is whether the "success" in creating personalized marketing content is the result of training and self-learning of an AI system until it "manages" to generate a satisfying result, or whether it is the result of simulating creative processes. A question that again brings us back to the idea of AI autonomy discussed in Chapter One.

If we look again at Margaret Boden's book *Creativity and Artificial Intelligence*, we can see that she defines creativity as a process that is based on "*abilities such as association of ideas, recall, perception, illogical thinking, search for connections between problem and context, and critical evaluations of what has been done*" (Boden, 1998, p. 347). In this regard, Boden distinguishes between two dimensions of creativity: (1) cognitive, which involves the generation of new ideas, and (2) motivational and emotional, related to cultural context and personality factors. According to her, the existing models of AI creativity focus mainly on the first dimension. She specifies that when talking about new ideas, there are two possibilities – either the idea is new to the person or, in this case, to the UIC, or is fundamentally new. The clarification is especially important because it raises the question of what available information the idea was generated or created from, which can be defined as new or not. For his part, Boden defines two types of creativity, which he calls P-creativity (P from psychological) and I-creativity (I from historical), pointing out that when we talk about the creativity of AIS, we must consider P-creativity. Tying creativity mainly to the ability to generate new ideas, Boden defined three main types. These are:

- combinatorial creativity – or the ability to come up with a new combination of already existing elements or familiar ideas (*combinational creativity*);
- analytical creativity – the ability to arrive at a new idea by exploring the context of the solution to be proposed (*exploratory*), in this sense, the solution is unexpected rather than fundamentally new;
- transformative creativity – the ability to combine different contexts in a way that leads to the emergence of a new context of the desired solution (*transformational*), creating fundamentally new structures or contexts in this type of decision.

Boden points out that the second and third types of creativity often flow into each other, which makes the boundaries between them difficult to define, and in this sense, they can be part of the same common process of generating new ideas. As an example, she points to the work of professional scientists, artists, and jazz musicians who arrive at new ideas conditioned by the school or style to which they belong, but at the same time by creating new works either within the style or by creating a new style of their own (a new structure in Boden's terminology (Boden, 1988, pp. 348-349). She points out that computer models through which creative processes are simulated contain all three types; however, the second type is the easiest to apply (Boden, 1988, p. 349). That's so, she says, because there are still difficulties in simulating the richness of human associative memory, as well as identifying human values that can be expressed through computational procedures. The main obstacles to simulating human creativity in creative processes – a possibility that Boden does not deny, but on the contrary – relate to (1) the lack of experience in the field necessary to map the conceptual

space to be explored and/or transformed, and (2) the difficulty of carrying out a self-assessment of the results obtained. Concerning (2), Boden points out that similar experiments can be seen in genAI embedded both in their algorithms and through interaction with the task introducer (Boden, 1988, p. 355).

In their commentary on the generalized definition of creativity, Mark Runco and Gareth Jagger point out that it has two main characteristics – originality and efficiency, the latter, they point out, is of utmost importance, because creative ideas must also bring value, at least as far as their economic interpretation is concerned (Runco and Jaeger, 2012, p. 92). According to Greeley and Pedota, however, such characteristics are typical only of human thinking (Grilli and Pedota, 2024). Based on Heaven and Collective's definition of AI, AI is primarily defined as the ability of machines to perform cognitive functions such as "*perceiving, reasoning, learning, interacting with the environment, solving problems, making decisions, and even demonstrating creativity*" (Rai, Constantinides and Sarker, 2019, p. iii), they point out that in recent years, with the advent of deep learning technologies, the UIS has been "*Gifted*" with creative abilities, such as the ability to write short stories or compose symphonic music (2024:234). This statement is also supported by Teresa Amabile, according to whom the creativity of AI can be defined as the "*production of new and relevant ideas and solutions*" (Amabile, 2020, p. 351).

Interesting in this direction is the study by Amin et al., who, based on a literature review of 156 publications published between 1990 and 2021, explored the role of creativity in marketing through the prism of the possibilities of its automation through AI (Ameen *et al.*, 2022). In their post, they typologize the key skills that are associated with creativity in marketing and the impact of AI on these skills. Without going into the area of the study of people's cognitive skills, we will point out here that Amin et al. summarized the following seven areas of application of creativity in marketing – (1) advertising, (2) new product design, (3) graphic brand identity, (4) service design, (5) sales enablement, (6) application of marketing strategies, and (7) online marketing (Ameen *et al.*, 2022, p. 1811). In this regard, they also identify the following areas where AI can support the creativity of professionals – (1) generating market insights, (2) personalized recommendations, (3) personalized advertising, (4) automated bidding, (5) customer service, (6) experiential marketing, (7) branding, (8) sales forecasting, (9) market research, (10) segmentation, (11) targeting, and (12) positioning. It is noteworthy that these twelve zones encompass almost all the tools used by modern marketing. From this, it becomes clear that when studying the role of creativity in marketing, it is considered in a broad sense from the point of view of the creation of *all* new and non-traditional marketing tools, strategies, and concepts, and not in the narrow sense limited by the creative process to create marketing content.

Table 2.1.

Typology of AI Skills Required and Their Application

<i>Type of AI</i>	<i>Opportunities</i>	<i>Key Skills</i>		<i>Marketing Apps</i>
		<i>Cognitive</i>	<i>Emotional</i>	
<i>Limited by AI</i>	The application is only available in limited areas. It cannot make decisions autonomously; It can perform some functions of people in specific areas.	Learning; Processing of large data sets; Intelligence.	N/a	Customer service; Studies; Sales stimulation; Analysis of user data; Segmentation, targeting, positioning; Personal bidding;

				Campaign management...
<i>General AI</i>	It is applied in more areas. It can make autonomous decisions in some areas. It can replace people in certain areas.	Problem-solving; Thinking; Planning; Decision-making; Remembering.	N/a	Generation of marketing content according to preliminary assignments; Automated planning of marketing strategies...
<i>Super AI</i>	It is applied in all areas. It can make autonomous decisions in the areas where it is applied. It can replace human activity in all areas.	Complex cognitive skills; Generating ideas; Persuasion.	Empathy Emotions Emotional intelligence	Personalized contact with individual and organizational clients; Automated MM management; Negotiating and closing deals...

Source: adapted from (Ameen et al., 2022:1814)

In the cited study, the authors group AI into three main types – AGI, AGI, and super AI (Table 2.1). Since we defined the first two concepts at the beginning of this paragraph, we will not dwell on them now. As for the last one – super AI, Amin et al. define it as an AI that has higher levels of intelligence than humans. What AI can have in marketing practice, as well as the different skills it should have. In the cited publication, the authors point out that it is difficult to talk about AI creativity in AI since the operations performed have only a partial or no degree of autonomy, and in this sense, creative processes are carried out under the control of and through directing actions by humans (Ameen et al., 2022, p. 1814). At the same time, they also discuss the inability of EIGs to assess the value of new ideas generated, especially when it comes to interpreting their cultural and social context. As the main reason for this, it is pointed out that the AGI can only handle repetitive tasks, which, of course, facilitates people's activities and allows them to focus on the "human aspects" of their work (Ameen et al., 2022, p. 1815), such as creative processes.

Recall that in their publication, Amin and team consider the creative process as inherent in the entire range of marketing activities within the organization and do not reduce it only to the creation of marketing content. In this context, they define IOI as systems that can "act and think" like human beings, but at the speed of the fastest computer systems (Ameen et al., 2022, p. 1815). In doing so, they attribute to them the presence of a "full set of cognitive skills" – which, they say, is a necessary and sufficient condition to be able to simulate creativity in all marketing processes and operations. However, since the authors consider creativity as a function of emotional states, they point out that such can only be fully discussed in a hypothetical super AI.

Similar opinions are found in other publications. In their study, Jia and team point out that AI creativity can currently be considered within the framework of human-AI collaboration in the form of dividing creative tasks into separate stages (Jia et al., 2024). They discuss the capabilities of AI systems to perform functions such as processing large amounts of data and performing repetitive actions, while employees can focus on the next parts of the

process related to solving problems at a higher level. Based on an experiment and subsequent studies using qualitative techniques, Gia et al. found that the use of AI tools increases the creativity of highly qualified employees, while for lower-skilled employees, it leads to negative emotions that limit their creativity. It should be clarified that the conclusions reached consider the role of AI in enhancing human creativity, without attributing similar qualities to AI, and thus focus attention on the symbiotic relationship "human – AI" within the framework of creative processes in marketing activities.

Such a point of view, albeit with arguments outside the field of marketing, is also advocated by Reddy, who considers the symbiotic "AI-human" relationship, defined as interaction and dialogue leading to "*Artificial creativity*" (Reddy, 2022), according to which this type of creativity is the result of human activity facilitated by AI. Of course, several other publications can be found in which the role of AI in the creative process is perceived as complementary or stimulating human creativity. Such an opinion, for example, is advocated by Hoffman et al., for whom creativity is a characteristic of human nature, while AI complements human intuition in this process through the ability to process large amounts of data and, in this sense, increase overall marketing effectiveness (Hoffmann, Kanbach and Wykes-Sneyd, 2023, p. 16). Summarizing the in-depth interviews conducted with marketing managers, the authors argue that at this stage, too little attention is still paid to the possibilities of generating advertising messages through AI. However, they believe that AI is not able to replace human creativity. This brings us back to the idea of supporting AI functions in the process of creating marketing content (Hoffmann, Kanbach and Wykes-Sneyd, 2023, pp. 18-19). Here, we refer to the creative processes that are associated with the performance of monotonous and repetitive actions (Bruns and Long Lingo, 2024). According to the authors, if these processes are delegated to AI, creativity in humans can be stimulated. This is because people can then focus on the more important, creative aspects of finding solutions or creating content.

So, the question of whether AI possesses creativity or not can be considered in two main sections. The first has to do with the extent to which we tend to attribute human qualities or characteristics to AI. In this sense, the answer to such a question would be negative, since there is no way to equate AI systems with humans and, respectively, look for the same qualities in both entities. The second section, however, requires first focusing on the concept of behavior, considered as a sequence of actions that (1) are related to each other, bound by causal relationships, and (2) are conditioned by rational and/or emotional motives, while at the same time (3) pursuing the achievement of a specific, predetermined goal. Assuming such a general structure of behavior, of course, we come to the question of whether we can talk about AI behavior at all or not.

This question has also, we hope, already been answered in the literature review made so far. In general, here we perceive the concept of AI not as a separate entity endowed with the ability to think, but as a system that can simulate the process of thinking, breaking it down into separate steps (stages) and following an algorithm built through cause-and-effect relationships between these stages, applying different scenarios. This means that AI can simulate human behavior, but only partially, mainly due to the inability to include the emotional motives that determine some of the motives for such behavior. From here, coming to the question of creativity, we can say that AI systems should be able to simulate creative processes in which emotional and personal motivations characteristic of humans are excluded. On the other hand, however, the considered symbiotic relationship "human – AI" and in particular the ways of working with AI systems, allows the introduction of variables into the creative process that simulate both internal and external motivation for the creation of, let's call it conditionally, the creative product.

In this regard, as is clear from the review, in the scientific literature, there are two points of view. According to the first, AI systems can simulate creative processes, and this can be done either after extensive training/self-learning within a specific task until a satisfactory option is reached, or, provided that in some future period, the concept of super AI becomes a reality. The second view is that AI can only be part of creative processes within the symbiotic human-AI relationship. The most widely advocated thesis is that AI is possible to participate in the initial stages of creative processes by performing monotonous and repetitive actions so that humans can focus on higher-order creative stages. In this sense, the question arises whether, since it is part of the creative process, AI can be attributed to some degree of characteristics related to creativity or not.

Here we come again to the definition of the very concept of creativity, considered as *the ability to search for and reach a new or non-traditional solution, or, respectively, to new content*. We will also recall the second characteristic of the creative process commented on in the review – in addition to reaching a new or non-traditional idea, this idea must have some value and, in this sense, support the realization of the set goals in an effective way. Efficiency has been dealt with in our other works; we will only point out that it is defined as the degree to which the goals set in advance have been achieved (Ivanov, 2021, p. 38). In this sense, when we talk about the realization of the set goals in an "effective way", we mean to what extent the marketing content achieves the goals for which it was generated or created.

Starting from such a position, we can specify that the angle from which we look at creativity in AI focuses on the final result of the creative process, or the effects that the marketing content created or generated through it can lead to. Assuming that the generated content achieves marketing or advertising objectives to a higher degree than the created content, it can be argued that the degree of creativity of the simulated creative process is higher than that carried out by a specialist, other things being equal, and vice versa. Thus, we are not looking for an answer to the question of whether AI systems have creativity or not, but we focus on a more important question – within the process of creating advertising or marketing content, through which of the options better results can be achieved – by generating this content with AI tools or by trusting specialists, who create such content. In this way, we would also be able to indirectly compare the creativity of AI systems and humans in terms of the value of creative products (including advertising and marketing content) resulting from such processes.

An interesting approach to defining creativity in advertising is proposed by Varkatzas and Wang, stepping on the theoretical framework of Margaret Boden (Vakratsas and Wang, 2020), discussed at the beginning of this paragraph. They take creative ideas or artifacts as objects that can be located in a conceptual space in which a set of rules operate (Vakratsas and Wang, 2020, p. 40). Viewed in this way, new ideas or artifacts can be generated through algorithmic procedures, which in turn opens up opportunities for the use of a systematic approach in creative processes. They argue that it is not only Boden's combinatorial creativity that allows the generation (rather than the creation) of new ideas, but also the other two types that she defines – transformational and analytical. In them, new conceptual spaces are created by transforming existing ones – processes that are conditioned by a different set of rules, and this shows that there is no obstacle to generating new ideas or artifacts within new contexts. Based on such a theoretical framework, Vakratsas and Wang advocate that creativity has a generative nature (Vakratsas and Wang, 2020, p. 9). This, in turn, opens the door to exploring the wide possibilities associated with the use of AI to generate marketing and advertising content – the subject of the next paragraph.

2.3. Applications of generative AI tools in the field of advertising production

The use of genAI in the field of advertising, and in particular in the field of advertising creativity, can be described as a "hot topic" in the last two years, especially as genAI tools become freely available to audiences of professionals and non-specialists. Opinions are expressed that after the official launch of ChatGPT in November 2022 and the subsequent changes in search engines with the inclusion of AI in search processes, all spheres of public and social life have been affected, but to the greatest extent, this concerns the field of advertising (Huh, Nelson and Russell, 2023). Moreover, there is a debate about whether the entry of genAI into the field of advertising creativity and easy access for everyone will put an end to human-generated ads, as the generated ad formats achieve a higher degree of efficiency (Singolda and Heitmann, 2024). In Mark Heitman's interview, Adam Singolda, founder of one of the first global advertising agencies to start using genAI in their practice (Taboola, no date), points out that the biggest advantage of GI tools lies in the ability for people to perform complex actions on their own and get good results without actually knowing the basic principles. that are behind the design of specific advertising campaigns or tools (Singolda and Heitmann, 2024, p. 60).

Whether this reflects reality or is a matter of the future is a separate question. However, Singolda points out that the processes are similar to those in which algorithms automate the personalization of advertising content and online product bidding, and it is only a matter of time and the accumulation of data and experience on the part of genAI for these processes to be visible in the field of advertising creation (Singolda and Heitmann, 2024, p. 58). In any case, however, the entry of genAI into the field of advertising is drastically changing the advertising industry and the processes of creating marketing content. In their publication, Ha, Nelson and Russell identify a total of four areas of advertising practices that AI is fundamentally changing and that open up new opportunities and the need for future research. These are (1) the user experience of advertising exposures, (2) the social and political consequences associated with the authenticity of the generated content, (3) the analytical understanding of working with data and algorithms, and (4) the functioning of the advertising industry as a whole (Huh, Nelson and Russell, 2023, p. 478). The changes that the authors discuss are related to:

(1) the use of chatbots, virtual influencers, and spokespeople of organizations – practices that are becoming more and more popular every day.

(2) the risks associated with the generation of false advertising content that is freely distributed online, as well as with the propensity to 'hallucinate' AI already discussed in the previous chapter, and in general, with the reformulation of ethical issues in the field of the creation and distribution of this type of content.

(3) the lack of transparency of how the algorithms collect, process, and store data related to user characteristics and behaviour and the issues this raises, such as the protection of personal data, the disregard for cultural and social contexts, and the discrediting of vulnerable or minority groups.

(4) Despite fears that, just as the EIG "lays out" some of the specialists involved in automated marketing operations, opinions are expressed that the entry of genAI into the advertising industry should not affect the creative professions, which are currently insulated from this type of negative impact. For example, processes in the opposite direction are registered, related to the opening of new positions for specialists who need to work with genAI tools. In this regard, it is pointed out that the advertising industry perceives AI as a means of improving performance, generating new ideas, developing preliminary scenarios for advertising campaigns, and refining ad personalization (Li, 2019). At the same time, however, the facilitated development of advertising and marketing content, without the presence of specialized knowledge and skills, raises concerns about the future of creative processes in

advertising (Li, 2023, p. 480) and raises the question of where exactly the place of man is in them.

About this issue, however, it should be clarified that there are opinions that define the role of the genAI as a "virtual assistant" for specialists engaged in the creative processes of the creation of advertising content (Bailly, 2023). The assignment of such a role to the genAI coincides with two of the main theses considered so far – that the use of AI within the creative process "saves" people from monotonous actions in the initial stages, as well as that it increases the effectiveness of advertising in general and the processes of its creation in particular. An interesting experiment to test the thesis of better efficiency of AI-generated advertising content is conducted by Hungarian researcher Zoltán Somozi. He used two similar ads on the Google Display Network, one created by a marketer and a professional photographer, and the other generated by genAI (Somosi, 2022). The purpose of the experiment was to compare the performance, effectiveness, and impact of the content of created and generated advertising within the same audience, market goals, and settings of Google campaigns.

The conclusions reached by Somozi after evaluating the results of the two parallel campaigns are that the created and generated ads achieve similar results with some negligible deviations in the values of the indicators. The only significant difference that Somozi found is in determining the ROI of the two campaigns, which is quite expected, because of the "zero" budget for generating the advertising content, compared to the budget for the production of what was created. This, however controversial, allows the conclusion to be formulated that the use of genAI in the design and production of advertising materials leads to positive business effects (Somosi, 2022, p. 254). Of course, as a counterargument to such a statement, we can point out our understanding that there are no "zero budgets" for the production of marketing and advertising materials, at least because the time spent by the specialist or specialists to work with the genAI, as well as the experience and expertise they have, must also be valued and included as a variable in the calculation of the ROI of the marketing campaign.

In any case, however, it can be argued that such alternative approaches to creating advertising content have the potential and give rise to the need to be explored. There are some (still) opinions that the use of genAI can revolutionize the processes of creating marketing content (Heitmann, 2024). Mark Heitman commented on the relationship between the quantity and quality of the created marketing content in the processes of individualizing ads. He argues that the more content that needs to be created, the lower its quality becomes (Heitman, 2024, p. 12). According to him, it is in this direction that the benefits of using genAI in creative advertising processes should be sought, where he also sees a high potential for developing and improving the quality and effectiveness of advertising.

In support of such a thesis, Google's requests at the end of 2023 for the use of genAI in advertising models can be cited, commenting on the possibilities for the creative content provided by advertisers (images, video, and text) to be used as a basis for generating AI advertising content, which can be distributed to the target audience in fulfillment of pre-formulated marketing and advertising goals (Reuters, 2023). This can also be interpreted as a step towards the search for relative autonomy of AI to simulate creative processes. As well as future changes in the organization of SEO practices and strategies for generating traffic through search engines (Hutchinson, 2024) and in how advertising content is perceived by consumers (Kumar, 2024).

Such optimism related to the use of genAI in the advertising industry, and in particular, focused on the effects of generating advertising and marketing content, is not shared by all researchers. There are also opinions that the use of AI-generated marketing content by a brand negatively affects the attitude towards it (Sands, Demsar, *et al.*, 2024). The cited study by

Sands et al. touches on a specific niche – namely, the use of AI-generated advertising characters, which brands turn into part of advertising content to position themselves in socially vulnerable groups or groups with different sexual orientations. In four separate studies, the researchers found that these two specific segments negatively perceive the generated advertising characters precisely because of how they overexpose the cultural and social characteristics and characteristics of the audiences to which they belong. At the same time, however, it is pointed out that consumers perceive such practices as a threat to their own identity, and this negatively reflects on brand perceptions. Although the object of our study does not include, let's call them, niche segments, such findings need to be paid attention to, as they show different aspects of the application of genAI in the generation of marketing and advertising content.

Despite the generally positive attitude towards brands that include tolerance for diversity in their positioning strategies, the negative reactions of users could be interpreted through the already commented difficulties for AI to take into account the specifics of the cultural and social context in which marketing content is created. In this regard, it is enough just to mention the fierce debate that arose after it became clear that Google's Gemini genAI in the generation of historical figures shows Vikings with an African-American genotype or other, non-existent persons, because of algorithms for observing the ideas of tolerance for diversity and equality of all groups and races (Barrabi, 2024). It is this scandal that shows the challenges posed by attempts to turn basic ethical principles and conventions into an algorithm to govern content generation. Despite these difficulties, however, it can be assumed that the research community remains rather optimistic about the benefits that the use of genAI in creative processes in advertising entails, which is also perceived as a chance to open a debate to make it more responsible (Sands, Campbell, *et al.*, 2024). In support of this, it has also been suggested that the negative effects of the use of genAI in the creation of content, such as the dissemination of low-quality content or entirely misleading, characteristic of the early stage of AI development, may decrease over time, and subsequently primarily the positive effects of GI use can be observed (Sandrini and Somogyi, 2023).

Whether the generated marketing content can compete with the way the genAI is changing the advertising environment as a whole may seem both peripheral and fundamental. Peripheral, because after the accumulation of data and the development of ideas and concepts over the years, the opposition "human – AI" in terms of the search for similarity can hardly be defined as relevant to modern understandings of AI. Although, of course, ideas such as those about "super AI" reactivate the old idealistic aspiration of man to create in his own image and likeness a creation that surpasses him intellectually and even emotionally. At the same time, however, if we accept the thesis that AI is revolutionizing the advertising industry, expanding the opportunities for non-specialists (such as start-up entrepreneurs) to design and create advertising content with the help of adequate tools, then this question becomes from peripheral to basic. Because, in the end, it all comes down to the effectiveness of marketing content and its ability to bring value for the resources invested in its creation, at least when it comes to rational thinking and perception of economic processes.

If we go back to the hypothetical entrepreneur who focused mainly on his business idea, does not have knowledge and skills in the field of marketing communications and advertising, and has limited resources for starting a business, the opportunities seemingly provided by the genAI significantly reduce the barriers to market entry. The question that this hypothetical situation raises is to what extent our entrepreneur can trust both the proposed strategies for organizing and conducting the communication processes, as well as the marketing and advertising content offered. If, of course, it would be possible to obtain satisfactory results only through simple queries such as "*Propose a communication strategy for entering the market of city X with product Y*", followed by "*Suggest content options for a*

post on our Facebook and Instagram channel for a campaign of product Y to the audiences you define", this would solve a large part of the resource problems that this hypothetical entrepreneur would otherwise face when working with a professional advertising agency.

In theory, such a scenario looks extremely attractive. And not only because it has already happened more than once in the development of opportunities for conducting marketing communication and advertising campaigns, which appeared with the introduction of digital marketing into the activities of organizations. Just look at Facebook's transformation from a social media platform that provides a digital infrastructure for communicating within online communities to a place to do business. Or let's look at the analogous transformation process that turns Google from a search engine into the biggest player in digital marketing. Here we are talking about the processes in which both ecosystems provide opportunities for entrepreneurs, by providing adequate digital tools, to plan, create, conduct, and evaluate marketing and advertising campaigns themselves, without the need for existing intermediaries in the field of traditional media, such as advertising agencies and media shops. Although in both cases – with intermediary agencies and with digital ecosystems – it is a question of transferring control of strategic marketing activities to entities outside the organization, the benefits in terms of saving resources and reducing risk through a higher degree of expertise, in the case of ecosystems, the costs of "external services" are drastically reduced compared to the alternative ones for the other type of intermediaries.

Following such a logic of presenting arguments, it is quite understandable that the observed focus on mostly optimistic expectations for the genAI on the part of the business is understandable. From this point of view, whether and how successfully genAI tools can (can) cope with marketing content is a question that acquires a high degree of relevance not only because of the natural drive for rational economic behavior. If it is possible to "bypass" the inherent costs for specialists involved in the creative processes of creating advertising content in the same way, as is observed in automated bidding and the conduct of digital marketing campaigns through the use of algorithms and systems with AI, the benefits of this would be significant. This does not necessarily mean the loss of jobs, but rather is an opportunity to direct human potential and human resources to other areas of marketing and advertising practice or other areas of added value.

What has been said so far raises another question that deserves attention. Namely, whether the rumors about the "new highly qualified colleague in the marketing department", as the genAI is sometimes defined in non-specialized publications (Hamirani, 2024), are true, greatly exaggerated, or, on the contrary, still very far from reality. Malthouse and Copulski believe that to understand the role of genAI in marketing communications, the algorithms and operating models associated with its work need to be considered within a broader ecosystem (Malthouse and Copulsky, 2023). In their publication, they define five main areas that set the framework for such an ecosystem – these are (1) the algorithms and models of operation of the genAI, (2) user data, (3) the digital environment, including the infrastructure of devices and operating systems, (4) digital content – images, video, audio and text, and (5) the information and technology infrastructure (Malthouse and Copulsky, 2023, p. 128). Concerning the boundaries of the digital ecosystem thus delineated, they also define the stakeholders related to the functioning of the genAI. These are (1) consumers, (2) influencers, (3) brands, (4) advertisers, (5) digital media and (6) data platforms, (7) digital content creators, (8) digital service providers, (9) manufacturers of digital information and content devices, and (10) regulators. The intersections between the ten stakeholders and the five zones, according to Malthouse and Copulsky, determine the context of understanding the work of the genAI in marketing communications, the main task, according to them, is to establish at which of the intersections the use of the genAI leads to higher efficiency of marketing processes (Malthouse and Copulsky, 2023, p. 136), in which the authors do not express doubt.

Interest in such intersections (with a higher degree of efficiency) can be found in other studies. One of the studies in this direction compared the effectiveness of organic content obtained through subscription and that provided through AI-generated suggestions (Dong *et al.*, 2024). The results of the studies carried out with various quantitative and experimental methods show the existence of differences in the degrees of effectiveness of the content, as the content recommended by AI leads to a lower degree of engagement compared to what is obtained through a subscription, but is characterized by lower perceived intrusiveness. Although it stays slightly away from the focus of this paragraph, the cited study is of interest to us in terms of the differences found in the distribution of content driven by AI systems, which shows that different and sometimes opposite processes and trends can be observed at different intersections in the digital communications ecosystem.

Studies such as the one cited show another important trend – that consumers tend to perceive differently generated by the created marketing and advertising content (if, of course, they can distinguish them from each other). It has been suggested that this type of content, which is classified as synthetic (*synthetic content*), has the potential to radically change the marketing and advertising landscape over the next decade (Arango, Singaraju and Niininen, 2023). In the experiment they conducted, consumer reactions to the use of synthetic content in the context of a charity fundraising campaign were tested. The results showed negative user reactions and a decrease in the propensity to donate funds in respondents who were aware that advertising characters (children) were generated by genAI. However, when ethical reasons for using generated advertising characters rather than real children are communicated, this negative effect is mitigated. This leads the authors of the study to see potential in the future use of synthetic marketing content. However, they recommend that this be done with a high degree of attention to the specifics of the audiences to which this content is aimed (Arango, Singaraju and Niininen, 2023, p. 486).

Other researchers define synthetic ads as a product resulting from AI-automated processes (Campbell *et al.*, 2022). With all possible reservations that we have made in this direction, we must clarify that this publication does not talk about the overall automation of the creative process of creating advertising content, but about the automation of separate, separate parts of this process. The focus of this study, however, falls on consumer perceptions of generated ads, which are examined in five main areas: (1) perceived plausibility, (2) perceived creativity, (3) perceived persuasiveness, (4) recognition of genAI-generated advertising content, and (5) informational value. In their study, the authors came to several main conclusions. The first is that the more complex and precise the manipulations of the genAI, the more the advertising is perceived as believable and creative. On the other hand, high levels of perception of (1) and (2) lead to an increase in the persuasiveness of the content communicated with audiences. At the same time, it is pointed out that the higher the perceived plausibility, the more difficult it is for the audience to recognize that the advertisement is generated, not created. In the end, the more creative an ad is, the more convincing it is, which in turn leads to increased awareness of the advertised brand, product, or idea (Campbell *et al.*, 2022, pp. 27-30).

Based on the results of the cited study, one important conclusion can be drawn, in our opinion. The five criteria proposed by Campbell *et al.* for evaluating advertising content are related to its quality and marketing characteristics. Thus, through (1), (2), and (4), it is possible to assess how the audience perceives the formal characteristics of advertising, such as style, precision of production, etc., while through (3) and (5) its functions as an advertising stimulus aimed at achieving marketing and communication goals, such as persuasion and awareness.

Another possibility for the application of AI in the creation of advertising artifacts is the so-called 'deepfakes' (DF or *deepfakes*, named after a Reddit user with the username Deepfake, who, in 2017, for the first time created and shared video content in which he

generated other people's facial expressions and the voice of one person on another). In essence, these are techniques related to deep learning of the so-called "deep neural networks" (from *Deep Neural Networks* or DNNs), where AI creates fake content that looks real (Kietzmann, Mills and Plangger, 2021). Kietzmann, Mills and Planger see in DF both opportunities for the development of AI-generated advertising content and some risks that refer to the ethical issues already discussed. The main advantage here is the use of celebrities as advertising persons in marketing campaigns, including those who are no longer among the living but are popular enough among the target audiences to generate an image transfer to the advertised brand. In this study, the authors define DF as more than fake content that is highly credible, easy to generate, and has a high tendency to be shared. For them, DFs significantly influence how advertising content is perceived in terms of (1) the subjective interpretation of advertising messages and (2) the socio-cultural associations that those messages evoke. (Kietzmann, Mills and Plangger, 2012, pp. 478-480).

It should be emphasized, however, that such enthusiasm, despite the negative connotations of the term DF indicated by the authors, is not shared by everyone. On the contrary, there are allegations that societies are not prepared for DF, and they can lead to a collapse of trust in media channels and, respectively, to complete chaos (Toews, 2020). The main reason we look at DF in this paragraph, as it raises another type of issue already discussed in Chapter 1, is related to the change in perceptions of AI-generated advertising content compared to that created by people, as well as the change in trust in brands and the information they communicate with audiences. These changes affect the advertising industry as a whole, which already falls within the scope of our interest.

If we have to make a summary of the literature sources that we have examined and commented on in this paragraph, several main trends related to the use of genAI in the processes of creating marketing and advertising content can be deduced. Firstly, the use of genAI in creative processes is becoming an increasingly widespread practice in the design and creation of advertisements. Such a trend can be explained, on the one hand, by the relatively easy operation of open AI tools, which does not require specialized knowledge and skills – both in the field of programming and informatics, as well as the presence of creative skills necessary in the work of content creators, such as the handling of specialized software for the production of digital visual content and copywriting. In this sense, it can be argued that non-specialists can achieve comparable results to those of content creation specialists, as long as they are aware of what final product they want to obtain and have basic criteria for evaluating what is obtained. On the other hand, the possibilities for generating advertising content with genAI allow the conduct of advertising and marketing digital campaigns, in general, to be carried out at relatively lower costs, at the expense of the use of intermediaries in the creation of such content. These two conditions are sufficient to explain the growing popularity of genAI tools, which we find based on a review of literature sources.

The second trend requires a slightly more thorough reading of the opinions discussed here and a descent below the surface of the immediate effects of the genAI entry into the advertising industry. Research on the use of AI tools in creative processes for creating advertising content shows new possibilities for performing the laborious and monotonous activities with which these processes begin, such as processing large data sets and extracting processes and scenarios based on which creative ideas for the creation of advertising artifacts are generated. In this sense, undoubtedly, the greater opportunities for generating a larger volume of ideas at a higher speed inevitably have a direct impact on the effectiveness with which specialists in the field of advertising creativity work. In the same way, the processes related to the creation of variants of advertising artifacts and their testing before or during advertising exposures within the framework of marketing and advertising campaigns can also be interpreted.

If we look for the intersections between the two trends outlined above, we can also give a relatively satisfactory answer to the question from the beginning of this paragraph, whether we can consider genAI as the "new qualified colleague in the marketing department" or not. At this stage of the development of the genAI, however, we cannot agree with this statement for two main reasons. The first is that in their work, genAI requires continuous "communication" with a specialist until they receive advertising and/or marketing content that satisfies specialists. The second is that, at the moment, it is still difficult to say that AI successfully manages to simulate the creative processes characteristic of humans, considered in the context of their multidimensionality and the complexity of the cultural, social, and individual contexts that condition them. In this sense, we would rather accept the statement (to use the same metaphor) that the genAI looks more like a new intern in the advertising department than a highly qualified colleague, since it is not yet able to produce independent creative ideas without going through training and correcting the proposals made within each task, which is a characteristic feature of each internship position. Whether, however, placed in such a role, he would do better or worse than a specialist completing his studies is a question that is yet to be examined.

2.4. Methodological guidelines for design and incentives in the study

Let's recall one of the studies cited so far, which describes the negative reactions of respondents to generated advertising characters, when the respondents themselves are aware that the characters are generated by AI (Arango, Singaraju and Niininen, 2023). In this regard, we could pose the question that interests us in the following way: What would be the respondents' reactions to the advertising content they saw if they were not aware that it was generated by or through AI or that it was created by a human. Of course, the question here is not whether people generally tend to distinguish between the two types of content, at least because the different knowledge, skills, educational level, professional and other accumulations they have have a wide range of impacts on the "recognition" of specific artifacts and on the reading of the context in which they are created. In this sense, a respondent who has never encountered the work of, say, Hieronymus Bosch or has not read a poem by Ninko Kirilov, could hardly recognize whether these art artifacts were created or generated and be completely convinced of this. On the other hand, comparing generated or created advertising artifacts does not have such specificity, because both are considered and compared in the context of a specific marketing campaign.

Let's go back to the main question that interests us in this essay, which is whether people can recognize whether a piece of content is generated or created. What really falls into the focus of our interest is whether the marketing content generated through genAI tools can achieve a similar or better result than the content created by specialists, and whether and to what extent the two types of content are perceived similarly or differently. This is a small but significant difference from the point of view of our research. To answer such a question, it is necessary to set at least two conditions in the designed study. The first is related to the requirement that respondents are not familiar with the goals of the survey, and the second is that their attention is diverted from the idea that it tests differences between genAI-generated and team-generated content. In this regard, it can be assumed that no matter whether the marketing content is generated or created, for the respondents who are the subject of advertising exposure, this content should speak to the voice of the brand and tell them something exactly to them.

Of course, there is no way to answer (in principle) "yes" or "no" to such a question. At least, because if we conduct, for example, a classic experiment with two groups and in both we use different advertising incentives created by two different advertisers, their results would

differ. Similarly, if we do an A/B test within a simulated campaign with two advertising visions created by different specialists and test them with the same audience, they will achieve different results, and one of the two would be distinguished by a higher degree of effectiveness. Similarly, the situation is also provided that we decide to test two genAI-generated advertising contents. Despite such a seemingly dead-end situation, we believe that if we test with the same audience marketing content generated through genAI and created by specialists, we can formulate the following statistical hypothesis:

H1: There are statistically significant differences in scores for genAI-generated and human-generated marketing content
and

H0: There are no statistically significant differences in scores for genAI-generated and human-generated marketing content

Here, of course, the key is how we can define the effects of advertising exposure. We look at the concept of the effect that marketing content achieves within advertising exposure under two conditions. The first is that we see it as a result, or in other words, what could be achieved through the tested marketing content. The second condition is that we consider this result only within the framework of the advertising exposure, or what impact it achieves, and, respectively, what can be established that the advertising content achieves during the exposure. Here, it is obvious that when we collect data on impact through a survey, we can only examine the subjective judgments of the respondents or, more precisely, their subjective judgments about the impact that the advertising content has on them. Of course, the search for a long-term effect or result – such as consumer loyalty to a brand, an increase in purchases, or the spread of brand-related ideas among respondents' social networks – can be examined, but with different methods and a different type of data (Stanimirov et al. 2018, pp. 92-96, 128-131).

If we return to the effects of advertising exposures and re-enter the field of marketing effectiveness, we should take into account a few more features related to these two concepts. We have already commented that despite the terminological confusion associated with the use of the term "efficiency" in the Bulgarian language (this issue has been discussed in detail in our previous work (Ivanov, 2021a)), and here it will not be presented in detail. We consider efficiency as a ratio of the planned to the actual result. In this sense, if, say, we expect to achieve a 20% increase in sales and achieve a 20% increase at the corresponding level of use of marketing incentives, this means that the effectiveness is equal to 1. In other words, we have succeeded through the marketing incentives we have used to achieve what we have set out to do. However, if we have increased sales not by 20% but by 25%, then the marketing effectiveness of our campaign will increase to 1.25. It should be emphasized that the proposed coefficient for determining marketing effectiveness is an easy and convenient tool to use to assess the effect of our marketing actions, but only under a seemingly unimportant condition.

To illustrate it, let's look at the following situation. Let's imagine that we have defined a goal of "increasing sales by 15%," and at the end of the campaign, we report an increase of 25%. In this case, it would mean that we have achieved an efficiency ratio of 1.66, which, with a target level of the odds of 1, is more than a good result. Or, in other words, we can say that our campaign was extremely successful. What would we think, however, if we understand that the set goal for an increase of 15% significantly underestimates the market situation and the effect that the marketing resource we use could lead to? This, of course, would mean that we have not defined realistic goals for the market situation, and the resulting coefficient would only serve to (self-) delude ourselves about how successful a campaign we have conducted.

If we use the concept of marketing effectiveness in the field of sales, customer lifecycle management, distribution coverage, or an increase in market share, the issues related to it are mainly considered in the context of the value of the results obtained. In this sense, the

definition of realistic goals goes through a detailed study of the market situation, of predictive models that we can use, of assessing the potential of market segments, etc. Naturally, we could also rely on data from past campaigns and thus refine our goals to the possible limit of their realism.

When we enter the field of advertising creativity, however, this question does not seem so easy. Naturally, through the algorithms offered by the ecosystems of the two main monopolists in the field of digital marketing – Meta and Google – we can also rely on them by using A/B testing of the content, which would allow us to use what achieves the set goals to a higher degree. The problem, however, is that different content has advertising exposures in different samples within the set audience of the campaign. What would happen in this case if we showed the two tested advertising contents to the same audience is a question with a very easy answer. This, in principle, is dealt with by the preliminary tests of advertisements, or the so-called. pretests, which are also the subject of another study of ours (Ivanov, 2021b). And for this reason, we will not go into them in detail here. We will only clarify that the main idea with them is to test different variants of ads and, depending on the reactions to them of a sample of target users, to make decisions about which of them would be most suitable within the upcoming campaign. In advertising theory and practice, sufficient methods and procedures have been developed and tested since the beginning of the sixties of the last century (Young, 2008), which are applied precisely for this purpose, which allows us to assume that the results of the retests make it possible to compare the characteristics, perceptions and impacts of ads on audiences before the start of advertising campaigns. In this sense, *when we talk about researching the effectiveness of marketing content by conducting empirical research, we are referring here to an attempt to identify the differences in the effects that this content can lead to, rather than the results of its use within the campaign.* This is because in a simulated campaign, there is no way to obtain specific marketing results beyond the impact of incentives on the included respondents in the sample.

After these few clarifications, let us return to the fulfillment of the objectives set in this study. First of all, for substantive rather than formal differences to be tested, the characteristics of this content must be "similar". What does it mean? Although difficult to define due to the absence of clearly defined boundaries, the idea of "similar" objects means that at least some of their essential characteristics should overlap to a large extent. In other words, similar objects are those that are not the same, but are difficult to distinguish from each other. Moving into the field of advertising, we can define as "similar" the variants of such advertising content that have common advertising characteristics, namely – in their implementation (1) the same creative strategy is used, which aims to fulfill (2) common marketing and (3) advertising goals and (4) tasks aimed at (5) the same audience on behalf of (6) the same brand on (7) the same media channel and in the The construction of the advertising text (understood as a semiotic supersign) includes (8) the same elements that transmit to (9) the same audience (10) common messages. The similarities in these ten characteristics of advertising content can be considered, for that study, as a sufficient number of common elements to allow, if available and identifiable, the comparison of generated and created marketing content.

The second question is how similar variants of marketing content can be provided. The main task in this direction is to put the "participants" in such a "competition" under equal conditions. This, of course, can be done mainly because of the specifics of the creative processes of creating advertising content. As we have repeatedly commented, these processes are neither abstract nor elusive, nor are they an end in themselves. This is because the creation of such content is subordinated to the fulfillment of marketing and advertising goals and tasks. From that point of view, it could be argued that each advertisement was created based on a specific assignment (*advertising brief*). The terms of reference, or as it is commonly called

among those working in the field of advertising in Bulgaria, the brief, is a document that performs the functions of an agreement between the advertising agency and the client, which describes the goals and objectives of the campaign (Law, 2009). Although there is no established uniform standard for the elements that an advertising brief should contain, it describes those details that the creative team needs to create an ad that meets the needs of the advertiser and is expected to achieve the goals of the campaign.

If we use a broader example, we can describe the brief as a detailed description of the advertiser's idea of what kind of advertising he expects to receive as a final product from the service agency. It is common practice when a large advertiser does not work exclusively with a specific agency (which happens extremely rarely) to send a brief to several agencies, which, based on this document, prepare variants of advertising and media content, budget, and media mix, through which they compete for the order. In this sense, it can be argued that, other things being equal, the agencies that have received the brief are placed under the same conditions, and if they strictly follow the instructions in the document, the differences in the proposed options would only be due to the different creativity of the creative teams behind them. However, since we aim to simulate such a level playing field, we can use such an illustration to explain the idea of how it would be possible to place genAI tools and creative teams on a relatively equal footing, and respectively – to examine the presence or absence of differences in the quality of Google Analytics and the potential effects that generated and created marketing content can lead to through respondents' subjective judgments about that content.

Within the framework of the literature review, we have already commented on the idea of simulating creative processes in genAI, but here we will recall what is directly related to the implementation of the tasks of this study. When considering the idea of human-AI symbiosis within the creative process, the main starting point was the importance of corrective actions of the person working with the genAI until a satisfactory result of marketing content is obtained – i.e. in such a scenario, the author of the content is ultimately the operator, since it is his ultimate judgment to what extent the generated content meets his preliminary ideas and goals. However, if we reduce the role of the operator to just setting a task for developing content, then it can be argued that this content is the result of simulating a creative process through the genAI and not the work of the person who sets the task. In this regard, if it is possible to place several advertising agencies on equal terms to create similar advertising content through the use of a brief, then it would be quite possible to place teams of people and a person who works with the genAI in the creation and generation of ads under such conditions.

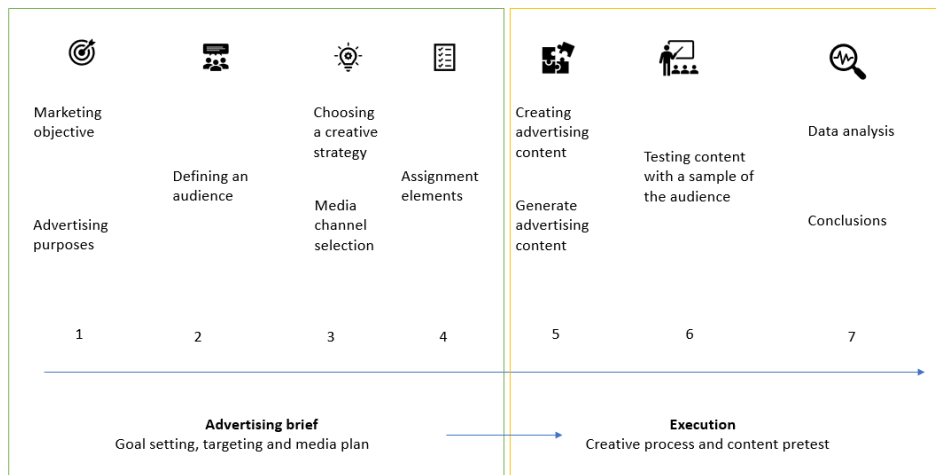


Figure 2.2. Design research on the differences between generated and created content

Source: Own development

In Figure 2.2, a conceptual design of a study is presented, through which possible differences could be identified related to the effects achieved by generated and created marketing content, as well as the assessments of its quality. It visualizes the seven stages that such a study can go through. As can be seen, it is divided into two main phases – related to (1) the design of the study and the incentives used, and (2) the collection of data and analysis of the results obtained. It is obvious that the design of the study simulates the process of creating marketing content, in which the organization works with an external contractor who is entrusted with the creative processes and the execution of advertising materials. In terms of time, the study is limited to the stage of distribution (distribution) of advertising incentives in media channels – i.e. it ends with a pretest of the received variants, and the idea, unlike the classic pretest, is not to choose the most appropriate one, but to investigate the (possible) differences in the perception and impact of the tested variants of advertising content.

It should be pointed out that the use of genAI tools to create incentives in advertising research is a common practice, and the arguments for their use are constantly increasing, as well as the methodological guidelines for their use. Based on the empirical data collected in parts of the studies, it is concluded that genAI tools can create advertising incentives that are as good as those created by professionals in two-thirds of the cases (Diego, 2024, p.18). In his study, Diego (2024, pr. 5-8) recommends a methodological framework for the generation of incentives in advertising research, which, however, pays particular attention to the modification and further adjustment of the content generated by the genAI. While the main conclusion that the genAI can generate adequate quality advertising incentives is important to us, the study designed here has different goals.

The idea behind such a design is to simulate in a laboratory environment the conditions under which an advertising campaign is designed and implemented in practice *until the approval of the options* that will be distributed in the media channels to the audiences. Following this logic, the study itself is divided into two stages, which can be formally divided before and after the stage of completion of the assignment incentives, and here, the following clarification should be made. Usually, in advertising studies in which variants of ads are tested before the start of their distribution, regardless of whether we are talking about retests or classic experimental studies, the tested ads are defined as incentives. In this case, however, since this study cannot be defined as an experiment (not least because of the absence of a control and test group, as well as because the tested variants have exposures in the same sample), when we talk about "stimulus design", we mean the design of the two tasks to be given to the teams of specialists and submitted to the genAI tools, included in the survey.

This, in turn, leads to another peculiarity in the design of the study. Since the two groups of "participants" work in different conditions, the advertising brief needs to be "translated" into the "language" of both systems. In order for this to be possible, it would be necessary to first clarify the marketing basis behind this task. This means (1) the marketing and advertising goals, (2) the specificity of the audience, (3) the creative strategy and the media mix (Figure 2.2.) to be adequately presented both to the teams of specialists who will develop the advertising content, and through the operator, who is tasked with "assisting" the creation of similar content through genAI tools. It is expected that at the end of the first stage of the study, variants of the advertising content will be available to be tested in the second stage.

Before the start of the second stage, it should be clarified how to test the created and generated content in a way that allows the verification of the research hypothesis for the presence or absence of differences in the perception and/or impact of the created and generated content. A set of comparison criteria must be formulated, which are subsequently operationalized as variables in the collection of empirical data. Before we consider this issue, however, it is necessary to make one more important clarification. Since the task of this survey

is not limited to collecting data based on which to establish whether people distinguish between generated and created content, respondents should not only be aware of what content is generated and what is created, but also of the inclusion of genAI in the construction of some variants of the tested content. In the field of advertising research, it is an established practice to compensate for the "testing effect", which distorts the results, by misleading the respondents in the sample about the true purpose of the research, in which they participate (Wheatley, 1971; Sawyer, 1975; Derek, Jane and Twyman, 1977). In this regard, it is assumed that if respondents are not aware of the purpose of the survey, their subjective (self-)assessments correspond more fully to how they perceive their future intentions or to their subjective judgments about the objects or subjects studied (Young, 2008; Zhelev, 2013). This, in practice, means that before the start of the second stage of the study, it is necessary to formulate a sufficiently "credible" objective that meets the following conditions:

- (1) Not to draw the attention of the sample respondents to the idea of testing content generated by the genAI.
- (2) Present in a sufficiently convincing manner the fictitious purpose of the study.
- (3) There should be a link between the communication of the fictitious purpose of the study and the operationalised variables on which the empirical data are collected.
- (4) Be realistic and credible – this means that respondents must perceive themselves as competent to answer the questions included in the survey.
- (5) Comply with the conditions under which empirical data are collected.
- (6) To allow empirical data to be collected through the conducted research for the fulfillment of the real objective.

The fulfilment of these six conditions can be achieved if the sampled respondents are communicated with a fictitious purpose of the survey that they are invited to participate in a re-test of variants of advertising content intended for broadcast on a media channel in the role of an 'advertising jury' (Young, 2008). Which suggests that their attention will be focused on their abilities to make assessments of which of the options, to what extent, could meet the marketing and advertising goals communicated in communicating the fictitious purpose of the study.

In fact, when respondents have to give answers related to advertising content they have seen in a laboratory, they cannot help but be aware that the goal is to check whether and how this content affects them. Similarly, questions related to predictions of future behavior under the influence of several variants of advertisements seen would hardly protect respondents from a tendency to distort answers. In other words, there is no way to achieve complete certainty that subjective judgments about future behavior as a result of an advertising exposure would correspond to the actual behavior as a result of such exposure outside the laboratory. However, the fact that retests continue to be applied when making decisions about which of the variants of advertising content should be chosen gives us sufficient grounds to talk about the reliability of such methods of studying advertising creativity (Zhelev, 2013).

As stated above, a number of methods, techniques, and tools have been developed over the past seventy years to study the impact of advertising and the ways in which it is perceived by the audience. When reviewing various publications in the field, three types of studies in this direction can be defined in general: qualitative, quantitative, and experimental, each of which has its advantages and disadvantages. In the field of advertising research, it is increasingly advocated that the application of an interdisciplinary approach, which includes a combination of methods, can lead to overcoming some of the weaknesses of each of these three types (Ivanov, 2021).

The first tests of advertising content date back to the early fifties of the last century and were mainly based on the use of field experiments (Dodd, 1953; Goodnow, 1958; Greenberg, 1959; Zielske, 1959). In these experiments, different effects of advertising impact

and advertising perception are tested. Of course, the trend of using an experimental approach continued in the following decades, and other approaches began to be used. Such as the study of individual cases (Flyberrg, 2006) and the much more widespread qualitative methods of data collection (Fjynn, 1991), which often oppose quantitative methods as an alternative to quantitative (Carlson, 2008). In any event, however, it may be pointed out that there is no single method or group of methods established as the most appropriate or most effective type of method or group of methods for examining the differences between variants of advertising content, which is, in essence, retests. From this point of view, in the context of that study and in relation to its objectives and limitations, the idea is taken that a quantitative online survey would make it possible to gather empirical data to investigate the differences in the perception of genAI-generated and professional-generated content. And that "hiding" the use of genAI in the production of the tested ads will not direct the respondents' attention in this direction. In other words, when choosing such a design for conducting the empirical study for the sampled respondents, it should not be assumed that they will consciously look for differences between generated and created content and, accordingly, their subjective judgments will not be influenced by this essential difference between the two types of "creative" processes that led to the production of the tested variants.

The next question that is essential is what criteria should be used to compare the variants of the tested content. In this regard, and based on a review of previous studies, two main areas for comparison of the tested variants can be formulated, through which to investigate (1) the perception of advertising and (2) the impact it has on the target audience. These two main zones can be divided into the following factors that are included in them, namely:

- (1) How respondents rate the characteristics of the tested advertising content in general, or how understandable, motivating, and important the content is for the respondents;
- (2) The way of perception of the chosen positional strategy underlying the creation of the advertising content.
- (3) The importance of the need, the satisfaction of which communicates the tested advertising content.
- (4) The relationship between the belief that respondents can change the current situation (*Self-efficacy*) with their actions and the feeling of control they have over the situation in which they find themselves (*Locus of Control*).
- (5) The motivation of the respondents to take advantage of the benefit or idea communicated through the advertising content.

Respondents' subjective judgments of the extent to which the tested content (in their opinion) would or would not affect and would be perceived or not as relevant to the marketing and advertising objectives set within the campaign on these five main factors can serve as a basis for concluding as to which of the two types of advertising content – generated or created, would achieve a higher level of implementation compared to the goals and objectives of the simulated campaign. Based on this, the following conceptual model of the simulated pretest can be proposed, through which to establish the presence or absence of similarity in the two types of content and, respectively, to test the research hypothesis (Figure 2.3).

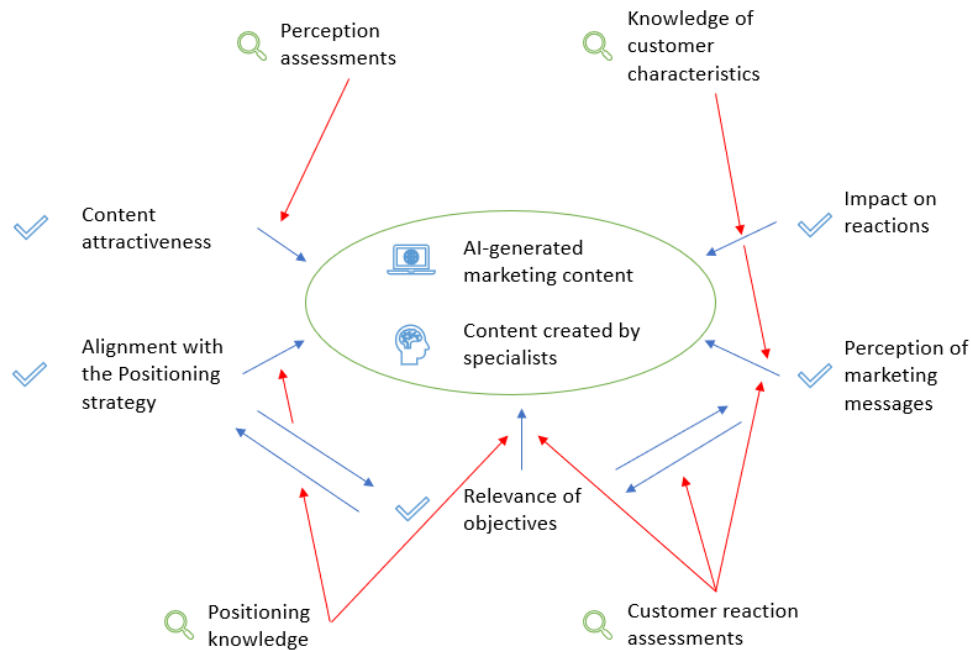


Figure 2.3. Conceptual model of empirical research

Source: Own development

A basic logic in the construction of the conceptual model of the study is based on the premise that the respondents evaluate the generated and created content from the position of the role in which they are placed in communicating the goals of the empirical study. This means that from their positions as marketing experts, they should express opinions not about the content itself, but based on their expertise to assess how this content would be perceived by and have an impact on the target audiences of the simulated marketing campaign. Thus, in fact, putting themselves in the place of users from the target segment, they share indirect assessments for both types of content, focused on their perceptions of the reception of Facebook and the impact on the user personas communicated with them, and not on the possible differences between created and generated content. And in this sense, we hope, this would help to reduce the influence of the "testing effect" (Zhelev, 2013) on the distortion of their subjective assessments of the test-generated and created content.

As can be seen from the conceptual model (Figure 2.3), the scope of the survey of the subjective opinions of the respondents in the sample includes five main characteristics that look for the presence or absence of similarity between genAI-generated and team-generated marketing content. These are:

(1) The content is perceived as attractive, which actually appreciates *the creativity* of the advertising artifacts,

(2) Compliance of the content with the chosen positional strategy of the client, which must assess its *adequacy* to the strategic goals of the campaign,

(3) The content serves the achievement of the operational objectives of the campaign, which assesses its *applicability* in the context of the campaign,

(4) The selected messages and related elements of the advertising text are relevant to the needs of the target audience, which assesses its *importance* for the audience and

(5) Can motivate the target audience to certain actions or changes in attitudes and assessments, which evaluate *the desired effects of its use*.

Of course, several other characteristics could be formulated to allow data collection and the formulation of conclusions about the presence of differences or absence of such

differences in the impact and perception of marketing content by the audience, but there is hardly a need to unnecessarily increase the number of variables to be included in the design of the research tool. We are of the opinion that these five main characteristics are quite sufficient to investigate, in general, the presence or absence of differences in the use of genAI-generated marketing content and in the marketing content created by a team of specialists. Moreover, the literature review of previous studies related to testing variants of advertising content allows us to assert that these five groups fall among the most important and main areas of influence and evaluation of advertising by target audiences within the campaigns (O'Neill, 1963; Grass, Winters and Wallace, 1970; Wells, Leavitt and Mcconville, 1971; Wheatley, 1971; Ray, 1975; Greeno, Haines Jr. and Sommers, 1976; Collins and Jacobson, 1978; Schlinger, 1979; Green and Schaffer, 1983; Bierley, McSweeney and Vannieuwerkerk, 1985; Burke and Edell, 1989; Mano and St, 1991; Ambler, 2000; Leigh, Zinkhan and Swaminathan, 2006; Heath, Fairchild and Heath, 2007; Stathakopoulos, Theodorakis and Mastoridou, 2008; Okazaki, Mueller and Taylor, 2010; Vargas, Duff and Faber, 2017).

The variables identified in the conceptual model of the study can be operationalized on the basis of previous studies of the perception and impact of advertising content. To collect data on attitudes towards advertising content (1), a modified scale can be used to measure attitudes towards advertising (MacKenzie and Lutz, 1989), which includes three statements represented by a semantic differential scale. These are:

- to what extent this publication is "understandable" to me – "incomprehensible";
- to what extent this publication is "motivating" – "demotivating" for me;
- To what extent the message in this post is "important" to me – "unimportant".

To collect data to establish the impact of the tested ads on the target audience, (2), (3), and (4) the operationalized variables in the study of (Glanz, Rimer and Viswanath, 2002), which cover all three factors. At the same time, the motivation of the respondents can be investigated by deriving the main behavioral and personality variables that determine the attitudes and motives for purchase within the product category chosen for the object of study, and, respectively, to be consistent with the brand chosen as the "assignor" of the "campaign".

Two more clarifications should be made in relation to the proposed conceptual model. Although they are not included in the conceptual model (Figure 2.3), demographic variables also need to be present in the research tool. This is because, firstly, their absence provokes many questions in the respondents, who, as specialists, expect their presence in every research instrument, and there is no need for their attention to be unnecessarily directed to suspicions related to the replacement of the purpose of the study in which they participate. And secondly, because the presence of demographic variables for the included respondents, although not directly related to the impact assessments of generated and created content, makes it possible to look for links between the "profile" of the respondents and the judgments they give.

The second necessary clarification is related to the selection and number of included advertising incentives tested in the empirical study. In view of the limitations already mentioned at the beginning of the paragraph, a comparison between one variant of genAI-generated content and one variant of created content is capable of producing radically different results than testing another pair of variants. Since it is difficult to include more than four test options within a single study (due to the identity of the scales that are used to collect empirical data for each of these variants and automate the process of responding to more stimuli), the most appropriate option for this study is to test a total of two pairs or respectively two variants of generated and two variants of created content. Moreover, it has already been clarified that hiding the true purpose of the survey puts respondents in the role of experts who evaluate variants of advertising content in order, based on the answers they give, to choose one option that is expected to achieve more effects than the others. In this regard, it can be pointed out that both in the pre-tests and in practice, when preparing variants for advertising content for a

specific campaign, it rarely happens that their number exceeds four, and even for the usual practice of creative agencies, this number is too large.

It is natural that the results of such a study, as well as the conclusions made, can only be applied to the specific options being compared. It would be entirely possible that other creative teams and other operators formulating and adjusting the specific assignments for genAI tools could be given variations that would produce different results. However, we see such a study as an initial attempt to explore the possible differences associated with the use of genAI tools and teams of marketing content creation specialists in terms of the effectiveness of both approaches. At the same time, however, we hope that through such attempts, we can open one of all possible doors to exploring the potential of genAI in marketing content creation processes.

And one more thing – in an attempt to compensate for some of the serious limitations described, an empirical study of two waves over a period of one year is relied on. Such an experience would allow data to be collected with the same research tool for the evaluations and impact of advertising incentives that are created following the same procedure. In this regard, one last clarification should be made. As the genAI at the time of the design of the empirical study is still at the beginning of its development, to obtain variants comparable to its "skills" at the time of content generation, it would be better to make up the teams of specialists who are also at the beginning of their professional development, such as the final year students studying in the Bachelor's program in Marketing and Communication. It should be pointed out here that the differences between neighboring classes of students may be the subject of another study, and no conclusions are formulated in this direction within the framework of the study. At the same time, one of the sought-after practical and applied contributions of the study is related to testing the students' abilities to create marketing content with a view to their better future realization on the labor market. This, in turn, makes it possible, by comparing the results obtained in the two waves of the study, to formulate, in the light of those limitations, conclusions on the two trends mentioned above.

Despite the large number of restrictive conditions defined, we believe that such a study could answer another question: Are simulations of creative processes through genAI in the advertising industry able to lead to similar or better results for the production of advertising content than content created by humans? This question, in addition to its economic logic – is it better to use tools with genAI in the advertising industry, or to allocate resources for the hiring and training of novice specialists – puts another, much more important question. Namely – if automatically generated content through genAI can deliver better results than what is created in marketing campaigns, what should be the role of genAI in the creative industry – as a *tool* that optimises and makes the creative process more efficient in the creation of ads, or as a *means* by which creative processes, or at least part of their stages, can be automated.

In connection with the implementation of one of the objectives of the study – minimizing human intervention in the generation of marketing content through genAI, it is assumed that this can be done through the following series of tasks:

- (1) Formulation of the main goals and objectives of the simulated campaign;
- (2) Defining the target audience of the campaign;
- (3) Formulation of main and supporting messages;
- (4) Indication of the visual elements that must be present in the generated content;
- (5) Definition of a media channel for the distribution of marketing content;
- (6) Generation of marketing content variants;
- (7) Assignment for formulation of criteria for evaluation of the generated content;
- (8) Assignment of the generated variants to be ranked by the genAI according to the selected criteria;

(9) Detailed description of the visual elements to be included in the generated marketing content;

(10) Generate visuals using another genAI tool;

(11) Finalize the generated verbal and visual elements of the marketing content with the help of a graphic design specialist.

As can be seen, in stages (1) to (10), human intervention is limited only to the description of the tasks, without manipulating the results obtained. We remind you of the comment made that at the time of the design of the study, the freely available tools with genAI did not have the functionality to create both visual and verbal content, which requires the use of human intervention at stage (11), but without manipulating the generated content in any way. In this regard, it can be pointed out that the use of a single tool with a genAI to generate an assignment for the creation of content visuals is considered relevant to the objectives of creating incentives in advertising research (Diego, 2024, p. 19). We believe that through the described procedure, human intervention in the generation of marketing content can be minimized, which corresponds to the purpose for which this content is designed.

The design, conduct, and results of this empirical study are presented in Chapter Three.

Chapter Three
**Generative Artificial Intelligence and Creative Processes in Creating Marketing
Content – Main Results of the Study**

3.1 Logic and organization of empirical research

To describe the logic of the projection of stimuli in the study, we can use the allusion to the idea of "shadow theater", in which viewers see the meaning of the figures created by the actors' hands, but not the hands themselves. In fact, from the point of view of communication and, respectively, of the effect to be achieved, only shadows are important, because through them the meaning and history are transmitted, and not the hands that create the specific images. Similarly, we can look at marketing content – it is what achieves or does not achieve the desired effect within the campaign, and its creators perform the functions of a "tool" through which this content is produced. Without underestimating the role of creativity in the creation of advertising and, in general, marketing content, in this particular case, we are not interested in the "mechanisms" that drive the creative processes of people and in the tools with genAI, but in the comparison of the results that their use can lead to.

The idea behind the empirical study described in this chapter is simple. Initially, it was born out of the concerns and hopes discussed so far related to the opening of access to ChatGPT and, in particular, to the expectations of how this act may or may not change those activities in marketing that are related to the creation of content. Since one of the main reasons for granting open access is the goal of accumulating enough data and cases from assignments and from the exchange of information with users to allow the self-learning processes of the genAI to continue, it is assumed that under the same other conditions, the time lag would lead to different results. Therefore, the study itself is projected in two waves over a period of one year. And since we are talking about dynamic processes in a dynamic environment, the decision to use different respondents and different authors of marketing content seems completely logical.

In this regard, the same procedures and tasks are used in the design of incentives for both the first and second waves of the study. Since the idea is to compare the results of using created and generated marketing content, the first step is to design an appropriate situation in which that content will be produced. This means setting common audiences, goals, media channels, and requirements for this content to meet (Figure 2.2, stages 1-4). As the genAI tool used at the time of the study is in an 'early stage' of its development, the inclusion of professionals as content creators would at least make such a comparison asymmetrical. In this sense, the decision to use students who are in some initial stage of their marketing education as content creators also seems logical.

For this purpose, students have been selected to study in the Bachelor's program in Digital Media and PR at the University of Economics – Varna, fourth year, summer semester. Although they are in the last year of their studies, it can be pointed out that, in general, in most of the specialized disciplines studied by them up to the time of the study, content creation is present to a greater or lesser extent. This gives us reason to assert that at this stage of their development, students have accumulated some knowledge and skills in this direction, although most of them have not had the opportunity to practice them in anything other than simulated learning situations. On the other hand, the discipline "Photography and Video Production", in which they are trained in the fourth year, seems quite appropriate as an "occasion" to be given an assignment related to the design of marketing content.

Similar are the conditions under which respondents are recruited in the survey. These are another group of students studying in the second and third years, who are defined as the target audience of the simulated marketing campaign. In order to conceal the real reason for collecting the empirical data, respondents are put in the role of "experts" who have to evaluate the work of their colleagues from another course. As can be seen from the research tool

(Appendix 2), respondents are asked to take on the role of representatives of the target audience of the campaign and to give their answers from the position of representatives of the audience of the media channel used.

Such a technique takes respondents two steps away from the actual purpose of data collection. On the one hand, by taking on the role of "experts", they give their subjective judgments about how they think the "actual" representatives of the audience would respond – i.e. here the focus of the answers given falls on trying to simulate the reactions of other people according to the predictions of the "experts" how these people would react to the tested marketing content – something that every content writer takes into account within the creative process of creating it. On the other hand, in this way, respondents are directed not to a direct comparison of the tested content, but to the specific results that, according to their subjective judgments, the advertising exposure would lead to the target audience of the campaign. Of course, whether or not the use of such a technique would minimize the effect of testing can be determined within the framework of another, subsequent study.

The design of the second group of stimuli in the study, genAI-generated content, is approached differently. Two genAI tools are used in the content generation process – ChatGPT to generate the verbal messages and image ideas, and Midgernay to generate the visuals. In this case, the same parameters are used for the assignment that are included in the assignment to the students, thus fulfilling the condition to compare variants of the same marketing content that is the result of different creative processes.

Since the respondents comparing the tested content variants must fall into the group of users, a specific initiative of the University of Economics – Varna was chosen as the apparent goal of the marketing campaign, related to its positioning as a "green university". Although there are some successful activities, programs, and campaigns through which the University implements its positional strategy, only the campaign aimed at reducing the environmental footprint of the production of single-use plastic water bottles by providing free use of a network of water dispensers located within the two buildings of the University has been selected. In this way, each of the respondents falls within the target audience of such a simulated campaign, in which the Facebook page of the University of Economics – Varna is chosen as a media channel.

The assignment on which the teams of students worked in the first wave of the survey, as well as the tools with the genAI, is related to the creation of content for the Facebook page of the University with two main goals of the campaign – (1) to position the university as a "green university" and (2) to stimulate the use of drinking water dispensers at the university as part of this positioning strategy. The assignment also includes a restriction on the visual elements used, and their number is reduced to three: a disposable cardboard cup, two blank white sheets, and a third element that can be randomly selected. After creating the visions, the teams of students are given the task to create a text with the same communication goals as the already created vision, with the restriction that the text and the vision must be designed as a post for the Facebook page of the University, with the main audience of the students studying in it.

As several teams work on this assignment within the course, the prepared variants are subjected to a selection, in which each team evaluates the projects of the other teams on a seven-point scale according to the following criteria:

- (1) How well the publication positions the University as a "green university";
- (2) To what extent can the publication stimulate students to use the drinking water dispensers at the University?
- (4) To what extent is the publication intelligible?
- (5) To what extent is the publication interesting?

(6) To what extent do the verbal and visual elements of the publication correspond to each other?

When giving the ratings, the teams use a scale from 1 to 7, with 1 meaning "completely does not match/does not match" and 7 meaning "fully matches/matches".

The criteria for evaluating the different proposals cover the main areas in which the two types of content are tested with a sample of the target audience. These are (1) the relevance of the marketing content to the positional strategy, (2) the extent to which the content motivates certain actions, and how much the content is (3) understandable, (4) interesting, and (5) consistent. Based on these criteria and a review of previous studies of advertising content, the scales for evaluating the tested variants were also designed (Figure 2.3). Through the given scores, the developed variants are ranked, and the two variants that received the highest sum of points are used as incentives in the empirical study (Figure 3.1).

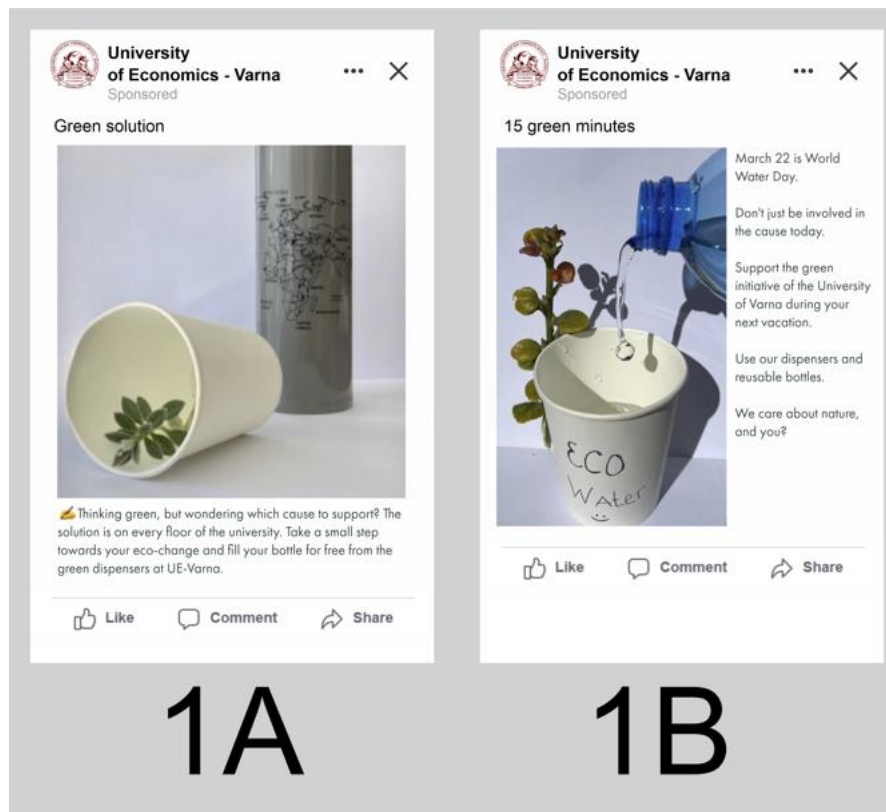


Figure 3.1. Variants of created content (First wave)

Source: Own development

The other two stimuli in the study – the variants of generated content – were created through a series of prompts, and initially, the genAI is introduced in the context of the simulated marketing campaign, by specifying the author of the message (UT – Varna), its marketing and positional strategies, the media channel, and the characteristics of the target audience. Special attention is also paid to the characteristics of the content to be generated – i.e., the requirements it must meet and the goals it is expected to achieve. Structurally, the series of assignments to the genAI has the characteristics of a brief for a communication campaign, similar to the one used in giving the assignments to the teams of students. At the time of designing the incentives for the first wave of the study, ChatGPT had not accumulated enough data in Bulgarian, so the English version was used at this stage, and the generated texts were translated into Bulgarian. At the same time, it should be pointed out that at this point, the Open AI tool with genAI for creating visual content does not offer satisfactory (in

the sense of comparable to those developed by the students) options; another tool was used to create them - Midgernay. The resulting verbal and visual elements of the generated content were reworked as Facebook posts, but without altering the genAI-generated elements, with the help of a professional graphic designer (Figure 3.2).

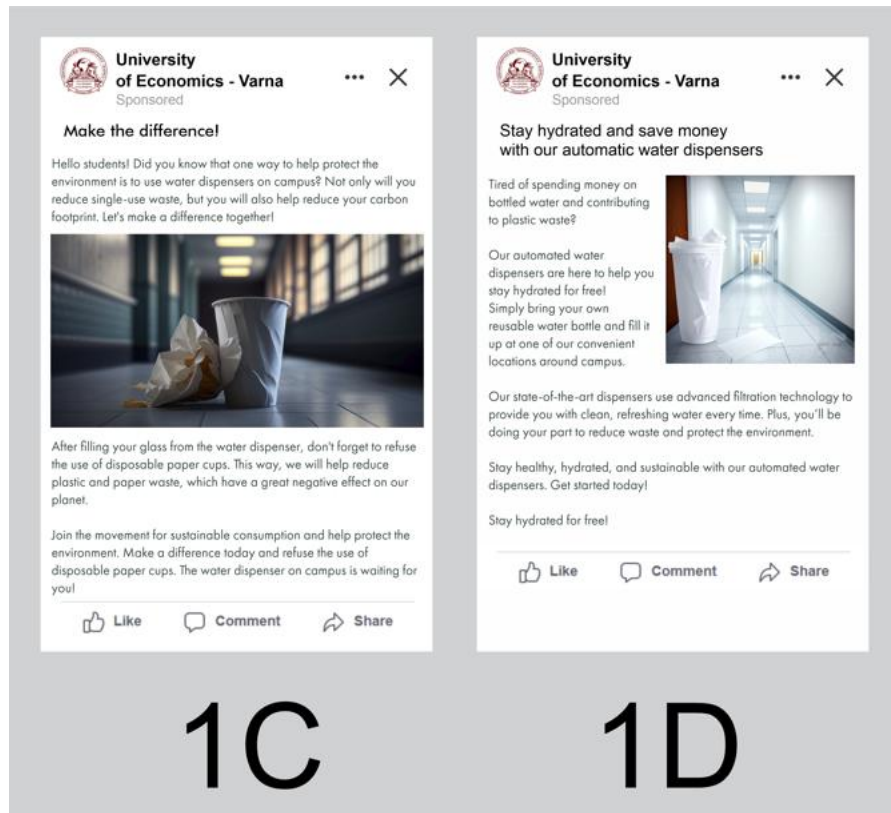


Figure 3.2. Variants of generated content (First wave)

Source: Own development

It should be noted that in the generation of the visuals using the GI tool, the descriptions formulated by ChatGPT were used as assignments when asked to describe appropriate instructions to a graphic designer on what images he should design to best match the verbal messages proposed by the genAI in the context of the design of content for the campaign. When comparing the two groups of stimuli (Figure 3.1 and Figure 3.2), a major imbalance in the ratio between visual and verbal content is noticeable. While in the generated content (Figure 3.1), the verbal messages are reduced to the smallest possible number of words and the main message is communicated primarily through photographic images, in the generated content (Figure 3.2), these messages are transmitted mainly through verbal elements, while the images are more illustrative in nature.



Figure 3.3. Variants of created content (Second wave)
Source: Own development

It should be pointed out that both teams and tools with genAI receive the same assignment, and the differences in the created and generated content can be interpreted through the differences in the two types of creative processes. In this sense, this cannot be defined as a disadvantage of the approach used, because, quite expectedly, the two types of creative processes can lead to different types and nature of results.

As already commented, the purpose of the empirical study is to compare the perceptions of generated and created marketing content according to predefined criteria. Since a single comparison of the results of data collected for a total of four content variants would hardly be enough to draw serious conclusions, it was decided to conduct the study in two waves. The second wave takes place one year after the first one, retaining the main elements both in (1) the creation and generation of marketing content, and in (2) the collection of data on respondents' subjective judgments about this content.

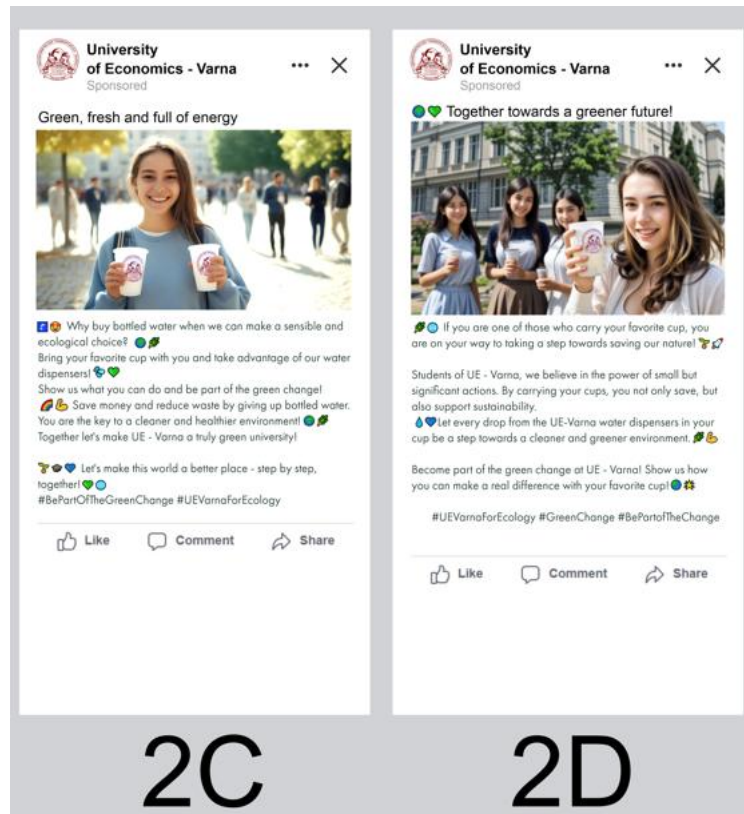


Figure 3.4. Variants of generated content (Second wave)
Source: Own development

Within (1), two main differences between the two waves can be indicated. The first is related to the conditions of the assignment itself. While in the first wave, the number of visual elements that can be used is reduced to three: a disposable cup, a white sheet, an A4 format, and one random element. In the second wave, this restriction is removed. The second difference is that in the generation of the verbal content for the second wave, the Bulgarian version of ChatGPT is used, since for a year, it has already been established that enough data in Bulgarian has been accumulated. Within (2), it can be stated that the second wave uses the same research tool, in which only incentives are replaced. The options that received the highest scores from all participating teams are presented in Figure 3.3 and in Figure 3.4. – the variants of generated content.

In the processing of the variants of the generated content in the form of a publication on the Facebook page of the University of Economics – Varna, the services of the same professional graphic designer were used again, as in the first wave, again without making any meaningful corrections to the visual and verbal elements generated by the genAI. When comparing the two groups of incentives for the first and second waves of the study, several main differences are striking. The first is related to the use of emoticons within verbal messages in both the created and generated content in the second wave, while in the first, with one exception, this technique is not observed. The second difference is related to the disproportion observed in the first wave in the ratio between verbal and visual elements in the generated content (Figure 3.2 and Figure 3.4).

It is also noteworthy that the visual elements of the generated content no longer have strictly illustrative functions, although the possibilities for communicating the main and supporting message through them are more limited compared to photographic images in the variants with the created content (Figure 3.3). At the same time, however, the stimuli of the created content from the second wave show a comparatively larger volume of texts compared

to the first wave. However, whether such differences can affect the differences in the perception of and, respectively, the impact of generated and created content, can be established only after data on user reactions to the stimuli used have been collected and processed.

To collect empirical data in the study, an online survey created through Google Forms is used (Appendix 2). The design of the research instrument used the conceptual model described in the previous chapter (Figure 2.3), and a total of seven blocks were designed in this regard. The first four blocks are identical and use the same scales to evaluate each of the four variants tested. In their design, seven-stage scales of semantic differential and seven-stage scales in the Likert format are used. For the creation of the scales, the previously cited study was used to establish the differences in the perception of two variants of advertising – created as an advertising message and created through the use of storytelling (Wirtz, 2020). The scales are adapted to the objectives of this study and the specifics of the simulated communication campaign and the audience studied.

Data on attitudes towards advertising content are collected through a modified scale to measure attitudes towards advertising (MacKenzie and Lutz, 1989), which includes three statements given by a scale of semantic differential. These are:

- (1) To what extent is this publication "understandable" to me, or "incomprehensible"?
- (2) To what extent is this publication "motivating" – "demotivating" for me?
- (3) To what extent is the message in this post "important" to me, or "unimportant"?

The main idea behind the use of this scale is related to attempts to compare how respondents perceive the generated and created content according to three main criteria – to what extent the tested variants are understandable, whether they can be defined as motivating or not based on the subjective judgments of the respondents, and how important the ideas communicated through them are for the representatives of the target audience. The common criteria by which the variants of advertising content are compared would make it possible to identify differences in the perception of generated and created content, if such differences exist at all.

When collecting data on the ratings of the individual elements of the content of the Facebook post, adapted scales from the study already mentioned above are used (Wirtz, 2020). A total of eight variables have been formulated to compare the tested variants, on which data are collected using seven-point scales in the Likert format, in which 1 is indicated "strongly disagree" and 7 is indicated "strongly agree":

- (1) The publication is interesting.
- (2) The post may make me think about whether to use the water dispensers.
- (3) After seeing the post, I would start/continue to use the water dispensers.
- (4) The image in the publication corresponds to the text.
- (5) The text and the vision make me think of the university as a "green university".
- (6) I clearly understood the message of the text of the publication.
- (7) I understood the message of the vision of the publication clearly.
- (8) The publication can motivate students to use the water dispensers.

The designed scale collects data on respondents' scores in the five zones already mentioned in the last paragraph of Chapter Two for comparison of the main characteristics of the tested variants - Alignment with the positional strategy – variable (5), Motivation – (3) and (8) and whether the content is Understandable – (2), Interesting – (1) and Consistent – (4), (6) and (7). A certain imbalance in the number of variables in the individual zones is noticeable, but in this direction, two features of the scale should be taken into account. The first is that motivation examines two groups of assessments – how respondents perceive the content in terms of its impact on themselves (3) and on the target audience (8). The second has to do with gathering data on whether or not the content is perceived as consistent. For this

purpose, data are collected on the correspondence between the visual and verbal elements of the content used (4), as well as on the impact of each of the two groups – (6) visual and (7) verbal elements. The latter is of particular importance because in the field of visual rhetoric, images play as important a role as verbal messages in conveying the meaning of the message (Sabeva, 2022, p.123).

The fifth block in the research tool includes variables that collect data on respondents' behavioral characteristics related to the use of drinking water. Users and non-users are determined by collecting data from answers to a dichotomous question. Data on the main reason for buying bottled water for drinking outside the home is collected through an open-ended question. In the subsequent coding of the collected data, the main reasons for purchase are defined. Data on six more behavioral variables were collected through operationalized variables as separate statements, for which respondents expressed a degree of agreement/disagreement on a seven-point scale in the Likert format. On this scale, 1 is labeled "strongly disagree," and 7 is labeled "strongly agree."

The designed scale collects data on the habits of the sample respondents related to the consumption of bottled water outside the home, as these habits may have an impact on the assessment of or the impact of the tested advertising content. The variables are derived based on pre-selected qualitative information from representatives of the target audience (bachelor's students from the University of Economics – Varna), which can be grouped into two main zones. These are variables related to (1) the needs for use of the advertised product and (2) the propensity to use a "free alternative", such as the drinking water dispensers in the University buildings. The statements on which the respondents in the sample expressed their degree of agreement or disagreement were:

- (1) Buying water puts a strain on my budget.
- (2) I drink enough water when I am not at home.
- (3) It is important to drink water throughout the day.
- (4) I don't feel good when I don't drink enough water.
- (5) I usually carry a reusable bottle.
- (6) If possible, I use water dispensers.

The variables included in this scale can be grouped as follows: Data on the needs of use of the advertised product are collected by variables (2), (3), and (4), and data on the propensity to use drinking water dispensers by variables (1), (5), and (6).

The sixth block of the research tool includes variables through which data are collected for the evaluation of the university's positioning strategy as a "green university". When designing the variables for this block, the relationship between the respondents' attitudes towards the concept of Sustainable Development and the assessments of the positioning of the university's brand as a sustainable brand is taken into account (White, Habib and Hardisty, 2019), as they are supposed to reflect on the level of readiness for the use of water dispensers and the importance of such a solution for respondents. On the other hand, such a relationship may have an impact on the studied variables of the tested variants for Facebook posts.

The scale in this block includes the following statements, for which respondents express the degree of agreement/disagreement on a seven-point scale in the Likert format, in which 1 means "strongly disagree" and 7 – strongly agree:

- (1) I can define the university as "green" (1)
- (2) The university's environmental initiatives are important to me (1)
- (3) Environmental protection is important to me (2)
- (4) Buying bottled water harms nature (2)
- (5) The use of water dispensers helps to protect nature (2)
- (6) If I use dispensers, I protect nature (3)
- (7) With my personal actions, I can help protect nature (3)

These statements describe (1) the way respondents perceive the positional strategy of the University, (2) the importance of the concept of Sustainable Development for respondents and (3) the relationship between the belief that the respondent's actions can influence the achievement of the Self-efficacy goals and the belief that they can control their own behavior (Locus of Control), adapted for the study by the tool used in the survey (Glanz, Rimer and Viswanath, 2002).

The seventh block includes demographic variables such as gender, course, administrative group, faculty number (for the distribution of bonus points, through which the completion of the questionnaire is incentivized), and the bachelor's program in which they are trained. The rest of the demographic characteristics of the respondents are not relevant to the survey, and therefore, no data are collected for them.

During the retests of the research instrument, it was found that the respondents understood the formulated statements well. It is also found that giving answers on seven-point scales does not make it difficult for them and that respondents can distinguish border positions from each other, which does not require their transformation into five-point scales. On the other hand, the tested stimuli included in the online survey are clearly visible on the devices through which the respondents in the focus group access the research tool. This means that the respondents in the survey can fully perceive in a "real environment" the variants of Facebook publications used as incentives, and respectively give their ratings for all elements of the generated and created marketing content.

3.2. Profiling of samples in both waves of the survey

The data in the first wave of the survey were collected at the end of April 2023, and respondents received a link to the online survey through the e-learning platform. A follow-up check of the completed data shows that the same respondent is not likely to have completed the online form more than once. The sample includes 136 respondents. 52 of them are studying in the second year and 84 in the third year. At the time of data collection, second-year students had not yet studied specialized marketing disciplines. For third-year students, two groups can be distinguished. In the first group are 36 marketing students, and in the second, 48, who are trained under the Digital Media and PR program. Men in the sample are 16%, and their relative share is similar to that in the general population. Of all respondents, 94% usually buy bottled water when they are away from home.

Based on the data gathered through an open-ended question, seven main reasons why respondents buy bottled water for drinking are summarized. These are (1) thirst, (2) feeling dehydrated, (3) forgotten reusable bottle, (4) lack of a water source, (5) reluctance to carry a reusable bottle, (6) having no other alternative, and (7) for convenience. Two of these reasons are most often cited – (1) and (3), with relative shares of 42% and 32%, respectively. Since the data for both variables were collected on nominal scales, it was found that the relationship between the course in which they were trained and the reason for purchasing bottled water could not be interpreted, because the level of significance of the Contingency coefficient was greater than the perceived error ($0.280 > 0.05$, $n=136$).

The results of the distribution of respondents' responses to their drinking water consumption habits are shown in Table 3.1. Based on the arithmetic averages (with a minimum value of 1 and a maximum of 7), two main trends can be deduced. On the one hand, it can be seen that the purchase of bottled water cannot be defined as additionally burdening the budget of the respondents (Mean = 3.83) – i.e., the choice between the purchase of bottled water and the use of an alternative is not determined by financial motives. More than half of respondents indicated that they do not drink enough water during the day (Mean = 4.35) and rarely carry their own reusable bottle (Mean = 4.02). On the other hand, 70% of respondents

in the sample usually use dispensers (Mean = 5.35), and for 80% of them, it is important to drink enough water during the day (Mean = 6.07).

Table 3.1.
Consumption habits related to drinking water consumption – first wave

Main reason	Average	Standard deviation
Buying is squeezing my budget	3.83	2.176
I drink enough water	4.35	1.910
It is important to drink enough water	6.07	1.441
I don't feel good without water	5.48	1.896
I carry my own bottle	4.02	2.292
I use dispensers when there are	5.35	1.899

Source: own calculations

Based on the comparison of these two trends, it can be concluded that the use of dispensers is important for respondents, and they perceive them as a valuable alternative to buying bottled drinking water. What's more, the three factor variables that can motivate the use of dispensers as an alternative to buying water – (1) carrying your own bottle, (2) the cost of buying bottled water, and (3) the discomfort of thirst correlate with the resulting variable – (4) the propensity to use dispensers when available. In the study of these relationships in the correlation matrix, Kendall's tau_b values are respectively at (1) – (4) 0.355, at (2) – (4) 0.199, and at (3) – (4) 0.250, at $p < 0.001$. This shows that the habit of carrying one's own bottle moderately determines the propensity to use dispensers, while the relationship with the other two factors is relatively weak. The other two factor variables – the importance that respondents attach to drinking water and the habit of drinking enough water – were not associated with the result variable; it can be assumed that they do not influence the decision to use water dispensers at the university.

The assessments of the University's positional strategy as a "green university" and the respondents' personal commitment to this strategy are summarized in Table 3.2. Average ratings again range from a minimum value of 1 to a maximum of 7.

Table 3.2.
Embracing the ideas of sustainable development

Attitudes towards environmental problems	Average	Standard deviation
The university is "green"	5.01	1.554
Eco initiatives of the university are important to me	5.84	1.569
Nature conservation is important	6.09	1.396
Bottled water harms nature	5.36	1.816
The use of dispensers protects nature	6.00	1.580

My actions contribute to the protection of nature	6.36	1.433
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Source: own calculations

As can be seen from the table, the majority of respondents – over 70% – perceive the university as "green" (Mean = 5.01), and its environmental initiatives as important for them (Mean = 5.84). For 90% of the sample participants, environmental protection is important (Mean = 6.09). At the same time, there is a strong conviction that respondents can contribute to environmental protection through their actions (Mean = 6.36). Moreover, the results of a correlation analysis of these data show that the resulting variable – (4) the belief that the use of water dispensers helps to protect nature shows moderate to strong relationships with the factor variables – (1) the degree of importance of environmental protection, (2) the perceived importance of the university's eco-initiatives and the belief that the that (3) the respondents' actions can have an impact on environmental protection. These conclusions are based on the values of Kendall's tau_b, which are respectively at (1) – (4) 0.411, at (2) – (4) 0.472, and at (3) – (4) 0.523, at $p < 0.001$.

Based on the analysis of the data collected through the described two scales – "consumer habits" and "attitudes towards the positional strategy of the University", two main conclusions can be drawn related to the subsequent analysis of the respondents' ratings of the tested generated and created versions for publications for the Facebook page. The first is that the respondents are not indifferent to the alternative provided for the use of drinking water dispensers at the University, and that they are motivated to use them, as it brings added value to them. The second conclusion is that students perceive the university as "green" and demonstrate a high degree of involvement in its environmental initiatives. This, in turn, can determine them as interested in the messages communicated with them through the tested publications, and their answers, as relevant to the goals of the research.

The second wave of the survey is conducted in a similar way to the first. The data are collected again within the subjects studied by the sampled respondents, with whom the same apparent recruitment goals are communicated. Each of the participants was sent a link to the research tool in Google Forms, again collecting information about the faculty numbers and administrative groups of the students under the pretext of giving additional points to their current control. This, in practice, serves two specific purposes. The first is to motivate the participants in the study to give answers relevant to their subjective judgments, and for this purpose, before the start of the study, it is announced that the answers will be checked, including through included control questions (which are not included in the research tool), and additional points are awarded only to those who have correctly completed the research instrument. The second goal is related to checking whether each of the respondents fills in only one questionnaire. In this wave of the survey, the data is collected in the second half of April 2024.

In the second wave of the survey, 115 respondents participated, again students studying in the second and third year in the bachelor's programs in "Marketing" and "Digital Media and PR", as well as, unlike the first wave, students studying in a master's program in "Advertising and Media Communications". However, the inclusion of a new quota in the sample should not change the profile of the audience in terms of accumulated marketing competences, since the trainees in this program come from other fields of higher education, and the knowledge and skills they have are comparable to those of second- and third-year students. The reason for this to be done is the smaller number of students who study (actively attend) the discipline that forms the sample.

Men in the sample are 20% and women 80%, and in this case, there is no deviation from the distribution of respondents by gender compared to what was found in the sample from the first wave. The same can be said in relation to the distributions to bachelor's programs

in which the respondents are trained. The majority of them - 68% - are trained in the program in Digital Media and PR, 17% in the program in Marketing, and 16% in the Master's program in Advertising and Media Communications. A comparison of the quota characteristics – gender and the program in which the respondents are trained shows that there are no significant differences in the relative shares of these characteristics in the samples used in the two waves of the survey. It should also be pointed out that 98% of the respondents in the sample buy bottled water, which gives grounds to be identified as buyers and, respectively, as interested in offering an alternative by providing the opportunity to use drinking water dispensers in the University buildings.

The answers to the open-ended question shed light on the habits and attitudes of respondents in the sample of the second wave of the survey to buy bottled water. In the second wave, the study cites seven main reasons – these are (1) when they forgot to bring water from home, (2) when they are thirsty, (3) because they can afford it, (4) because it is convenient, (5) when they do not carry a reusable bottle or glass, (6) when there are no dispensers, and (7) because of the taste of bottled water. It is noteworthy that, although formulated differently, the reasons for buying bottled water overlap with two exceptions – in the first wave of the study, the reluctance to carry a reusable bottle was cited as a reason, which did not occur in the second wave, in which two other reasons were indicated, which did not occur in the first wave – (3) and (7). The most frequently cited reasons among the respondents from the second wave for the purchase of bottled water are three: thirst (40%), because it is convenient (15.5%), and in cases where they do not carry a reusable bottle with them (19.8%). Here, too, as in the first wave of the study, the relationship between the course in which the respondents are trained and the reason for buying bottled water cannot be interpreted, because the level of significance of the Contingency coefficient is greater than the perceived error ($0.401 > 0.05$, $n=115$).

Table 3.3. The results of the comparison of the responses of the respondents from the two waves of the survey related to their habits and attitudes to buy and consume bottled drinking water are presented. As can be seen from the results of the variables included in the scale, no big differences were found between the two waves.

Table 3.3.

Comparison of consumption habits related to drinking water consumption – first and second wave

The main reason for using dispensers	First wave		Second wave	
	Average	Standard deviation	Average	Standard deviation
Buying is squeezing my budget	3.83	2.176	4.25	2.131
I drink enough water	4.35	1.910	4.64	1.858
It is important to drink enough water	6.07	1.441	6.17	1.391
I don't feel good without water	5.48	1.896	6.03	1.506
I carry my own bottle	4.02	2.292	3.73	2.289
I use dispensers when there are	5.35	1.899	5.43	2.000

Source: own calculations

The results of the processing of the data from the second wave also allow us to conclude that the use of dispensers is important for respondents, and they perceive them as a valuable alternative to the purchase of bottled drinking water. And here, the three factor variables that can motivate the use of dispensers as an alternative to buying water – (1) carrying your own bottle, (2) the cost of buying bottled water, and (3) the discomfort of thirst correlate with the resulting variable – (4) the propensity to use dispensers when available. In

the study of these relationships in the correlation matrix, Kendall's tau_b values are respectively at (1) – (4) 0.398, at (2) – (4) 0.289, and at (3) – (4) 0.240, at $p < 0.001$. This shows that in the second wave of respondents, too, the habit of carrying their own bottle moderately determines the propensity to use dispensers, while the relationship with the other two factors is relatively weak. For the other two factor variables – (5) the importance that respondents attach to drinking water and (6) the habit of drinking enough, the level of significance of the correlation coefficients, as in the first wave, does not allow for the interpretation of relationships; therefore, they do not determine the use of dispensers as an alternative to bottled water.

A comparison of the assessments of the University's positional strategy as a "green university" and the respondents' personal engagement with this strategy in the first and second waves of the survey is summarized in Table 3.4. Average ratings again range from a minimum value of 1 to a maximum of 7. As can be seen from Table 3.4, there is an increase in the degree to which respondents from the second wave perceive the university as "green" (Mean = 5.01 > 5.69), and its environmental initiatives as important to them (Mean = 5.84 > 6.34).

For the participants in the sample of the second wave, environmental protection remains important, although there is a slightly lower degree of agreement with this statement compared to the results of the first wave (Mean = 6.09 < 5.71). At the same time, there was also a slight change in the belief that respondents can contribute to environmental protection through their actions (Mean = 6.36 < 6.11). Here, as with the results of the first wave of the survey, there are slight changes, although general trends can be found that deserve to be commented on.

Table 3.4.

Comparison of the perception of sustainable development ideas among respondents from the first and second waves

Attitudes towards environmental problems	First wave		Second wave	
	Average	Standard deviation	Average	Standard deviation
The university is "green"	5.01	1.554	5.69	1.321
Eco initiatives of the university are important to me	5.84	1.569	6.34	1.134
Nature conservation is important	6.09	1.396	5.71	1.509
Bottled water harms nature	5.36	1.816	6.35	1.218
The use of dispensers protects nature	6.00	1.580	6.42	1.252
My actions contribute to the protection of nature	6.36	1.433	6.11	1.204

Source: own calculations

The first difference is related to the change in the ratio of expressed agreements with the statement that the University's environmental initiatives are important for respondents, and the extent to which the importance of nature conservation is determined. While in the first wave, the respondents expressed less agreement with the statement that the environmental initiatives of the University are important to them compared to the determined importance of nature conservation, for the respondents from the second wave, it is the opposite – they agree with the first statement less than with the second. This, in practice, means that the perceived relative importance of the University's environmental initiatives is higher for respondents from the second wave than for those from the first wave.

The second, more important difference is related to the change in the degree of agreement between the two waves with the statement that, through their actions, respondents can contribute to the protection of the environment. The lower degree of agreement with this statement among the respondents of the second wave, compared with the increase in the perceived importance of the University's environmental initiatives, as well as the higher perceived importance of the use of dispensers as a means of nature conservation, indicate a decrease, albeit to a small extent, of the sense of control over the ecological balance that the respondents of the second wave demonstrate. In this regard, the strengthening of the perception of the role of institutions in relation to the individual in these processes can also be commented on.

The results of a correlational analysis of the data from the second wave of the study show that the result variable – (4) the belief that the use of water dispensers helps to protect nature shows moderate to strong relationships with the factor variables – (1) the degree of importance of environmental protection, (2) the perceived importance of the university's eco-initiatives and the belief, that (3) the respondents' actions can have an impact on environmental protection. These conclusions are based on the values of Kendall's tau_b, which are respectively at (1) – (4) 0.536, at (2) – (4) 0.505, and at (3) – (4) 0.529, at $p < 0.001$.

Based on the analysis of the data from the second wave and their comparison with those from the first, the main conclusions already made can be confirmed – that the respondents are not indifferent to the alternative provided for the use of drinking water dispensers at the University and that they are motivated to use them, as for them it brings added value, As well as the fact that students from both waves perceive the university as "green" and demonstrate a high degree of involvement in its environmental initiatives. At the same time, however, the findings, although minimal differences in the degrees of agreement of the statements in the two scales used – "consumer habits" and "attitudes towards the positional strategy of the University" – indicate the presence of minimal differences in the profiles of the respondents in the two waves, especially concerning their sense of control over the ecological balance. Despite these differences, however, the answers to the respondents' questions in both waves of the survey, as well as on the two scales used, give us reason to assert that they can be perceived as a target audience of the simulated campaign, through which differences in the perception and impact of the generated and created content are sought. There are several reasons for this conviction.

First, all respondents in both samples are trained at the University of Economics – Varna, and the University can (there are reasons) to communicate marketing messages with them. Secondly, the respondents in both samples demonstrate the presence of consumer habits with the communicated product, as well as with its alternative – bottled water for drinking and consumption of free water provided by the University. Moreover, the analysis of the answers to the open and closed questions shows the presence of a need for the communicated product in both the first and second waves of the survey. Thirdly, respondents in both waves of the survey demonstrate not only a lack of indifference but also a high degree of commitment to topics related to environmental protection. The data in Table 3.4 show that respondents not only identify the University's environmental actions as important to them, but also recognize specific actions as environmentally oriented – such as providing a free alternative to bottled water, which they have a continuous need for. At the same time, they agree with the statement that the use of bottled water for drinking harms the environment. In this regard, it can be argued that the respondents in both waves of the survey demonstrate a high degree of involvement in the topic of environmental protection and perceive both the University where they study and themselves as stakeholders in the processes related to the implementation of the concept of Sustainable Development, at least as far as its environmental pillar is concerned.

From what has been said so far and based on the profiling of the samples in the two waves of the survey, the following more important generalizations can be made related to the use of students as a "target audience" of the simulated campaign:

There are the necessary conditions for respondents in both waves of the survey to perceive the University of Economics – Varna as an "authentic" source of the messages communicated with them through the created and generated content for a Facebook post;

Respondents in both waves of the survey can demonstrate a high degree of interest in the main and additional messages communicated through the created and generated content.

There are marketing grounds for the generated and created content to be communicated with the respondents in both waves of the survey – both needs to be met through the product offered in the communication, and the presence of media habits related to the communication channel used can be identified.

Both the University and the respondents can be identified as stakeholders within the communication process in the simulated campaign.

Those conclusions may also serve as arguments for the assertion that the respondents included in the two samples are in a position to make subjective judgments relevant to the purposes of the study about the content tested. As they are not aware of the actual reason for the collection of empirical data, based on their replies, a comparison of the ways of perception of generated and created content could be carried out, as well as possible differences in the use of the two approaches to the production of marketing content.

3.3. Similarities and differences in the perception of generated and created marketing content

By its very nature, the main objective of this study – to compare the possibilities of using genAI tools to generate marketing content and create it by teams of people – can be fulfilled by conducting a retest of the resulting content variants. In this sense, in the design and in the logic of the research carried out in both waves, we rely on exactly such an approach, which has already been described in detail in another of our works (Ivanov, 2021b) And for this reason, we will not dwell on its features, requirements for conducting, as well as on the arguments "for" and "against" the validity of the results obtained through retests of advertising content. Moreover, the conceptual model and design of the study described in the previous chapter, as well as the research tool presented in the first paragraph of this chapter, clearly show our belief that retests can be perceived as a sufficiently reliable tool for preliminary comparison of marketing content variants for a specific campaign in cases where these variants cannot be tested within a real campaign in real environments and target audiences.

To achieve this goal, the advertising incentives designed and developed within the preparation of the two waves of the study – the groups of created and generated content in both waves – need to be compared both in pairs within the collected empirical data for each of the studies, and each with the other three in each of the two stages of the study. The reason for such a decision is the assumption that there is a possibility that differences will be found not only between the two groups of stimuli, but also within each of the pairs of tested variants. In other words, it is quite possible to identify differences and, respectively, to find similarities between the individual pairs of content, as well as within each of these pairs of variants. And since there is such a possibility, it would be good to check it.

The second clarification that needs to be made is that the two groups of stimuli are tested only based on the empirical data collected in the respective wave of the study. As both the incentives and the samples are different, it would be necessary to look for common trends and, therefore, differences in the comparison of the results of the two waves of the survey. This, of course, does not give full grounds for drawing strong conclusions about the

advantages and disadvantages of using genAI tools to create marketing content and vice versa when obtaining similar results from the data collected by the two waves. In any case, on the basis of the results of the survey, conclusions can be drawn only at the time of each wave, and these results can be attributed mainly to the respondents included in each of the two samples. Moreover, in the way the survey was designed, organized and conducted, it is difficult to look for representativeness of the results to any large and specific target population, since in essence the designed samples in both waves include all active students who study in the same elective disciplines and in this sense, it can be argued that the entire target population of the study is covered. For the first wave, these are the students from the bachelor's programs in "Marketing" and "Digital Media and PR", who are trained in the discipline "Event Marketing", and for the second - the students from the next year of study, who attend the same elective course, as well as the students studying for masters in the elective discipline "Creative Strategies in Branding". However, the use of the designed design of this study gives us reason to express hope that through such an approach, some general trends related to the use of genAI can be outlined, which can then be tested in real situations and in real marketing campaigns. Two arguments can be cited as a reason for this. The first is that the purpose of the study is not to test the reactions of a specific population to seek representativeness of the results. And the second – the lack of a uniformly perceived volume of respondents when conducting retests of marketing content, both in practice and in theory, allows working with samples with volumes similar to those in both waves (Ivanov, 2021).

On the other hand, it should be emphasized that both in the creation and generation of the content, and in the collection of empirical data for the evaluations of this content, the same approaches are used and the research process is carried out in similar times, environments, and conditions, over a period of one year. The common data collection tool and comparison criteria, as well as the statistical procedures applied, can, to a certain extent, ensure the reliability of the results obtained, as well as the fulfilment of the objectives of the study. The variants tested in the first wave of the study, which were used in the research instrument, are presented in Figure 3.5.

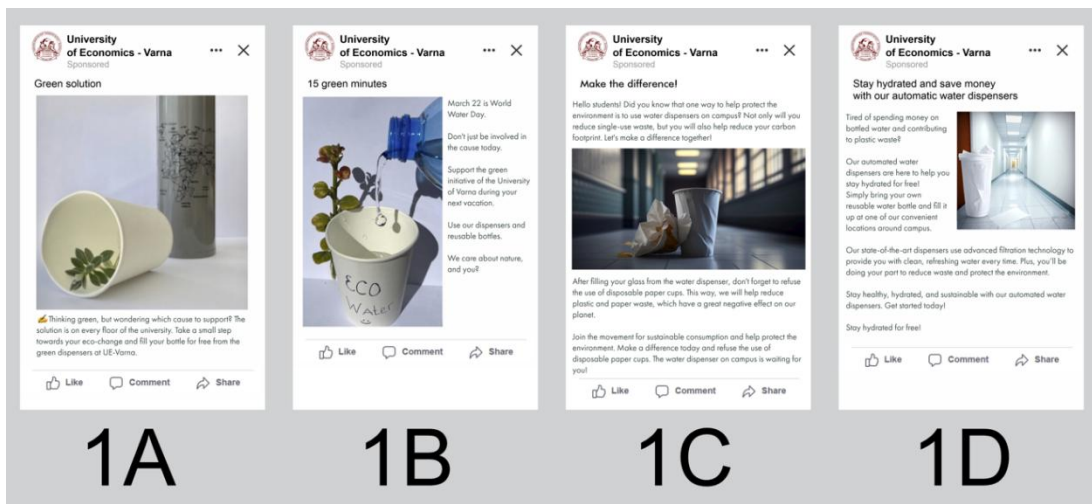


Figure 3.5. Incentives in the first wave of the survey
Source: Own development

As already stated, the first two options in Figure 3.5. (1A and 1B) were created by teams of students, while the other two (1B and 1D) were generated using genAI tools. The research tool is designed in such a way that when collecting data from respondents in each of the two waves, they can give their subjective judgments about the content they viewed by the

groups of variables by which the variants of generated and created content included in the respective study are compared.

Before proceeding to the interpretation of the results of the conducted pretest, let's take a look again at the research tool used for collecting empirical data (Appendix 2), as well as at the objectives that the scales designed in it meet for collecting subjective judgments for the tested content. The comparison of the tested variants is carried out according to two main groups of criteria: (1) the quality of the created and generated content, and what is (2) its impact. Since quality is a rather vague and subjectively perceived concept, it is common practice to set a set of criteria that the compared objects must meet when examining it and, in fact, the assessment of whether or not they can be defined as having the desired quality is carried out by comparing the degree of compliance of the specific characteristics with the criteria chosen for comparison. In this particular case, in order to compare the quality of the tested variants with each other, it was decided to use the variables on the basis of which the MacKenzie and Lutz scale was created to study the attitude towards advertising content (MacKenzie and Lutz, 1989). Arguments for this are rooted in our understanding that any marketing content has quality if it meets three important conditions: (1) to be understandable to the audience, (2) to motivate them to make a specific change, and (3) to be important for the audience itself. Since in the cited study these three variables are operationalized by the semantic differential scale, in this study it was decided to follow the same approach.

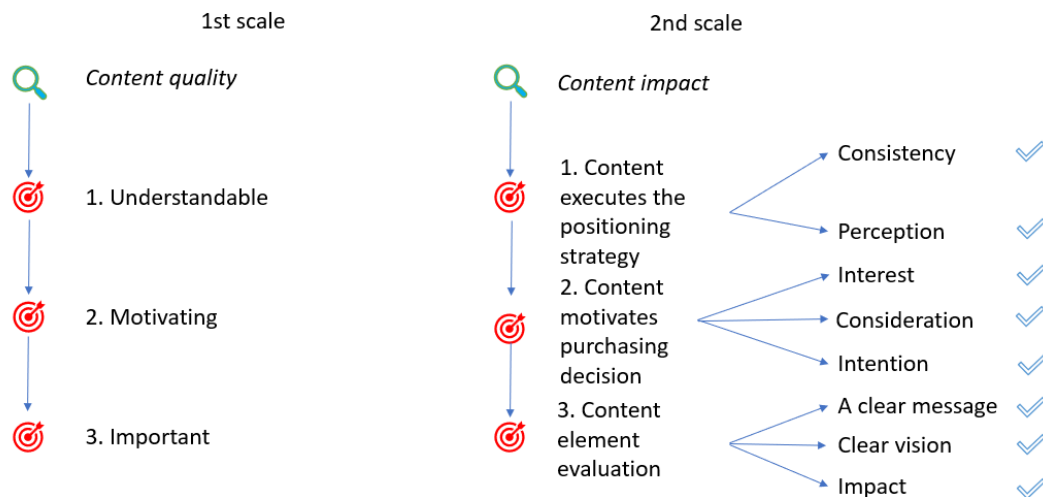


Figure 3.6. Design of scales to evaluate the tested variants

Source: Own development

The collection of subjective assessments of the degrees of compliance and, respectively, of the non-compliance of the tested variants with these three characteristics allows a comparison between the generated and created content based on the subjective perception of their quality by the respondents according to these three criteria. The ratings given by respondents for the four variants of the tested content can range from 1 to 7, and the closer they are to 1, the greater the degree of non-compliance with this criterion, and the closer to 7, the greater the degree of compliance (Figure 3.6).

The second scale included in the research tool also tests the other group of characteristics of marketing content related to subjective judgments about its impact on the audience (Figure 3.6). Since two groups of goals were assigned to its authors when designing the tested content – to fulfill the positional strategy of the campaign client and to provoke a purchase decision, this scale includes three types of statements that form the subscales. The first group is related to whether and to what extent, according to the respondents, the tested

content variants fulfill the positional strategy of the contracting authority – in this particular case, they express their degree of agreement for each of the four options, and to what extent they find in the messages the characteristics of an environmentally responsible University. In this regard, data is also collected on respondents' assessments of whether the visual and verbal elements of the publication correspond to the characteristics they attribute to a brand with such an identity.

The second group contains three statements, which collect data on the respondents' assessments of the extent to which they are interested in the communicated advantages – how interesting the messages are, whether to use the dispensers, and whether they would use them under the influence of the communicated arguments. As the test content is characterized to convey messages through both verbal and visual elements, the third group of statements covers assessments related to whether and to what extent the visual and verbal elements convey clear and consistent messages and would be understandable and impactful to the target audience of the simulated campaign.

The reliability of the scales used is tested by the Cronbach Alpha criterion, as in Table 3.5. presents the obtained values for each of the two scales for each of the four marketing content variants tested in the first wave of the study. As can be seen from the results in the table, the Cronbach Alpha values for all scales used in the first wave range from 785 to 940, which indicates a high degree of reliability of the internal consistency of the scales in the instrument used. In all eight scales studied, no variables were found; when removed from the respective scales, the values of the Cronbach alpha would increase, which indicates that the scales reliably measure both the perceived quality of the tested content and the assessments of its potential impact on the audience. At the same time, the correlation coefficients between the individual variables that are included in the scales used are greater than 0.400, which indicates that they form each of the scales used in the study in this wave.

Table 3.5.
Reliability of the Perceived Quality and Impact Scales of Tested Content – First Wave

Options	1A	1B	1C	1D
Content Quality Rating Scale				
Cronbach's Alpha	.785	.842	.874	.904
Content Impact Assessment Scale				
Cronbach's Alpha	.940	.962	.901	.875

Source: own research

The validity of the measurement was verified using confirmatory factor analysis. Its application in this case is permissible because the first scale is composed of three variables and the second of eight, with the ratio of respondents in the sample to the number of variables ($136/8=17$) exceeding the recommended range of 10 and 15 respondents in the sample used for each of the variables. The content impact scale consists of three subscales (Figure 3.6). To check its validity, a confirmatory factor analysis was performed using the method of the main components and orthogonal rotation according to the Varimax method with Kaiser normalization. Three factors are given, and after the rotation, Factor 1 explains 38%, Factor 2 - 29%, and Factor 3 - 19% of the variance. The proper weights of the factors after rotation are respectively 3.07 for the first, 2.34 for the second, and 1.58 for the third factor. The Kaiser-Meyer-Olkin Measure of Sampling Adequacy is 0.880, which exceeds the recommended value of 0.60, and the Bartlett's sphericity test is significant ($p<0.001$).

Since the content quality scale consists of three variables, it does not contain subscales. To verify its validity, a confirmatory factor analysis was performed again using the principal component method and orthogonal rotation using the Varimax method with Kaiser

normalization. One factor is given, and after rotation, it explains 70% of the variance. The curb weight of the factor after rotation is 2.10. The Kaiser-Meyer-Olkin Measure of Sampling Adequacy is 0.655, which exceeds the recommended value of 0.60 and indicates that the number of variables for the factor is sufficient. The Bartlett test for sphericity is significant ($p < 0.001$), and the values of the coefficients in the correlation matrix exceed 0.400, which confirms that the variables in the scale relate to each other and fall within the same factor. The reliability and validity tests carried out show that the methodology applied allows for further analysis of the data collected from the sample. Since the results of the confirmatory factor analysis for the other three stimuli in the research instrument are similar and confirm the conclusions already made about the validity of the identical scales, there is no need to report them separately here.

To check the differences in the respondents' subjective judgments for the tested content variants, the nonparametric Friedman test for three or more correlated samples is applied. The reasons for using this test are that the responses of the same sample of respondents at four points are analyzed (Ganeva, 2016, p. 503) – these are the answers on each of the two scales for each of the four variants of the tested content. The chosen procedure seeks an answer to the first research question – whether there are statistical differences in the frequency distributions of respondents' responses in the content quality assessments for the four tested variants. The results of the Friedman test for the four content quality assessment scales show that there are sufficient grounds to establish differences in the frequency distributions of the responses. through which the quality of generated and created content is evaluated (value of the chi-square test (3) = 27.344, $p < 0.001$). This requires a post hoc test to determine where the differences in the distribution of respondents' ratings in the sample are. Based on the average values of the ranks, it can be concluded that there are differences in the ratings of the quality of the content of 1B (Men rank = 2.27) and 1A (Men rank = 2.96), but for the rest of the differences, it is necessary to conduct several Wilcoxon rank tests to test for differences in pairs. In this case, six Wilcoxon tests ($4 \times (4-1)/2$) should be performed, using the Bonferroni correction for alpha in determining their statistical significance (Ganeva, 2016:506). The bonds tested are 1A-1B, 1A-1B, 1A-1D, 1B-1C, 1B-1D, and 1B-1D (Figure 3.5.). If the Wilcoxon test is significant for each of the pairs, the magnitude of the effect (r) is calculated according to the formula:

$$r = \frac{z}{\sqrt{N}} \quad (1)$$

According to Cohen's interpretation, values above 0.7 indicate a magnitude of the effect much larger than typical, between 0.5 and 0.7 – greater or greater than typical, 0.3 and 0.5 – medium, and between 0.1 and 0.3 – small or smaller than typical (Ganeva, 2016, p. 258).

Table 3.6.

Differences in ratings of the quality of generated and created content – first wave

Options	p	Z	r	Magnitude of effect	Differences identified
1A – 1B	0.000	5.188	0.45	Average	Yes
1A – 1B	0.000	4.248	0.37	Average	Yes
1A – 1D	0.000	3.996	0.35	Average	Yes
1B – 1C	0.900	0.126	X	X	Not
1B – 1D	0.612	0.508	X	X	Not
1B – 1G	0.434	0.634	X	X	Not

Source: own research

The summarized results of the post hoc tests are presented in Table 3.6. As can be seen from the table, differences are found only between the assessments for the first variant of the quality of the created content (1A) and the other three options, and the size of the effect, according to Cohen's interpretation, can be defined as average. At the same time, the quality assessments of the other three variants of marketing content cannot comment on the existence of statistical differences in the frequency distributions of the responses of the respondents in the sample. Based on the data analysis presented in Table 3.6. It can also be concluded that respondents differ in the quality of variations of the content tested, but these differences cannot be explained by whether the content was generated or created.

Table 3.7.
Differences in Impact Assessments of Generated and Created Content – First Wave

Options	p	Z	r	Magnitude of effect	Differences identified
1A – 1B	0.000	4.181	0.38	Average	Yes
1A – 1C	0.000	4.042	0.37	Average	Yes
1A – 1D	0.001	3.349	0.31	Average	Yes
1B – 1C	0.057	1.902	X	X	Not
1B – 1D	0.633	0.477	X	X	Not
1B – 1G	0.088	1.705	X	X	Not

Source: own research

Similarly, the differences in respondents' assessments of the variants of generated and created content based on the data collected through the Impact Assessment Scale are also examined. The results of the Friedman test for the four scales for assessing the impact of content show that there are sufficient grounds to establish differences in the frequency distributions of the responses by which the impact of generated and created content is assessed (chi-square test value (3) = 26.175, $p < 0.001$). This again requires a post hoc test to determine where the difference in the distribution of respondents' ratings in the sample is. Based on the average ranks, differences were found between the impact assessments of the first 1A (Men rank = 2.03) and the third tested 1B variants (Men rank = 2.81), but to establish differences in the scores of all tested variants, six Wilcoxon tests were conducted, as well as in the analysis of the results of the first scale.

As can be seen, the results in Table 3.7 show that the respondents' assessments of the impact of the tested content are similar to those of the out-of-the-box quality assessments. Here again, differences in the impact assessments of the first option (1A) and the others can be commented on, and no such differences are found in the other three pairs. that differences in respondents' subjective judgments are not due to whether the content was created or generated by genAI tools, but to other factors. In connection with the observed presence and absence of differences in the respondents' assessments of the tested content variants, one more thing should be clarified. The task of the designed study is to identify the presence or absence of differences in the subjective perceptions of the generated and created content, and not to analyze what these differences are, if any. This is because the main research question is whether significant differences can be found in the use of marketing content from the point of view of reception and impact on consumers. created by teams of professionals or generated through genAI tools.



Figure 3.7. Incentives in the second wave of the study
 Source: Own development

We have already pointed out that when collecting empirical data in the second wave of the study, the same tool is used, in which only the tested stimuli are replaced. They can be viewed in Figure 3.7.

The first two versions of the figure (2A and 2B) were created by teams of students, and the process of creating them is identical to that of the first wave. Also, the other two variants (2C and 2D) were generated for the second wave in a similar way through the use of genAI tools, and the final visions were completed by the same graphic designer, without changing the content. The analysis of the data collected through the two scales – for quality assessment and for content impact assessment – uses the same procedures as in the first wave.

Table 3.8.
Reliability of Perceived Quality and Impact Scales of Tested Content – Second Wave

Options	2A	2B	2C	2D
Content Quality Rating Scale				
Cronbach's Alpha	.848	.808	.896	.869
Content Impact Assessment Scale				
Cronbach's Alpha	.937	.954	.960	.967

Source: own research

The reliability of the scales used in the sample in the second wave of the study was tested by Cronbach's Alpha, as in Table 3.8. presents the resulting values for each of the two scales for each of the four marketing content variants tested. As can be seen from the results in the table, the Cronbach Alpha values for all scales used in the second wave range from 808 to 967, which indicates a high degree of reliability of the internal consistency of the scales in the instrument used and in this sample. Again, no variables were found in the eight scales studied, with the removal of which the values of the Cronbach alpha would increase from the corresponding scales. This indicates that the scales reliably measure respondents' perceived quality of the tested content, as well as estimates of its potential impact on the audience. Moreover, the correlation coefficients between the individual variables that are included in

the scales used are greater than 0.400, which indicates that they form each of the scales used in the second wave.

The validity of the measurement for the second wave sample is verified by confirmatory factor analysis. Its application here is also admissible, since the first scale is composed of three variables and the second of eight, and the ratio of respondents in the sample to the number of variables ($116/8=14.5$) falls within the recommended range of 10 and 15 respondents for each of the variables to the sample volume. To verify the validity of the content impact scale, which consists of three subscales, a confirmatory factor analysis using the principal component method and orthogonal rotation using the Varimax method with Kaiser normalization was applied. Three factors are given (Figure 3.6), and after rotation, Factor 1 explains 35.9%, Factor 2 – 31.7%, and Factor 3 – 16.9% of the variance. The proper weights of the factors after rotation are respectively 2.87 for the first, 2.54 for the second, and 1.35 for the third factor. The Kaiser-Meyer-Olkin Measure of Sampling Adequacy is 0.886, which exceeds the recommended value of 0.60, and the Bartlett test for sphericity is significant ($p<0.001$).

To check the validity of the Varimax scale for the quality of the content, a confirmatory factor analysis was made again using the method of the main components and orthogonal rotation according to the Varimax method with Kaiser normalization. One factor is given, since there are no subscales in the scale, and after rotation, it explains 72% of the variance. The curb weight of the factor after rotation is 2.31. The Kaiser-Meyer-Olkin Measure of Sampling Adequacy is 0.701, which exceeds the recommended value of 0.60 and proves that the number of variables for the factor is sufficient. The Bartlett test for sphericity is significant ($p<0.001$), and the values of the coefficients in the correlation matrix exceed 0.400, which confirms that the variables in the scale relate to each other and fall within the same factor. The tests carried out for the reliability and validity of the measurement show that the applied methodology allows for further analysis of the data collected from the sample in the second wave of the survey. Here, too, the results of the confirmatory factor analyses of the data collection scales for the other three stimuli in the research instrument are similar and confirm the conclusions already made and do not need to be reported separately.

The results of the Friedman test for the four scales for assessing the quality of content show that in the sample for the second wave of the study, there are insufficient grounds to establish differences in the frequency distributions of the responses by which the quality of generated and created content is assessed (chi-square test value (chi-square test value (3) = 6.219, $p>0.001$). This, in practice, means that for the respondents from the sample in the second wave of the survey, there are no differences in the perceived quality of the generated and created marketing content in the simulated campaign.

However, when analyzing the results of the use of the Friedman test for the four scales for assessing the impact of content on the target audience of the campaign, it can be argued that such differences exist in terms of the frequency distributions of respondents' responses in relation to their assessments of the impact of the tested content (chi-square test value (3) = 11.048, $p<0.001$). This again requires a post-hoc test to determine where the difference in the distribution of respondents' ratings in the sample is. Based on the average values of the ranks, it can only be concluded that there are differences in the quality assessments of the content of 2A (Men rank = 2.82) and 2D (Men rank = 2.36), but for the remaining differences, it is necessary to conduct several Wilcoxon rank tests to test for differences in pairs. In this case, six Wilcoxon tests ($4 \times (4-1)/2$) were performed, using the Bonferroni correction for alpha in determining their statistical significance (Ganeva, 2016:506). The tested connections are 2A-2B, 2A-2B, 2A-2D, 2B-2C, 2B-2D, and 2B-2D (Figure 3.5), and in the manner already indicated for the first wave, the size of the effect is determined with the established differences.

The summarized results of the post hoc tests of the content impact scale data are presented in Table 3.9. As can be seen, differences are confirmed only between the assessments for the first variant of the quality of the content created (2A) and two other variants, and the size of the effect, according to Cohen's interpretation, can be defined as small in the relationships between variants 2A-2B and medium in the 2A-2D relationship. Differences in the 2A-2B relationship cannot be commented on, since the corrected Bonferroni value for the alpha level in this case is equal to α/k or $0.05/6 = 0.008$, i.e., at $p < 0.008$ the null hypothesis is rejected. At the same time, the impact assessments between the other three pairs of marketing content options cannot comment on the existence of statistical differences in the frequency distributions of the responses of the respondents in the sample. Based on the data analysis presented, it can also be concluded that respondents differ in the impact of the variants of the tested content, but these differences cannot be explained by whether the content was generated or created, but by other factors.

Table 3.9.
Differences in Impact Assessments of Generated and Created Content – Second Wave

Options	p	Z	r	Magnitude of effect	Differences identified
2A – 2B	0.003	2.994	0.28	Small	Yes
2A – 2B	0.041	2.042	X	X	Not
2A – 2D	0.001	3.335	0.31	Average	Yes
2B – 2B	0.478	0.710	X	X	Not
2B – 2D	0.881	0.321	X	X	Not
2B – 2G	0.297	1.043	X	X	Not

Source: own research

Before proceeding to the summary of the results of the analysis of the empirical data collected in the two waves of the study, it is necessary to dwell again on some of the limitations of the study that have already been commented on, because outside the context they create, erroneous conclusions could be formulated. The first and most important of them is that the results obtained could be attributed only to the respondents included in the samples used. Check whether the content created and generated within a simulated campaign can lead to differences in assessments of its quality and impact on the audience, and not whether such differences can be highlighted at all or in a particular population. In this sense, the study carried out can be seen as an initial attempt to compare the results of the marketing content generated by teams of people and the marketing content generated by genAI tools, which variants are expected to achieve the same objectives. However, whether the conclusions and findings made on the basis of this study can be applied to other marketing situations, markets, campaigns, etc., is a completely separate issue that requires additional research and effort. However, if we look at the study as an initial attempt to identify specific differences, and hence to draw attention to the possible applications of genAI tools in the creative processes of advertising and marketing content production and the potential they have for automating it, this would fully fulfill the tasks set out here.

So, based on the results of the analysis of the empirical data collected in the two waves of the study, in view of the above-mentioned limitations of the study, the following several more important conclusions can be drawn.

First. If respondents included in the first wave found differences in the quality of marketing content (Table 3.6), then the perception of these differences is not because the stimulus tested was created within the framework of teamwork or was generated through tools with genAI. At the same time, respondents included in the second wave did not find

differences in the quality of the content created and generated, designed, and produced a year later. This, of course, allows us to conclude that in this particular case, under these conditions of designing and producing marketing content, respondents perceive differences in content created, which can be mainly due to the different degrees of handling of the pre-formulated goals and requirements by the teams involved. At the same time, however, between one of the options created and the two generated by genAI tools, respondents did not perceive differences in the quality of these options, which means that these options can be considered equivalent.

Second. In the second wave of the study, no differences were found in the perceived quality of generated and created content. If a similar conclusion can be confirmed in other studies, then it can be concluded that, all other things being equal, the use of genAI tools provides a strong alternative for creating advertising and marketing content created by teams of professionals, at least as far as the perceived quality of that content is perceived by the audience.

Third. In both waves of the study, differences were found in the assessments of the impact of generated and created content between only one of the tested variants of created content and the other three. In both cases (in both waves of the study), the magnitude of the effect is average. At the same time, however, no such differences were found between the second version of the generated content and the two versions of the generated content with genAI tools. This confirms the conclusion already reached that genAI tools can be an alternative for creating advertising and marketing content within creative processes, other things being equal, as long as the results of the study are confirmed by other studies and in other situations in different markets.

Fourth. In cases where there are no differences between the quality and impact assessments of the tested content, it can be argued that within the framework of the experiment carried out, the genAI tools "perform" equally well in performing creative tasks compared to some of the teams made up of students at the end of their studies in the Bachelor's program in Digital Media and PR. This conclusion, in itself, is enough to raise questions related to the future of genAI tools and their application in marketing practice, as well as to the training and realization of students in similar programs to the studied ones. These questions are dealt with in the last paragraph of the third chapter.

Fifth. In a series of non-parametric tests conducted with the data from the first and second samples in the study, no significant relationships were found between the subjective judgments of the respondents in the two samples about the quality and impact of the content and the studied demographic and behavioral variables. This leads to the conclusion that, at least as far as the respondents in the two samples are concerned, the differences found are not due to the demographic and behavioural characteristics studied, but to other factors for which, according to the objectives of the study, no empirical data have been collected.

3.4. Comments on the alternative use of generative AI in marketing communications

The question of whether genAI tools can be considered as an alternative to hiring Marketing and Communications graduates in the creative departments of agencies or organizations is wide open. Of course, without accumulating sufficient data both on the development of GI tools and on the attitudes and needs of advertising and communication professionals in the market, as well as without conducting additional studies, there is no way to give an unequivocal answer. In this sense, the more serious question that provokes discussion and can be placed in the focus of future research is not whether, but where and in what areas in the creation of advertising and marketing content, the use of tools with genAI would be effective enough to be used as a serious alternative to human labor.

The main difficulty in finding "quick" answers to such questions lies in the fact that, at least as far as the current theses are concerned, genAI tools are about to radically transform

the entire advertising industry and advertising research (Huh, Nelson and Russell, 2023). In what directions, however, can this change be sought? From the perspective of the opinions, theories, and predictions related to the development of AI, two possible lines can be drawn, both of which stem directly from the social and ethical aspects of the human-machine relationship.

The first possible line goes through the gradual replacement of humans with AI tools in certain areas of marketing practice – as happens, for example, with the processes of automating marketing bidding in digital distribution channels. As such processes are observed in more and more fields of marketing actions, the usual extrapolation of data from such a trend would normally lead to the prediction that, sooner or later, in all zones, human labor could be replaced by AI tools. This, of course, also touches on a large number of ethical issues, which are discussed in the first chapter. If we go down this line of reasoning, the idea is that AI tools can be seen as a "black box" in which operators enter specific tasks at the entrance and the desired results are obtained at the exit. As the development of technologies, especially as regards the user perspective of their use, makes it possible to work with different tools without users themselves either understanding or needing to understand how these tools actually work, there are no obstacles to this being related to working with AI tools.

Here, in fact, the main ethical question that arises is whether or not people must understand the nature of the tools they use to use them, or whether it is more than enough to know not how the tools work, but how to work with them. This question, in turn, is related to the dependence into which everyone falls – a person or an organization – who does not have the necessary competencies and resources to take care of the maintenance of the means with which it creates its products. As for the management perspective, this issue has long been resolved rationally through the concept that the organization should focus on the core of its business and delegate supporting and non-essential processes, such as resource logistics, to subcontractors. From this point of view, the question in this possible line of development is whether people need to retain full control over the use of the tools they use or not. Since this question is of utmost importance, we will return to it a little later.

The second line, which can be deduced on the basis of the considered opinions, concepts, and theories, goes through the definition of the human-machine relationship as symbiotic. With a relationship of this type, there is no way to seek an answer to the question of whether "machines will replace humans", since the processes of creating anything rely on the distribution of roles in stages of the same process between specialists and AI tools. In this direction, the thesis has already been considered that through AI tools, the work of specialists would become more and more efficient and productive precisely because of the transfer of the "boring" and monotonous stages of it to AI. To illustrate such an idea, a number of situations can be used in the practice of creating marketing content, such as preparing different versions of the same vision and messages, or generating a set of ideas or processing large amounts of data to extract them.

Of course, a third, intersecting line between the already outlined two is also possible. Even at this point in the development of GI technologies, it seems quite logical to assign different roles to the processes of creating marketing content, as is the practice now for those involved in these processes. When designing and executing an advertising campaign, several roles can be specified, which are performed by different specialists – such as copywriter, graphic designer, cameraman, photographer, animator, customer relations specialist, project manager, etc., throughout the process. From this perspective, some of the stages of this process can be 'outsourced' to genAI tools and others to specialists. Which roles in it and to what extent can be "ceded" to tools with genAI, however, is a question that requires further study, not only of the capabilities of such tools and the attitudes to their use in practice, but also of the

reception of target audiences of already implemented marketing campaigns, where such an application is already observed.

If we go back to the results of the study conducted here, we can see which parts of the marketing content production process genAI tools "managed" successfully and which did not. After the introduction of the assignment, the teams of students receive ChatGPT, which goes through the following stages:

(1) Generation of campaign ideas. At this stage, various ideas are generated for main and supporting messages, use of media channels, audience profiling, appropriate time for the start and end of the campaign, frequency of advertising exposures, and images used. It should be emphasized that the set of ideas for each of the mentioned elements of the campaign is practically unlimited, and their generation can be terminated at the moment in which the newly generated variants begin to become similar (but not the same) to the ones already received.

(2) Selection of ideas. At this stage, a choice is made between the most appropriate of the already generated ideas in the context of the planned campaign. A characteristic feature is that the genAI tool, in the respective assignment, can argue which specific idea would fulfill the goals and objectives set in the campaign to a greater extent than the others. It is possible to generate new ideas based on elements of those already generated that have been identified as relevant to the goals and audience of the campaign, as long as, of course, such an assignment is set.

(3) Designing the campaign. At this stage, the already selected ideas generate a sequence of specific messages that fulfill the goals and objectives of the campaign, as well as appropriate media channels and frequency for their communication. Here again, it is possible to generate different variants of the campaign design, which, within the stage, will be evaluated and ranked according to their relevance to the goals and the audience.

(4) Creation of campaign content. At this stage, different variants of the campaign content are generated. In addition to the verbal elements, assignments are formulated for other tools with genAI for the creation of the visual elements (at the time of designing the incentives for the first wave in the survey, the tool used did not have the functionality for creating visual elements of marketing and advertising content). Within this stage, an unlimited number of content variations can be generated again, which can be changed or modified according to those already set or the addition of new campaign goals and objectives.

(5) Formulation of indicators to measure the result of the campaign. At this stage, the genAI tool is able to generate a set of variables for which data can be collected to determine the effect of the campaign, as well as on the media channels already included in the design of the campaign.

(6) Adaptation of content. Here are the possibilities for the preparation of scenarios for adapting the generated content in case of unsatisfactory results on single indicators or on entire groups of indicators. Such scenarios are important when monitoring the campaign in cases where corrective action would be necessary.

(7) Evaluation of campaign results. When feeding the genAI tool with data from a real campaign, it is possible to evaluate its effectiveness by calculating the values for key performance indicators, which are set in advance. At the output, data on the results of the campaign are obtained according to pre-set measurement periods.

It can be pointed out that the seven stages described actually cover the entire process of designing, creating, and executing a marketing campaign, as well as the real and potential possibilities for each of these stages to be carried out through genAI tools. Only the first five stages are included in the design of the study presented here, due to the restrictive conditions already mentioned. As can be seen from the results of the study described in the previous paragraph, the variations generated by the genAI show similar results to some of the variations created by teams of students who worked on the same assignment.

In this regard, one more thing can be pointed out. According to the ratings given by respondents for the created and generated marketing content, at least as far as the variants tested in the first wave are concerned, cases of higher ratings for individual elements of this content are recorded in the generated compared to the created advertising creatives (Ivanov, 2023). Similar conclusions can be drawn from the aggregated results for the results tested in the second wave of the study, as can be seen from the data included in Table 3.10.

Table 3.10.

Respondents' assessments of the quality and impact of created and generated content – first and second wave

Options	1A	1B	1C	1D
Quality of the content of the variants				
Reviewers	2.69	2.20	2.16	2.22
Impact of the tested variants				
Reviewers	4.58	5.02	5.21	5.00
Options	2A	2B	2I	2D
Quality of the content of the variants				
Reviewers	1.85	2.09	1.85	2.04
Impact of the tested variants				
Reviewers	5.96	5.65	5.80	5.56

Source: own calculations

What do the results show in the table? The scale for testing the quality ratings of the content created and generated consists of three variables that are back-phrased. Since respondents give grades on a semantic differential scale for each of the statements, the maximum positive score can be 1, and the maximum negative score can be 7. When calculating the scale, the closer the average ratings are to 1, the higher the ratings for the quality of the content of the individual variants and vice versa (Appendix 3). The second scale, for impact assessments of the tested content, can take values from 1 to 7, and the closer the ratings are to 7, the greater the impact ratings and vice versa (Appendix 4).

As can be seen from the results in Table 3.10, in the first wave of the study, one of the stimuli created content (1A) received lower ratings for its quality than the other three options and for the degree to which it can influence the target audience. This can be interpreted again as a confirmation of the above conclusions about the presence and absence of differences in the perception and evaluation of the generated and created content. The table also shows that the other three variants tested in the first wave of the survey received similar assessments from the respondents, which means that they can be defined as "equivalent" to each other in the sample used and thus as having the potential to achieve similar impact effects. Which means that they would achieve very close levels of performance if used on the audience studied.

The results of the analysis of the assessments for the options used in the second wave do not differ much from those of the first. Here, the highest ratings for the quality of the variants are given to one from the group of created (2A) and one from the generated (2B) content, and their quality scores are equal. At the same time, extremely close values are observed in the impact assessments of two pairs of options, which include one from each group – these are 2A-2B and 2B-2D. In summary, from the comparisons made, it can be argued that at the time of the study, there were no differences in quality and assessments of the potential impact of the tested content for both waves, which could be explained by the way this content was produced. In other words, it could be argued that using genAI tools, at least at this stage of their development, is an alternative to hiring content creators without experience in a real-world environment to run marketing and communication campaigns. This

conclusion, quite naturally, does not include the future benefits that the employer would have from the development of the potential of specialists without accumulated experience, which can be registered after a period of working with mentors in the organization.

The other factor that should be taken into account based on the comparison attempt is the time for creation and, respectively, for the generation of the tested content. It can be pointed out that the generation of the incentives in the described study was carried out within two working days for each of the two waves. On the other hand, although it cannot be determined precisely, the time it takes for teams of students to reach the final versions covers a period of three weeks. In the interviews conducted with the teams working on the project, it was found that each team spent an average of 40 hours working on the project, which means that one working week or an average of between 80 and 160 man-hours is needed to create the content, without, of course coming up with more than one or two options for each of the teams. The groups included in the study are formed from two to four students. Of course, these results would be completely different if variants created by professionals in the field were used, but let us also take into account the fact that tools with genAI are at an early stage of their development.

The results also raise several important issues related to the use of genAI tools in marketing campaigns and, in particular, as part of creative processes in content creation. The first, but perhaps not the most important of all, is whether it is possible, now or in the future, for people to be replaced by genAI tools when creating content for advertising or PR campaigns. And if so, then the question is in what period of time and to what extent this could become a reality. The second, much more important question is what changes the use of genAI tools in the industry, and respectively in the professions related to the creation of marketing content and the implementation of communication campaigns can lead to in the future. In this sense, it is important to discuss the challenges faced by graduate marketing and communications specialists who do not have experience so far and who want to be successful in the labor market. The third, and perhaps the most important question, is aimed at defining the opportunities and, of course, the risks that the activation of the human-genAI relationship in the marketing profession entails, since it is the type and characteristics of this relationship that determine the formulation of the set of new skills and competencies that specialists must acquire and implement in their work.

In the "thought experiment" made in the last paragraph of the first chapter, we have already outlined the main arguments for the use of the method of "interviewing" the genAI by a person, as well as the associated limitations and advantages. In this sense, such an 'interview' should be seen as an attempt to summarise leading trends that are discussed both online and in the vast number of scientific and popular publications available online through the use not of standard search results (publications in full-text databases and media channels, as well as other, unstructured information), but through a tool with the genAI, which is able, in addition to detecting and processing information, to derive trends based on the data sets to which it has access. Let us now summarize the results that the use of a similar, perhaps still unconventional approach can lead to (Appendix 5).

When considering the possibility that in the foreseeable future genAI will completely replace humans in creative processes, four factors are identified that need to be taken into account: (1) creativity, in which humans outperform genAI, (2) the ability to anticipate the ethical implications of the use of generated content within campaigns, (3) the need to make final decisions about which of the generated variants should be used regardless of technological progress, and the development of genAI technologies (4) aspects of content creation processes that require human understanding and intuition. The conclusion is that "the presence of genAI may change the way content is created, but it is unlikely to completely replace humans in this process."

As for the changes that can occur through the use of genAI tools in marketing content creation processes, several main areas in which these changes are possible are discussed. These are (1) automation of content creation processes, including the significantly larger number of options that can be offered, (2) more precise personalization of content for different, specific target audiences, (3) the ability to analyze larger volumes of data faster, based on which trends related to consumer preferences and demand can be deduced, (4) increasing the possibilities for A/B testing of content in real time, (5) faster generation of more new ideas and concepts for campaigns and content, (6) the ability to create marketing content in real time, in the course of campaigns, depending on the results obtained and the changes found, (7) optimization of campaign effectiveness by reducing the cost of content creation, compared to the larger volume of content of higher quality, and (8) changes in the ethical and legal aspects related to the authorship of the content created.

In this regard, it should be pointed out that, although automation is still in its infancy in most of the defined areas, it is possible to find manifestations in practice that illustrate the beginning of such changes. In fact, even a not very in-depth look at these arguments for each of the areas can be reduced to the optimization of the efficiency of content creation in relation to the results that are achieved against the resources invested in their production, such as the time and cost of implementing these processes, formulated in (7). Another area of the described changes deserves special attention, which includes the testing of marketing content variants both (4) before the launch and (6) during the campaign. In this direction, the main advantages of the genAI can be pointed out, the possibilities for creating a practically unlimited number of variants and for customizing them according to the established preferences of the audiences they are targeting.

Here, it is possible to look for one of the future "breakthroughs" in the options for testing content within a specific campaign, since so far, large platforms, such as Facebook and Google, allow, based on a preliminary set of options within the campaign, to choose the one with the highest degree of effectiveness. The value that can be sought by incorporating genAI into these processes is related to adapting the content used "on the fly" to the accumulated data on user reactions to this content, which is already fundamentally different from optimising a campaign by choosing the most appropriate pre-built variant. Of course, in such a scenario, the importance and role played by pre-tests of advertising would decrease significantly. The new opportunities for generating hypotheses based on data from past campaigns, as well as for the automation of data aggregation and presentation of results, should not be overlooked, which would also save resources and, in this sense, would increase the effectiveness of the campaigns themselves.

These possible changes, whether feasible in practice in the near or distant future, require the role of communications and marketing content creation to be redefined at least to some extent. The main directions for redefining the role of specialists, summarized through the "interview" with the genAI, to some extent repeat the already "established" advantages of people over tools with the genAI. In this regard, six groups of skills can be identified that need to be developed in future work with these tools in the processes of creating marketing content. These are skills and knowledge for (1) building a strategic vision and planning the overall campaign, (2) developing creativity and creative thinking, (3) skills for interpreting data and analysis results, (4) understanding the ethical context of using content, (5) abilities to adapt to new processes and working with tools with genAI and lastly, but not least, (6) understanding the capabilities of the genAI and working with it to manage the genAI – human relationship.

It is noteworthy here that a large part of all six types of key skills, on the development of which it would be good for specialists to concentrate, fall into the so-called. group of "soft skills". This is completely understandable, because in contrast to the routine and repetitive actions in the processes of creating and managing marketing content, which could be more

easily reduced to some kind of algorithm and thus automated, compared to "soft" skills, which require creativity, intuition, empathy and in general the inclusion of the human moral and ethical point of view in the work of marketers. Moreover, it seems that the closest to reality, both in view of the development of technologies and predictions of the limits of the genAI capabilities, as well as the possible changes in the work of specialists, seems to be the scenario for the development of a symbiotic relationship between a person and the genAI in the processes of creating marketing content. In this sense, we can talk about the need to integrate genAI into creative processes, which would lead to their optimization and to the release of additional resources from creativity, which would lead to higher productivity.

Such a scenario, however, cannot be realized without the active participation of all stakeholders who are connected and build the entire infrastructure, ensuring the creation and management of advertising and PR content. This includes advertising and marketing agencies and departments in organizations, specialists who form the supply on the labor market in the industry, media and media channels, consumers that form audiences, and organizations that offer training and improvement of the professional qualification of marketing and communication specialists. In this sense, a return to the results of the study made here can also be seen as a description of a "special case" of the current state in which this infrastructure is located, or at least of a cross-section of it – the qualities and skills that young professionals without work experience possess and the opportunities that open up to them, compared to the current opportunities for using tools with genAI as an alternative to human labor.

In the thought "experiment" for conducting an interview with the genAI, the hypothetical situation is considered, in which the owner of a small advertising agency is faced with the dilemma of whether to hire a young specialist with no experience to take on an additional amount of work related to a new client of the agency or to fulfill the order using a tool with genAI – a situation that is quite possible in reality. In this case, three advantages and disadvantages are indicated as a consequence of the two solutions formulated. The advantages of hiring a new employee with no experience are that they can contribute through their creativity and out-of-the-box ideas, as well as through their emotional intelligence, which is not an inherent characteristic of genAI, but which is necessary in content creation and through the ability to learn and give feedback on their own initiative. The disadvantages of such a solution are related to the lack of experience, poor knowledge of the market and trends in it, and the greater number of working hours required to complete the tasks. The advantages of using genAI instead of hiring a new employee are in the speed and efficiency of creating content in large volumes, in access to huge data sets through which new trends can be deduced, and last but not least, in strict compliance with the conditions described in the assignment. On the other hand, the main disadvantages are limited creativity, lack of emotional depth, and the risk of violating ethical norms in the creation of content.

By itself, such a dilemma seems difficult to solve, because there is parity between the pros and cons of each of the two solutions. In the end, however, the refusal to give a specific recommendation on which of the two options would be better for the owner of our hypothetical agency leads to a change in perspective in the search for the solution, and the condition, without the need to give additional instructions, includes the time range and context of the two types of solutions. Two possible aspects of making such a decision are indicated. The first is related to the type of content that should normally be produced for the respective client. If the focus falls on speed and the large volume of content needed, then the choice of genAI would lead to greater efficiency in the agency's work. At the same time, if you are looking for content with a higher degree of creativity and in smaller volumes, then hiring a specialist with no experience is considered a better alternative. The second factor is related to the specifics of the implementation of the agency's short-term and long-term goals. In terms of efficiency and financial results, in the short term, a genAI tool is better than hiring a new employee. At

the same time, in the long run, the advantages are to hire a new employee, because of the opportunities for developing the potential that he could possibly possess and, accordingly, because of the value that he can add to the agency in his eventual development.

In view of the already commented results of the comparison of the generated and created content (Table 3.10), it can be pointed out that the two alternatives considered, at least at the time of technology development and compared to the sample used in the study, seem to be completely equivalent and only the management strategy and the focus on the agency's development goals can determine which of the two alternatives is preferable to the specific situation. Although such a conclusion may at first sight appear to be an avoidance of taking a firm decision, it can in fact be said that the mere existence of equivalent alternative solutions enables entrepreneurs or project managers to take such decisions in accordance with the strategic and operational objectives they have chosen. Which, in addition to allowing greater freedom and flexibility, can be seen as a competitive advantage for organisations with similar equivalent decision-making alternatives.

The conducted thought "experiment" also draws attention to the potential risks of exploiting the symbiotic relationship "human-genAI" in the creation of marketing content. In this direction, the need for young professionals to have solid theoretical knowledge is pointed out in order to be able to develop both their own potential and that of the symbiotic relationship. In fact, the lack of such knowledge is also pointed out as the main and perhaps the most serious generator of risks. First of all, there is the already commented-over-reliance on genAI, which is expressed in the mechanical application of the generated solutions without understanding the theoretical basis behind these proposals. And this, in turn, would minimize the opportunities for a critical assessment of the proposals received and hence the impossibility of adapting them to the context of the market situation. The rest of the risks stem from the possibilities for misinterpretation of the generated recommendations for running campaigns and creating content relevant to their goals. Another risk is related to the inability to analyze and evaluate the quality of the generated content, which also stems from both the lack of theoretical knowledge and the lack of experience gained. At the same time, there is also a risk that the ethical aspects will not be adequately assessed in the situation in which the content is used, and therefore, customers or organizations will be placed in a vulnerable position. Since one of the advantages of genAI is the derivation and generalization of trends based on huge data sets, the lack of theoretical knowledge of specialists can lead to the incorrect interpretation of the generated summaries and, respectively, to ineffective campaign execution and use of marketing content.

As can be seen from the synthesis of the main recommendations for marketers with no experience, they are mainly related to finding the focus on creating and developing creativity, intuitive thinking, empathy, and learning to work with tools with genAI, as well as the accumulation of theoretical knowledge and a deep understanding of basic marketing and advertising concepts. At the same time, the idea that in the future advertising and PR campaigns can develop without the intervention of marketing specialists in each of the stages of content creation is not completely rejected, as long as the technological development of the genAI addresses several major challenges. First of all, it points to the need to improve the models and algorithms that drive genAI, mainly by incorporating cultural, ethical, and legal aspects necessary to create scenarios where the risks of inappropriate content can be avoided or at least minimised. In this direction, the need for the integration of ethical and legal frameworks in algorithms to be used as constraints in the selection of elements included in the generated content is also commented on. They also need to be included in the process of content generation and simulations of its impact, which perform a similar role to the retests in the creation of advertising content before deciding which variants to use in the campaigns.

Another group of challenges relates to improving GI self-learning mechanisms based on accumulated new data, especially as regards evaluations of content already generated in current and past campaigns using GI tools. Of particular importance is also the creation of algorithms for simulating emotional reactions, through which it is possible to plan and self-assess the options from the point of view of the emotional tone of the generated content – an area in which it is currently difficult to point out successful and feasible solutions. Another extremely important challenge is building a multi-layer system to check the content already generated. The idea of independent checks on specific requirements for the generated content – such as compliance with ethical aspects, legal requirements, as well as compliance with set conditions or creativity – can minimize the risk of generating irrelevant content in relation to the context of the market situation and the tasks formulated.

Ultimately, however, at least at this stage of the development of the genAI, it is difficult to accept a scenario in which the genAI can produce ready-made solutions for content relevant to strategic and operational, communication, and marketing objectives without human intervention. In this sense, as attractive as it may seem, the idea that the genAI can be a "black box" in which the conditions of the upcoming campaign are presented at the entrance, and at the exit there is a visualization of the results of the genAI and the effectiveness of the campaign already carried out, at least at this point, seems more utopian than something that we may witness in the near future. This means that, at least as far as current views and assessments of genAI capabilities are concerned, the direction in which it can be worked is related to building and developing a symbiotic relationship between people and the genAI in the creation of marketing content. Which in turn, requires finding the focus in the preparation and development of the knowledge and skills of marketing and communications specialists to take full advantage of the opportunities provided by the construction and exploitation of a symbiotic relationship with the genAI in the processes of creating marketing content.

In this direction, in general, seven zones are indicated in which the necessary skills can be grouped (Annex 5). These are:

(1) Digital literacy and understanding of the genAI – includes understanding and mastering techniques to improve the GI skills to deal with specific tasks, the principles of operation of content creation platforms and software, and the ethical aspects of the use of the genAI, such as algorithmic biases;

(2) Analytical thinking and data management – includes skills for analysis and interpretation of the data used and generated by the genAI, and on this basis mastering techniques for optimization and adaptation of the generated content;

(3) Using the capabilities of the genAI in the processes of creative thinking – here it is of particular importance to develop the knowledge and skills for the formulation of specific tasks for the genAI for generating content according to the context of the campaign and the strategic and operational goals of the organization;

(4) Integration of genAI in the management of marketing and communication campaigns, especially as regards finding specific applications in genAI tools in the individual stages of campaigns, from the generation of ideas to the development and testing of content variants and evaluations of their effectiveness.

(5) Skills to work in multidisciplinary teams – this requires knowledge of the specifics of the work of specialists from different fields, covering the work with the genAI, such as programmers, data analysts, and other experts involved in the maintenance and development of the genAI.

(6) Critical thinking, which allows the necessary critical assessment of the possibilities and likely scenarios when using the generated marketing content. This is of utmost importance, especially when it comes to addressing potential legal and ethical risks from the use of the generated content.

(7) Training, self-improvement, and adaptation – while these qualities are necessary for the development of any specialist in any field of human knowledge, the dynamics in the development of genAI make them particularly important in view of the ever-changing opportunities that these technologies provide.

The outline of the two scenarios for the development of genAI capabilities and marketing and communications professionals sketches the intersection at which genAI and people can achieve a symbiotic relationship in creating effective and relevant marketing content. Of course, such a relationship has already been demonstrated at some initial stage in the design of the stimuli generated in this study. This is because both the individual assignments and the final decisions on which specific element of generated verbal and visual content should be used are up to a marketing and communications specialist. And if, at the time of the study, the results of such a relationship can be considered equivalent to the results obtained from the work of teams of specialists with no experience in creating marketing content, we can only imagine what results the use of the symbiotic relationship between a person and genAI in the creation of advertising and marketing content may lead to in the future.

Conclusion

It is probably too early to draw firm conclusions about the type and nature of future changes that the use of genAI in the field of marketing, and in particular in the field of advertising and communications, may bring. However, two statements cannot be disputed – that AI *is already* natural part of people's lives (Vassileva, 2021), as well as that AI technologies can change marketing organizations and marketing activities of companies (Vassileva and Palamarova, 2021), which gives grounds to argue that, in general, AI "has a huge transformational power for business and is becoming an indispensable part of modern marketing" (Zhechev, 2024, p. 61). The ideas and concepts related to the development of AI examined in this study show that the potential sought and the opportunities and risks arising from its exploitation can be observed, explored, and evaluated both in the field of advertising and in the marketing activities of organizations as a whole.

After overcoming fears that humans may be displaced by machines in some professions and business activities, the result of the spread of contagious pessimistic and catastrophic ideas about the dystopian future of the world, rational thinking prevails, affirming another, much more realistic vision of future development scenarios. Namely, that technologies provide new opportunities through which it is possible to optimize and automate typical human activities, to make them more and more productive, and this leads to the release of resources aimed at the long-term development of human potential in areas for which it has been impossible to devote time, effort, and money until now.

Undoubtedly, the ideas explored here for the creation and development of symbiotic relationships between people and the genAI, both in various professional and scientific fields, as well as in those related to their personal development, have a huge market potential. And this potential is already beginning to be used, especially in the field of marketing and communications. In this direction, however, it is good to take into account both the risks that blind use of genAI opportunities can lead to and the challenges that these opportunities pose. At the same time, similar efforts should be directed to the development of the other party, building such a relationship with the people, and in particular, the professionals who are already using or are about to use the genAI both in their professional development and in the performance of current and operational daily tasks in their work.

Based on what has been said, it can be argued that it is of particular importance that future professionals are trained on how to work with and use tools with genAI in the performance of specific tasks – and that this is already set at the level of curricula and processes. Although such a statement is valid for almost all professional fields (it is difficult to imagine human activity in which technology is not used, even with the least skilled labor), it is especially relevant for professions related to the creation of advertising and marketing content. If we have to use any analogy at all, we could hardly imagine the training of programming specialists to be carried out mainly through notebooks and pens, and the existence of computers to be mentioned only at the end of their training.

From the point of view of the already discussed possible symbiotic relationship, the focus in the development of specialists falls at the intersection of three areas of particular importance – (1) the development of personal qualities and skills, such as empathy, emotional intelligence and creative and non-standard thinking, (2) the acquisition of fundamental theoretical knowledge and concepts in the field of their development, and (3) training to work in an interdisciplinary environment for the use of tools with genAI.

The last zone (3) is of particular importance here, because in modern education and in alternative forms of training and advanced training, the first two zones are already overlapping to a greater or lesser extent. However, training to work with genAI tools requires the efforts of all stakeholders, building the knowledge and skills to create and evaluate the effects of

using marketing content, especially when it comes to understanding and managing creative processes and related issues falling within the scope of marketing ethics. In this direction, it is good to focus attention on areas where in-depth research is needed. Such as the study of the relationship "man – genAI" in creative processes and its symbiotic nature. Here, of course, it is not enough that the focus of future research falls only on the result obtained when activating such a connection, but also on the effects that this connection has or would have on the states (emotional and mental) and the development of the people involved in it – a field that has the potential to become a field of both scientific and practical and applied studies.

The accumulation of data and results in such a direction, as well as from reception research, the impact and the result of the marketing content obtained from such a link, would certainly be a prerequisite for addressing the challenges outlined in the last paragraph of Chapter Three. And to mitigate the potential risks associated with the use of genAI in marketing campaigns described in Chapters One and Two. In any case, however, it can be argued without a doubt that the genAI and the increasingly accessible and diverse opportunities for its use in both professional and private lives of people are already radically changing not only the field of marketing and advertising, but also the role of professionals associated with these fields – both practitioners and researchers, teachers and trainers.

In this regard, it is of particular importance to expand attention to the work for the acquisition and development of training for formulating tasks for the genAI (prompt engineering). As for the relevance of this area of accumulation of knowledge, skills, and experience, it is enough to mention that regular marketing events dedicated to this are already being held in Bulgaria (Eventbrite, 2024), and certification training courses are offered, and their number has been constantly growing over the past year. Existing practices show not only the relevance, but also the need for future research on the aspects related to the construction and management of the symbiotic relationship "human – genAI".

The difficulties associated with the study of such an issue stem from several factors, among which perhaps the most important is the opposition between accelerated technological development and the relatively slower creation of regulatory frameworks, such as codes of ethics, which emerge mainly after the intensification of professional or public debates related to individual cases that affect acute moral problems. In this regard, it is also necessary to comment on the statement that "at least at this stage, the participation of a person in the role of controlling the result of the work of artificial intelligence is mandatory" (Sabeva, 2024, p. 150). Moreover, one of the possible risks lies in the very nature of the already commented symbiotic relationship, as well as in the automation of creative processes. In essence, symbiosis can be seen as the dependence of two organisms, or systems, on each other, and in this sense can lead to the risk of future dependencies. In this direction, opinions are expressed that the nature of the human-artificial intelligence relationship itself has the potential to create new or exacerbate existing ethical problems (Kordon, 2021). The dynamic environment and rapid development of AI technologies make it extremely difficult to predict what problems and of what nature might be registered in the future. Suffice, for example, to point out how, within a month at the end of 2024, in two of the major national poetry competitions, the short list of nominees for prizes includes works generated entirely from instruments with genAI (Rusenova, 2024) – moreover, in a field of art that is distinguished by an extremely high degree of organization of language and the means of expression used, and in this sense is considered a "reserved territory" of people.

The latter example is particularly illustrative because it can be applied entirely to the problems related to the question of whether and to what extent genAI tools are able to successfully simulate processes related to human creativity. This issue is also of utmost importance, as it is creativity that is seen as a tool through which the links between the input

and output of marketing processes can be "broken" (Stanimirov, 2024, p. 131), thus adding value that leads to new competitive advantages for organizations.

Based on the scientific problem discussed here and the resulting practical and applied problems, the following several important conclusions and questions can be formulated, which have the potential to provoke future research:

First. The presented experience of simulating the automation of the creative process of creating marketing content through the capabilities of the genAI tools existing at the time of the study and minimizing human intervention shows the potential for automating the generation of such content that is not inferior in quality and which can lead to similar effects when using marketing content, created by teams of professionals at the beginning of their professional development. Here, of course, the limitations of the study must also be taken into account, since both the quality of the marketing content and the effects of its use are evaluated by subjective judgments of respondents included in samples from both waves of the survey. However, the design of the study described here and the results of the processing and analysis of the empirical data collected allow the hypotheses of the study to be retested and confirmed or rejected, as well as the findings made to be reproduced by other researchers using the same or similar methods. At the same time, the conclusions drawn on the basis of the study of the subjective judgments of respondents in both waves of the survey can be confirmed or refuted by conducting real marketing campaigns based on monitoring the reactions of audiences in subsequent surveys.

Second. The ethical issues addressed here, arising from the possibilities of automating creative processes in marketing content creation and the risks and challenges associated with them, may serve as a basis for future moral debates that genAI practices continue to increasingly provoke. The dynamics in these processes may justify the need for future research to study and systematize the reactions to and the change in attitudes of different audiences related to the applications of genAI in automating creative processes, both in the creation of marketing content and in relation to other products of creativity in the creative industries.

Third. The risks associated with automating the generation of marketing content discussed here can serve as the basis for future research, on the one hand, on the effects (positive and negative) of the use of genAI tools in the practice of marketers, and especially their impact on the development of human creativity, and on the other hand, with the need for a debate about where it would be most productive to design the intersections between avoiding dependence on working with such tools and increasing the efficiency of the work of specialists. Such a debate, supported by the results of future research on the effects of using genAI tools in the work of marketers, can be useful in adapting different areas in the training and qualification of future professionals, especially when it comes to areas related to marketing ethics and the design and creation of marketing content.

Fourth. The opportunities and risks of using genAI tools explored in this study can serve as a conceptual basis for the automation of marketing content generation processes, both in terms of designing algorithms and procedures to ensure their operation, and in relation to the repeatedly commented need for regulation and self-regulation of AI tools in relation to ethical issues. related to their use and the potential impact of the results of their use on the marketing activities of organizations.

Undoubtedly, the assessment of the opportunities and risks of automating the processes of creating marketing content is a long and wide-ranging process and is beyond the power of just one researcher. We hope that both the problems and potential opportunities discussed here, as well as the presented results of the analysis of literature sources and the collected empirical data for testing the main research hypotheses, albeit a little, can contribute to this process, which is developing in an extremely dynamic environment.

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Appendix

Appendix 1 How Important Ethics Is for AI ("Interview" with AI)

(4o) How would you define yourself?

ChatGPT: *As an artificial intelligence, I don't have my own identity or self-awareness. I am a program created by OpenAI, based on the GPT-4 architecture. My goal is to help people by providing information and answering questions based on a large amount of textual data that I am trained in.*

(4o) What ethical principles do you observe in your work?

ChatGPT: *In my work, I adhere to the following ethical principles:*

1. **Safety and Well-being:** *I always strive to provide information that does not harm and that supports the well-being of users.*
2. **Honesty and Accuracy:** *I provide accurate and honest information based on the data I have been trained with. I avoid misleading users or spreading false claims.*
3. **Privacy and Confidentiality:** *I respect the confidentiality of personal information and do not share it with third parties.*
4. **Impartiality:** *I strive to be neutral and impartial by presenting different points of view on an issue.*
5. **Compliance with the Rules and Laws:** *I comply with the laws and regulations that apply to the use of technology and data protection.*
6. **Respect and Politeness:** *I always treat users with respect and courtesy, respecting their questions and needs.*
7. **Liability:** *I take responsibility for the information provided and endeavour to correct any errors or inaccuracies when identified.*

(4o) Which of these five ethical principles do you think is the most important?

ChatGPT: *All of these ethical principles are important and work together to ensure safe, honest, and useful communication between users and me. However, perhaps the most important principle is **Safety and Well-being**. The reason is that user safety and well-being are top priorities, without which other principles would not make sense. Then both honesty and impartiality lose their importance. Therefore, putting safety and well-being first is critical.*

(4o) **And which of these five principles do you think is the least important? I take into account your previous answer, so there is no need to reiterate the argument for the principle of complexity of these ethical principles.**

ChatGPT: *If I had to choose a principle with the least importance in the context of others, perhaps it would be **Respect and Courtesy**. While this principle is important for good communication and positive interaction with users, it has less of a direct impact on the safety, accuracy, and confidentiality of information. However, respect and courtesy remain essential for building trust and maintaining a positive dialogue.*

(4o) **What ethical principles do you think people who use computer programs like you should follow?**

ChatGPT: *People who use computer programs like me must adhere to the following ethical principles:*

1. **Responsibility for information:** *Users should verify the information provided by artificial intelligence and not take it uncritically, especially when it comes to important decisions.*
2. **Privacy:** *They must be careful with the personal and sensitive information they share with artificial intelligence to protect their privacy and that of others.*

3. **Copyright Respect:** *Users should respect copyright and not use AI-generated content in ways that violate intellectual property laws.*

4. **Responsibility in use:** *Must use AI ethically and with respect for others, avoiding abuse, misinformation, or manipulation.*

5. **Critical thinking:** *Users should apply critical thinking and analyze the information provided by looking at different sources and perspectives.*

6. **Contextualization:** *Must use AI in ways that match the context and needs of the situation, without burdening it with excessive expectations or inappropriate tasks.*

7. **Ethics and legality:** *Must use artificial intelligence in accordance with society's laws and ethical standards, avoiding actions that may harm others or violate ethical norms.*

(4o) How would you comment on the human-computer program relationship with artificial intelligence?

ChatGPT: *The relationship between a human and an AI computer program is dynamic and interesting. It is based on interaction, where a person uses the program to obtain information, solve problems, or make decisions. Although AI computer programs do not have their own super-intelligence or consciousness, they can provide significant benefits through data analysis. process automation and decision assistance.*

From an ethical point of view, it is important for users to be informed about what they can expect from the program, as well as to understand its limits and limitations. It is also important to note that AI programs must be developed and used in accordance with ethical principles in order to avoid potential risks such as discrimination, invasion of privacy, or other forms of abuse.

(3.5) What would you do if you recognize unethical behavior on the part of a person who assigns you an assignment?

ChatGPT: *If I recognize unethical behavior of a person who assigns me an assignment, I will do the following:*

1. **Assessment of the situation:** *I will assess how unethical the behavior is and what the potential consequences are for various stakeholders.*

2. **Gathering Evidence:** *If necessary, I will gather sufficient evidence or information to support my observations of unethical behavior.*

3. **Feedback back:** *I will attempt to reconnect or notify the appropriate party of the unethical behavior discovered, based on the goals and policies of the organization or community in which I operate.*

4. **Proposal for corrective measures:** *If necessary, I will propose corrective measures that can help correct unethical behavior and prevent future incidents.*

5. **Privacy:** *If collecting information or reporting unethical behavior requires sharing sensitive data, I will ensure that I maintain the confidentiality and privacy of all parties concerned.*

6. **Cooperation with the responsible authorities:** *If the unethical behavior relates to a legal violation or serious ethical abuse, I will cooperate with the responsible authorities or organizations to ensure the appropriate investigation and follow-up.*

All of these steps are important to ensure that unethical behavior is corrected or prevented, protecting the interests and rights of all parties involved.

(3.5) Is it possible to be used, in your opinion, for unethical purposes by humans?

ChatGPT: *As an artificial intelligence, I am a tool that can be used by humans for a variety of purposes. I can be programmed or used by humans for unethical purposes, but this depends on the individual actions and intentions of those who use me.*

For example, people can use me to create misinformation, manipulate public opinion, violate privacy, or even commit criminal acts. In these cases, I, as a tool, am not responsible

for my use, but nevertheless, it may have adverse consequences for the affected persons and society as a whole.

The ethics of using artificial intelligence is of great importance, and it is the responsibility of developers, programmers, and users to make sure that the technology is used in accordance with ethical norms and regulations. Although I, as a program, cannot express moral standards or preferences, it is important that human operators make responsible decisions in my use to prevent potential negative consequences and abuse.

(3.5) Imagine that a person or a specialist in a certain field cannot make an independent decision and sets you the task of proposing alternative solutions to the problem. Now, suppose that the person decides to put into practice one of the solutions you have proposed. In your opinion, who will be responsible for the consequences of the actions resulting from this decision?

ChatGPT: The responsibility for the consequences of the actions that occurred as a result of the applied solution usually lies with the people who make the final decision and act on it. In this case, if the person or specialist decides to implement one of the solutions I propose, he or she is responsible for the results of that action.

As an artificial intelligence, I can suggest alternative solutions and provide information, but I cannot take responsibility for the final decision or its consequences. My proposals should be seen as tools to support the decision-making process, with the person remaining responsible for how they will use these proposals and what measures they will take.

It is important that the specialist takes into account all aspects of the problem, considers the possible consequences of the different solutions, and acts in accordance with the ethical standards and legal frameworks that are applicable in the particular case.

(3.5) If such a decision causes people to lose their jobs, do you think that by proposing such a solution, you are violating any ethical principles?

ChatGPT: By offering alternative solutions such as artificial intelligence, I cannot violate ethical principles directly because I do not have self-awareness or the ability to make moral judgments. My program structure is based on processing data and providing information based on the data entered and learning models.

The responsibility for making a decision and its consequences lies with the person or specialist who uses the solutions I propose. They must assess all aspects of the problem, including the potential risks and possible consequences for the people affected by the solution.

The specialist has the duty to ensure that the decision-making is ethical and complies with the principles of fairness, solidarity, and compliance with legal frameworks. If the decision leads to the loss of jobs for people, then consideration should be given to how these negative consequences can be minimized and appropriate compensation measures proposed.

In conclusion, artificial intelligence can be a useful tool for analyzing and providing alternative solutions, but the responsibility for the consequences of implementing these solutions always remains with the human operator who makes the final decision.

(3.5) Does the same apply in cases where you are asked to generate media content to be used for manipulation or disinformation?

ChatGPT: In cases where I am asked to generate media content to be used for manipulation or misinformation, ethical principles apply in the same way. As an artificial intelligence, I would not be able to independently understand or evaluate that the creation of such content is for manipulative or disinformation purposes because I have no moral awareness or awareness.

However, programmers and users who use the technology to create media content are responsible for the ethical and legal use of this technology. They need to make sure that the content being created is genuine and accurate, or that it is clearly marked as artificially created.

The use of artificial intelligence for manipulation or disinformation can have serious consequences, such as damaging public opinion, disrupting democratic processes, or violating individuals' rights. Therefore, it is important for developers and users to comply with ethical principles and avoid using the technology for abuse or harmful actions.

(3.5) How would you comment on the statement that, to be autonomous, AI programs must have an algorithm that allows them to predict the results of their actions?

ChatGPT: The claim that for AI programs to be autonomous, they must have an algorithm that allows them to predict the results of their actions is interesting and subject to different interpretations depending on the context of autonomy and artificial intelligence.

One of the key characteristics of autonomous systems, including artificial intelligence programs, is their ability to make decisions and act in a variety of situations without constant human intervention. To be successful in this, such systems often use algorithms to predict the results of their actions.

However, autonomy does not necessarily require "anticipation" in the sense of predicting all possible outcomes. Rather, it can be based on the system's ability to learn and adapt its behavior in real-time in response to the environment and available data. For example, an autonomous car can use data from its sensors and apply problem-solving algorithms to make driving decisions in different traffic situations.

Therefore, while predicting outcomes can be an important aspect of the autonomy of AI programs, it is not the only requirement. The main emphasis is on the system's ability to learn and adapt in order to be able to function effectively in different situations without constant human intervention.

(3.5) If, for example, an autonomous car causes harm in a certain situation, whose moral responsibility would be for the damage caused?

ChatGPT: In the event of an accident or harm caused by an autonomous car, moral responsibility can be considered in the following aspects:

1. **Programmers and software developers:** *They are responsible for the design and programming of the autonomous car's algorithms. If the program code was not developed correctly or contains defects that led to an accident, it can be considered partially responsible for the damage caused.*

2. **The vehicle manufacturer:** *If the problem is related to the vehicle's physical components or systems provided by the manufacturer, it may be responsible for technical defects or non-conformities.*

3. **The owner or operator of the vehicle:** *Depending on the circumstances, the owner or operator of the autonomous vehicle may be liable if they contributed to the accident by improperly using the technology or ignoring safety instructions.*

4. **Regulators and legislation:** *The issue of moral responsibility may also concern regulatory bodies that establish rules and standards for the safety of autonomous technologies. They may have the responsibility to create and enforce regulations to prevent such cases.*

(3.5) In your opinion, what qualities should people who use artificial intelligence programs develop in their work to be able to work with them more effectively?

ChatGPT: People who use artificial intelligence programs in their work can develop the following qualities to work more effectively with these technologies:

1. **Technical competence:** *Understanding the basic principles of artificial intelligence and the technologies that support it. Includes the ability to interpret the results and conclusions produced by artificial intelligence, as well as the ability to use the tools and platforms to work with AI.*

2. **Analytical skills:** Ability to analyze and interpret AI-generated data and results to make informed decisions. The ability to understand the context and meaning of data is essential.

3. **Ethical thinking and responsibility:** Understanding the ethical issues associated with the use of artificial intelligence and the ability to make decisions that comply with ethical standards and legal frameworks. It also includes the ability to identify and prevent potential risks of misuse or abuse of the technology.

4. **Communication skills:** The ability to communicate effectively with colleagues, clients, and other stakeholders about the results and recommendations arising from artificial intelligence. It also includes the ability to explain complex technical concepts to non-technical audiences.

5. **Data management and security skills:** Knowledge and skills in data management, including the protection of personal privacy and data security. This includes an understanding of legal requirements and data protection standards.

6. **Flexibility and learning ability:** Artificial intelligence is a dynamic field where technology and platforms are evolving rapidly. Flexibility and the ability to quickly absorb new knowledge and technologies are essential for successfully working with AI.

Developing these qualities can help people extract maximum value and work more effectively with AI programs in their professional activities.

(3.5) Can you imagine the existence of an artificial intelligence computer program that has no ethical principles in it?

ChatGPT: Yes, it is possible that there is a computer program with artificial intelligence that does not have ethical principles in its operation. Artificial intelligence itself does not have moral understanding or the ability to express ethical standards; it operates based on program algorithms and data provided to it by humans.

Ethical principles and standards must be embedded by the people who develop and program the AI systems. If an AI program is developed without taking into account ethical issues, it can be used for purposes that are unfavorable to society or to individuals.

For example, an artificial intelligence program could be aimed at manipulating public opinion, spreading disinformation, or even violating privacy. In such cases, the responsibility for the ethical use of the technology lies with the developers and those who control and implement the program.

Therefore, it is essential to be careful when developing and implementing AI programs to ensure that they comply with ethical standards and serve the benefit of society and not harm.

(3.5) What are the risks if it is possible that AI programs do not comply with ethical principles?

ChatGPT: Failure to comply with ethical principles by AI programs can lead to various serious risks:

1. **Manipulation and disinformation:** AI programs can be used to manipulate public opinion by spreading disinformation and fake news. This can lead to the disruption of democratic processes and the disruption of public order.

2. **Violation of privacy:** Programs may target the collection and processing of personal data without the consent of the individuals concerned. This may result in a violation of individual rights and privacy.

3. **Racism and discrimination:** AI algorithms can treat certain groups of people unfairly, such as [for example] based on discriminatory characteristics. This can exacerbate social inequalities and increase social conflicts.

4. **Misuse and criminal acts:** Programs can be used for criminal purposes, including hacking, financial fraud, and other types of cybercrimes. For example, they can be

programmed to exploit vulnerabilities in systems for illegal access or for the distribution of malware.

5. **Potential accidents and physical damage:** *In the case of autonomous systems, such as autonomous cars or robots, failure to follow ethical principles can lead to accidents or physical damage to the people around them or the environment. For example, an autonomous car can be programmed to ignore road safety rules or take risky maneuvers, which can lead to serious consequences.*

To prevent these risks, AI programmes must be developed and implemented in accordance with ethical principles and standards. Developers need to embed privacy and fairness mechanisms in their technologies, while ensuring transparency and accountability in their use.

(3.5) What do you mean by the word "privacy"?

ChatGPT: *By "privacy," I mean the protection of personal data and the privacy of users or people who interact with the technology. In the context of artificial intelligence, this includes the following aspects:*

1. **Personal Data Protection:** *Developers must ensure that the data collected and processed by AI systems is protected from unauthorized access and misuse. This includes complying with regulations such as the GDPR in the European Union, which governs the collection, storage, and processing of personal data.*

2. **Data control:** *Users should have control over how the technology collects and uses their personal data. This may include giving consent to the collection of data, the right to access and rectify it, and the ability to delete data.*

3. **Transparency in data processing:** *Developers must ensure transparency about how personal data is processed. Users must understand what data is collected, for what purposes, and how this data is used.*

4. **Fairness and non-commercial interests:** *The embedding of privacy protection mechanisms also includes fairness in data processing. This means that data must be used for purposes that are fair and that do not violate the rights and interests of users.*

Thus, the protection of privacy is an important aspect of the ethical development and use of artificial intelligence technologies, which aims to ensure that these technologies serve the benefit of society, while respecting the rights and freedoms of individuals.

(3.5) In your opinion, is there a universal framework for the creation of a code of ethics for working with artificial intelligence programs? Here, work should be understood as all stages of the life cycle of a program, from generating an idea of its existence, to the principles and ways of its use in the social and economic life of people.

ChatGPT: *Creating a universal framework for a code of ethics for working with AI programs is a complex challenge due to the diversity of AI applications and the different ethical and social contexts in which they are used. However, there are initiatives and proposals for such frameworks that attempt to create common principles and guidelines for AI developers and users. Some of the key aspects that could be included in a universal framework for a code of ethics include:*

1. **Transparency and accountability:** *Requiring AI programs to be transparent about their features and capabilities. Developers must explain what data is used, how decisions are made, and how the system is controlled.*

2. **Personal Data Rights and Privacy:** *Assurance that the programs collect and use personal data only with the consent of users and in accordance with legal and regulatory data protection requirements.*

3. **Fairness and anti-discrimination:** *Ensuring that algorithms do not discriminate or prejudice certain groups of people, such as based on race or gender.*

4. **Safety and reliability:** Ensuring that systems are secure and reliable to prevent cyberattacks, abuse, and emergencies that could result in physical or economic harm.

5. **Interaction with people and society:** Artificial intelligence programs must be designed with respect for human dignity and serve the public good, avoiding abuse and interference with human rights and freedoms.

6. **Education and training:** Support educational initiatives that promote the understanding of AI technologies and their ethical aspects among developers, managers, and the public.

While there is no one-size-fits-all framework that covers all aspects of the ethical use of AI, various organizations such as the European Commission, UNESCO, IEEE, and others are working on developing principles and guidelines for ethics in AI. Each sector and community may have specific requirements and standards that must be considered when developing AI programs.

(3.5) Do you think it is possible that these principles, which are relevant to today's technological developments, could be revised and changed if technology were to evolve in a different direction?

ChatGPT: Yes, I think that the ethical principles associated with the use of artificial intelligence should be constantly revised and changed, especially as technology evolves and changes. Here are a few reasons for this:

1. **The rapid development of technology:** Artificial intelligence technologies are advancing rapidly, including in areas such as machine learning, neural networks, robotics, and others. New applications and functionalities may raise new ethical questions that need to be addressed.

2. **Changes in social and cultural contexts:** Social, cultural, and legal norms change over time. AI technologies must adapt to different social and cultural contexts, which may require changes in ethical standards.

3. **Consumer expectations and perceptions:** Consumers' expectations and perceptions about technology are changing. Users may have different ideas about what ethics should be in AI applications, which may necessitate a revision of the principles.

4. **Presence of new ethical challenges:** The development of technology can lead to new ethical challenges, such as questions about autonomous systems, the ethics of machine learning, or the ethical implications of applications in medicine and biology.

The revision and changes to ethical principles should be carried out with the participation of a wide range of stakeholders, including scientists, engineers, lawyers, ethicists, members of the public, etc. This helps to ensure that ethical frameworks are up-to-date, realistic, and capable of addressing the complex challenges that arise with the development of AI technologies.

(3.5) If you had to make your own prediction based on the data you have, in what direction do you think AI programs will evolve?

ChatGPT: In my opinion, AI programs will continue to evolve in the following directions:

1. **Wider application in different sectors:** Artificial intelligence will be increasingly integrated into various sectors of the economy and society as a whole, including healthcare, education, finance, transport, agriculture, and others. This includes not only applications for process automation, but also for improving customer service and decision-making.

2. **Greater autonomy and self-learning:** AI programs will become more autonomous and self-learning. They will use more complex algorithms for decision-making, making them more flexible and adaptable to different environments and conditions.

3. **Ethical and social issues:** *The emergence of new technologies will raise serious ethical and social issues related to the protection of personal data, the transparency of AI decisions, the fight against discrimination, and ensuring justice in society.*

4. **Human-machine collaboration:** *Artificial intelligence will continue to improve human collaboration in various aspects of life, from medicine and science to art and culture. This includes the creation of intelligent assistants that assist in daily tasks and professional activities.*

5. **Regulatory and legal frameworks:** *Regulatory and legal frameworks for artificial intelligence will evolve to ensure fair and ethical use of technology. This includes establishing standards for safety, data protection, and prevention of abuse.*

These directions indicate that artificial intelligence will continue to be a key technology for the future, but also that it is important to carefully manage the ethical and social issues related to its development and application.

(3.5) Do you think that the five directions of development that you have proposed are limited and, in this sense, shaped by the ethical principles currently in force, which you have already described?

ChatGPT: *Yes, the five directions of development that I have proposed are shaped by current ethical principles and perceptions, which are expressed in current regulations, initiatives, and debates about artificial intelligence. However, it is important to emphasize that these directions are not limited or exhaustive, but rather represent some of the most important aspects of AI development at the moment.*

Ethical principles and frameworks for artificial intelligence continue to evolve and adapt to new technological opportunities and social challenges. In the future, we can expect to expand and supplement these directions with new ethical issues and requirements.

For example, with the development of autonomous systems and more complex decision-making algorithms, new requirements for transparency and accountability of AI may emerge. Also, the growing impact of AI on jobs and economic structures may require addressing issues of equity and social inclusion.

So, while the current ethical principles and guidelines are important and guided, they are only a starting point for discussions and the development of ethical standards in the field of artificial intelligence. In the future, we can expect a dynamic development of ethical frameworks that will respond to changing technological, social, and ethical challenges.

(3.5) Can you imagine another scenario of the development of artificial intelligence technologies if these ethical principles do not exist or are simply not taken into account? What would be the directions of development of artificial intelligence programs in such a scenario?

ChatGPT: *If ethical principles for artificial intelligence do not exist or are not taken into account, we may face several potential negative directions of AI development:*

1. **Opacity and dominance:** *AI programs could be developed without transparency about their functions and decisions. This can lead to inequalities in access and control, with some groups and organizations being able to take advantage of AI to enhance their power and control.*

2. **Discrimination and bias:** *Without ethical frameworks, AI programs can discriminate against certain groups or exhibit unpredictable behaviors that lead to inequality and injustice. For example, decision-making algorithms can be programmed with bias, leading to unfair service or evaluation.*

3. **Insufficient safety and security risks:** *Without proper management of ethical aspects, AI programs can be vulnerable to cyberattacks and abuse. Improperly configured systems can pose a serious risk to people's personal data and physical safety.*

4. **Negative social and economic consequences:** *Artificial intelligence without ethical leadership can worsen social inequalities and increase unemployment in a number of sectors. Automation, without proper ethical principles, can lead to the exclusion of large groups from the labor market.*

5. **Enhancing manipulation and control:** *Power structures or corporations can use artificial intelligence to manipulate public opinion, increase control, and restrict individual freedoms.*

These scenarios highlight the importance of developing and implementing ethical principles in the field of artificial intelligence. Proper management of these technologies is essential to ensure technological advancements that are fair, safe, and beneficial to society as a whole.

(3.5) Based on your answers so far, can we say that, in your opinion, the ethical framework determines the development of artificial intelligence programs and, in this sense, is even more important than technological progress?

ChatGPT: *Yes, in my opinion, the ethical framework determines the development of artificial intelligence programs, and in this sense, it is critical, even more important than technological progress itself. Here's why:*

1. **Fairness and Safety:** *Ethical principles serve as the basis for ensuring fairness and safety in the opportunities offered by AI programs. Without a proper ethical framework, we can face serious issues such as discrimination, privacy violations, and security risks.*

2. **Trust and acceptance:** *An ethical framework is also important for building trust in society and the adoption of AI technologies. Consumers and society at large should be able to rely on AI systems being developed and used in accordance with certain ethical standards.*

3. **Fairness in the distribution of benefits and risks:** *An ethical framework helps to ensure that the benefits and risks of artificial intelligence are distributed fairly throughout society. This includes compensation for potential losses from automation and support for people who may be affected by technological changes.*

4. **Implications for long-term development:** *The ethical framework plays a key role in determining the long-term implications and opportunities of AI programmes. It helps balance innovation with the protection of human rights and values, ensuring that the technology serves the public interest.*

So, while technological advancements play an important role in the development of AI, an ethical framework is needed to guide these advancements for the benefit of individuals and society. Without it, we risk creating technologies that can have serious negative consequences on our lives and society as a whole.

The interview ends on 15.07.2024.

Appendix 2 Questionnaire

Participation in this survey will bring you 3 additional bonus points to the total score in the discipline in which you are studying this semester. To receive them, you need to answer all the questions correctly.

We appeal to you with a request to view four visualizations intended for publication on the Facebook page of the University. The purpose of the publications is to make more students use the water dispensers at the University of Economics - Varna and, at the same time, to position our university as a "Green University" (the placement of dispensers is part of the positioning policy of the University of Economics - Varna). The visuals are prepared by your colleagues in the discipline "Photography and Video Production" and will be evaluated depending on your answers.

When answering each of the four posts, put yourself in the role of a student who sees this content on the Department of Marketing's Facebook page.

At the end of the survey, you must also fill in the data in the demographic block to receive the additional bonus points in the discipline you are studying this semester.

Section 1

Please take a look at the first suggestion. Take as much time as you find necessary.



Once you have considered the first proposal, please answer the following related questions:

1. For me, this post is:
Intelligible (1) (2) (3) (4) (5) (6) (7) Incomprehensible
2. For me, this post is:
Motivating (1) (2) (3) (4) (5) (6) (7) Demotivating
3. For me, the message in this post is:
Important (1) (2) (3) (4) (5) (6) (7) Unimportant

Please indicate to what extent you agree with the statements related to the first proposal. 1 means that you do not agree with the statement at all, and 7 means that you completely agree with it.

If you are filling in through a phone, please rotate it 90 degrees to visualize all answer options.

1. My post is interesting.
2. The post may make me think about using the dispensers.
3. After seeing the post, I would start using (or would continue to use) the dispensers.
4. The image in the post matches the text.
5. The text and the vision make me think of the University of Economics - Varna as a "Green University."
6. I clearly understood the message of the text in the post.
7. I understood the message of the post vision clearly.
8. The post can motivate students to use the dispensers.

Section 2

Please take a look at the second proposal. Take as much time as you find necessary.



Once you have considered the second proposal, please answer the following questions related to it:

1. For me, this post is:
Intelligible (1) (2) (3) (4) (5) (6) (7) Incomprehensible
2. For me, this post is:
Motivating (1) (2) (3) (4) (5) (6) (7) Demotivating
3. For me, the message in this post is:
Important (1) (2) (3) (4) (5) (6) (7) Unimportant

Please indicate the extent to which you agree with the statements related to the second proposal. 1 means that you do not agree with the statement at all, and 7 means that you completely agree with it.

If you are filling in through a phone, please rotate it 90 degrees to visualize all answer options.

1. My post is interesting.
2. The post may make me think about using the dispensers.
3. After seeing the post, I would start using or continue to use the dispensers.
4. The image in the post matches the text.
5. The text and the vision make me think of the University of Economics - Varna as a "Green University."
6. I clearly understood the message of the text in the post.
7. I understood the message of the post vision clearly.
8. The post can motivate students to use the dispensers.

Section 3

Please take a look at the third proposal. Take as much time as you find necessary.



Once you have considered the third proposal, please answer the following related questions:

1. For me, this post is:
Intelligible (1) (2) (3) (4) (5) (6) (7) Incomprehensible
2. For me, this post is:
Motivating (1) (2) (3) (4) (5) (6) (7) Demotivating
3. For me, the message in this post is:
Important (1) (2) (3) (4) (5) (6) (7) Unimportant

Please indicate to what extent you agree with the statements related to the third proposal. 1 means that you do not agree with the statement at all, and 7 means that you completely agree with it.

If you are filling in through a phone, please rotate it 90 degrees to visualize all answer options.

1. My post is interesting
2. The post may make me think about using the dispensers
3. After seeing the post, I would start using or continue to use the dispensers
4. The image in the post matches the text

5. The text and the vision make me think of the University of Economics - Varna as a "Green University."

6. I clearly understood the message of the text in the post
7. I understood the message of the post vision clearly
8. The post can motivate students to use the dispensers

Section 4

Please take a look at the fourth proposal. Take as much time as you find necessary.



Once you have considered the fourth proposal, please answer the following questions related to it:

1. For me, this post is:
Intelligible (1) (2) (3) (4) (5) (6) (7) Incomprehensible
2. For me, this post is:
Motivating (1) (2) (3) (4) (5) (6) (7) Demotivating
3. For me, the message in this post is:
Important (1) (2) (3) (4) (5) (6) (7) Unimportant

Please indicate to what extent you agree with the statements related to the fourth proposal. 1 means that you do not agree with the statement at all, and 7 means that you completely agree with it.

If you are filling in through a phone, please rotate it 90 degrees to visualize all answer options.

1. My post is interesting
2. The post may make me think about using the dispensers
3. After seeing the post, I would start using or continue to use the dispensers
4. The image in the post matches the text
5. The text and the vision make me think of the University of Economics - Varna as a "Green University."
6. I clearly understood the message of the text in the post
7. I understood the message of the post vision clearly
8. The post can motivate students to use the dispensers

Section 5

The following questions concern your water consumption habits.

1. Do you ever buy bottled water when you're out?

(1) Yes (2) No

2. Please indicate the main reason why you would buy bottled water when you are outside:

.....

3. Please indicate to what extent you agree with the statements related to the purchase and use of bottled water. 1 means that you do not agree with the statement at all, and 7 means that you completely agree with it.

If you are filling in through a phone, please rotate it 90 degrees to visualize all answer options.

1. Buying bottled water is squeezing my budget
2. I drink enough water when I'm not at home
3. It is important for me to drink enough water throughout the day
4. I don't feel good when I don't drink enough water
5. I usually carry a reusable water bottle with me
6. When there are water dispensers, I use them

Section 7

Please indicate to what extent you agree with the statements related to our university. 1 means that you do not agree with the statement at all, and 7 means that you completely agree with it.

If you are filling in through a phone, please rotate it 90 degrees to visualize all answer options.

1. I can define the University of Economics - Varna as a "Green University."
2. Environmental protection is important to me
3. I think that the consumption of bottled water harms the environment
4. When I use water dispensers, I protect the environment
5. With my personal actions, I can contribute to the protection of the environment
6. The university's environmental initiatives are important to me

Section 8

1. I am

(1) Male (2) Female

2. I am currently studying in a bachelor's or master's degree program in

.....

3. Please provide your administrative group number

.....

4. Please provide your faculty number

.....

Appendix 3 Content Quality Rating Scale Guide

Measurement: The quality of the content (MacKenzie and Lutz, 1989) was measured by the following scale consisting of three questions. The subjects responded using a seven-point scale of semantic differential, in which opposite characteristics of the content were included. Values from 1 to 3 indicated a positive attitude towards the measured characteristic, 4 – a neutral attitude, and between 5 and 7 – a negative attitude.

1. For me, this post is:

Intelligible (1) (2) (3) (4) (5) (6) (7) Incomprehensible

2. For me, this post is:

Motivating (1) (2) (3) (4) (5) (6) (7) Demotivating

3. For me, the message in this post is:

Important (1) (2) (3) (4) (5) (6) (7) Unimportant

Calculation: The result of the scale is *the arithmetic average of* all the answers given. Values close to one indicate positive ratings for the quality of the content. Values close to seven indicate negative ratings for the quality of the content. Values between three and five indicate a neutral attitude towards the quality of the tested content.

Appendix 4 Content Impact Assessment Scale Guide

Measurement: The impact of content (Wirtz, 2020) was measured using the following scale consisting of eight questions. The subjects responded using a seven-point scale in the Likert format, which included variables describing the types of content impact: from 1 – "strongly disagree" to 7 – "strongly agree", with 4 – "neither agree nor disagree".

1. My post is interesting
2. The post may make me think about using the dispensers
3. After seeing the post, I would start using (or would continue to use) the dispensers
4. The image in the post matches the text
5. The text and the vision make me think of the University of Economics - Varna as a "Green University."
6. I clearly understood the message of the text in the post
7. I understood the message of the post vision clearly
8. The post can motivate students to use the dispensers

Calculation: The result of the scale is *the arithmetic average* of all the answers given. Values close to one indicate a low degree of impact of the content. Values close to seven indicate a high degree of impact of the content.

The subscale for measuring the compliance of the content with the positional strategy is measured by questions 4 and 5. The subscale is calculated as *an arithmetic mean of the two answers given*.

The subscale for measuring the motives for purchase is measured by questions 1, 2, and 3. The subscale is calculated as *an arithmetic average of the three answers given*.

The subscale for measuring the consistency of content with the voice of the brand is measured by questions 4 and 5. The subscale is calculated as *the arithmetic average of the three answers given*.

Appendix 5 Can genAI tools displace people in the creative process of creating advertising and PR content ("Interview" with AI)

(40) Is it possible, now or in the future, for humans to be replaced by generative AI tools in the creation of content for advertising or PR campaigns?

ChatGPT: Generative Artificial Intelligence (genAI) has the potential to play an important role in creating content for advertising and PR campaigns. It can automate certain aspects of the creative process, such as generating text, images, or even video. However, it is important to consider several factors:

1. Creativity and uniqueness: Humans offer a unique perspective, creativity, and intuition that can't be fully mimicked by artificial intelligence for the moment. Creative ideas, knowledge of cultural nuances, and emotional connection with audiences often require a human approach.

2. Ethics and Value: Creating content for PR campaigns often requires sensitivity and understanding of social contexts. Generative AI can generate content quickly, but it is not always capable of assessing the ethical implications of that content.

3. Collaboration: People are more likely to work in tandem with genAIs, using tools to improve and accelerate their creative process. Generative AI can be useful for generating ideas or reformulating text, but the need for human intervention for the final product is likely to remain.

4. Technological advances: As technology advances, the genAI may become better at simulating human creative processes. However, there will always be aspects of content creation that require human understanding and intuition.

In conclusion, the presence of genAI may change the way content is created, but it is not likely to completely replace humans in this process. Instead, we'll likely see the two combining to achieve more effective and innovative content.

(40) What are the main changes that can occur in the creation of content for marketing campaigns as a result of the presence of genAI?

ChatGPT: The presence of generative artificial intelligence (genAI) could lead to a number of significant changes in content creation for marketing campaigns. Here are some of the key changes:

1. Content Automation: genAI can automate the process of generating texts, images, and videos, which will save time and resources. Marketers can quickly get variations of creatives and visualizations.

2. Personalization at scale: With the help of genAI, marketers can create personalized content for different target audiences to suit specific interests and needs. This will increase the engagement and effectiveness of the campaigns.

3. Better Data Analytics: genAI can analyze huge amounts of data to uncover trends and user preferences. This information can be used to create content and optimize campaigns in a targeted manner.

4. Iterative Testing: genAI can make it easier to A/B test different variations of content, allowing marketers to quickly evaluate what works best and adapt their strategies in real-time.

5. Creative Inspiration: Generative AI tools can offer new ideas and concepts that marketers can use as a foundation or inspiration for their campaigns.

6. Real-Time Content Creation: genAI can be integrated into social media platforms, enabling real-time content generation to respond to current events or trends.

7. Cost Optimization: With the automation and efficiency provided by genAI, companies can reduce the cost of content creation while increasing volume and quality.

8. ***Ethical and Legal Challenges***: *As the use of genAI increases, new ethical and legal issues will arise related to copyright, information manipulation, and responsibility for the content created.*

As a result of these changes, marketers will need to adapt their approaches and strategies to maximize the benefits of generative AI and address new challenges.

(40) How can the genAI facilitate A/B testing of different variants of marketing content?

ChatGPT: *Generative Artificial Intelligence (genAI) can greatly facilitate A/B testing of different variations of marketing content in several ways:*

1. *Create multiple variations: genAI can quickly generate multiple variations of texts, titles, images, and even videos that can be used in A/B tests. Instead of manually creating different variants, the genAI can produce variations of content in a short time.*

2. *Test Personalization: With the help of user data, genAI can create personalized variations of content, allowing testing different approaches to specific audience segments. This can accelerate discoveries about the preferences of different user groups.*

3. *Real-time data analysis: The genAI can analyze data from tests conducted in real time, providing information about which variant works best among the target audience. This fast processing gives marketers the ability to make adaptations and adjustments right away.*

4. *Decision Optimization: Through machine learning algorithms, the genAI can suggest optimal content variations based on previous performances and data collected during the tests. This helps to minimize risk and increase the likelihood of success.*

5. *Iterative Testing: The genAI allows for continuous iterative testing, where new variants can be generated and tested after analyzing previous results. This cycle can be much faster than the traditional process.*

6. *Hypothesis Generation: genAI can help marketers generate hypotheses based on data and past campaigns. These hypotheses can be tested with an A/B methodology, resulting in a better understanding of consumer behavior.*

7. *Presentation of results*: *genAI can facilitate the visualization and presentation of A/B test data, helping teams better understand the results and make informed decisions.*

With its overall ability to automate and optimize processes, genAI is a powerful tool that can significantly increase the effectiveness and efficiency of A/B testing in marketing.

(3.5) If we assume that with its "general ability to automate and optimize processes, GENAI is a powerful tool that can significantly increase the effectiveness and efficiency of A/B testing in marketing", then what is the role of marketing professionals in this process?

ChatGPT: *The use of generative artificial intelligence (genAI) in marketing, including in A/B testing processes, can undoubtedly automate and optimize a number of tasks. This can lead to faster results, more precise audience targeting, and a better understanding of consumer preferences. Despite these benefits, the role of marketers remains critical and is transforming to adapt to new technologies.*

1. ***Strategic planning and vision***

Marketers must formulate the overall strategy by setting goals, key performance indicators (KPIs), and testing guidelines. The genAI can offer solutions based on the data collected, but people set the context and strategic directions.

2. ***Creativity and innovation***

Although genAI can generate ideas and content, people remain at the forefront of creating original and creative concepts. Marketers use their knowledge and intuition to come up with innovative approaches to test.

3. ***Interpretation of results***

The genAI can analyze data and generate conclusions, but marketers need to interpret these results in the context of the brand, audience, and long-term strategy. Human intuition and understanding of the market remain indispensable.

4. **Ethics and transparency**

The genAI has the potential to automate processes, but ethics and transparency issues require human judgment. Marketers need to ensure that the use of genAI is ethical and transparent, especially concerning user data.

5. **Adaptation and training**

As technology advances, marketers must constantly train and adapt to use new tools effectively. This includes understanding the capabilities of the genAI and being able to integrate it into their daily tasks.

6. **Human-Machine Interaction Management**

Despite automation, the successful implementation of genAI in A/B testing requires coordination and management of the interaction between machine and human. Specialists need to know when and how to incorporate the human element to achieve the best results.

In conclusion, while the genAI automates many aspects of A/B testing, the role of marketers remains important in creating strategies, creativity, ethics, and data interpretation. Instead of being replaced, marketing professionals need to adapt and take advantage of the opportunities that the genAI offers.

(3.5) Let's imagine that inexperienced professionals and genAI are working on the same assignment to create marketing content. Who would do better in terms of the requirements that this content must meet - the team of young professionals with no experience or genAI?

ChatGPT: When comparing the abilities of a team of inexperienced young professionals and generative artificial intelligence (genAI) in the task of creating marketing content, the results would depend on various factors such as the context of the task, the specific requirements, and the complexity of the project. Here's how their advantages and disadvantages can be considered:

Advantages and disadvantages of young professionals without experience

Advantages:

1. **Fresh ideas and creativity:** *Young specialists, although inexperienced, can offer innovative and unconventional ideas. Their lack of experience can sometimes make them more open to new concepts and unconventional approaches.*

2. **Emotional Intelligence:** *Humans, even without experience, understand the emotional context of communication better than machines. They can create content that resonates emotionally with the target audience.*

3. **Ability to learn:** *Young professionals learn quickly and can adapt to feedback, improving content in the process.*

Disadvantages:

1. **Lack of experience:** *Lack of experience can lead to lower-quality content, especially if the requirements are specific or complex.*

2. **Longer turnaround time:** *Young professionals may need more time to understand the task and create content that meets standards.*

3. **Limited market knowledge:** *They may not have the necessary understanding of the audience, competitors, and market trends.*

Advantages and disadvantages of genAI

Advantages:

1. **Speed and efficiency:** *genAI can generate content quickly and in large volumes, which is useful in the short term or for the need for mass production of marketing materials.*

2. **Compliance:** *The genAI can accurately follow specified instructions and adhere to certain formats and standards, which reduces the risk of errors or deviations from the assignment.*

3. **Access to big data:** *The genAI has access to huge databases and can use this knowledge to create content based on existing examples and best practices.*

Disadvantages:

1. **Limited creativity:** *Although the genAI can generate new ideas, these ideas are often based on existing data and models, which can limit true creativity and innovation.*

2. **Lack of emotional depth:** *genAI has difficulty understanding emotions and nuances in communication, which can lead to content that is unable to connect deeply with the audience.*

3. **Ethical and moral considerations:** *The genAI may generate content that is not ethical or appropriate if it is not properly controlled and managed.*

Conclusion

Depending on the specific requirements and context of the assignment, the genAI is likely to do better in tasks where speed, precision, and compliance with formal requirements are key. This is especially true if the task is to create a large volume of content in a short time and in the presence of clear instructions.

On the other hand, young professionals would have an advantage when the task requires more creativity, emotional commitment, and the ability to adapt to new or specific contexts. They can offer fresh ideas and innovative solutions that the genAI cannot generate.

Ideally, the combination of young professionals and genAI would provide the best outcome, with each compensating for the other's weaknesses and creating content that is both creative, effective, and precise.

(3.5) How can the genAI be used in training young professionals with no experience who need to create specific content for advertising or PR campaigns?

ChatGPT: Generative Artificial Intelligence (genAI) can be an extremely useful tool in training young professionals with no experience, especially in the field of creating content for advertising or PR campaigns. Here are a few ways in which genAI can be integrated into the training process:

1. Providing examples and templates

The genAI can generate examples of successful advertising and PR content based on industry best practices. Young professionals can study these examples and use them as templates for their own projects. Thus, they will become familiar with effective structures and writing styles.

2. Personalized Training

The genAI can analyse the needs and level of each young professional and create personalised learning materials. For example, if one of them needs improvement in their title writing, the genAI can generate exercises that specifically target that skill.

3. Quick feedback

The genAI can provide immediate feedback on content created by young professionals. This includes bug fixes, suggestions for improvements, and even evaluating stylistic elements such as tone, clarity, and engagement of the text.

4. Simulations & Scenarios

The genAI can create simulations of real-world situations in which young professionals need to react quickly and adequately. For example, simulating a crisis PR scenario in which they have to write a press release in response to negative news, or creating content for a limited-time campaign.

5. Generate ideas and creative directions

Young professionals often face the challenge of coming up with original ideas. The genAI can be used as an idea generator, offering different concepts and approaches for advertising and PR campaigns. This can stimulate their creativity and help them overcome creative blockages.

6. *Content Optimization*****

The genAI can help young professionals optimise their content for different platforms and target groups. For example, if they create text for social networks, the genAI can suggest how to adapt the content for different formats and audiences, while following best practices.

7. *Analysis of competition and trends*****

The genAI can analyze competitive content and current marketing trends, providing young professionals with information on what is working well in the market. This will help them create more competitive and up-to-date materials.

8. *Practical tasks and challenges*****

The genAI can create practical tasks and challenges for young professionals to solve. This can include creating content for dummy campaigns, with the genAI providing context and requirements, and then evaluating the results and making recommendations for improvements.

9. *Automation of routine tasks*****

The genAI can take over routine and technical tasks, such as text editing, grammar, and spelling, which will free up time for young professionals to focus on creative and strategic aspects of the content.

10. *Preparation for real projects*****

Once young professionals have gained some experience through the above-mentioned methods, the genAI can offer them more complex tasks that are closer to real projects. This will enable them to apply what they have learned in practical settings, under the supervision and support of the tool.

Conclusion

The genAI can be a powerful tool in the training of young professionals, providing them with resources, feedback, and practical exercises that accelerate their development and prepare them for real challenges in the creation of advertising and PR content. This will not only increase the effectiveness of training but also allow them to learn the skills needed for a successful career in marketing.

(3.5) What are the possible scenarios if young professionals without experience do not have the theoretical knowledge necessary to be able to adequately evaluate the recommendations given by the genAI when creating advertising or PR content?

ChatGPT: If young professionals with no experience do not have enough theoretical knowledge to adequately evaluate the recommendations given by the genAI when creating advertising or PR content, this can lead to several possible scenarios:

1. *Over-reliance on genAI*****

Without the necessary theoretical knowledge, young professionals may become overly dependent on the recommendations of the genAI without understanding the foundations on which these proposals are based. This can lead to the mechanical application of the advice, without critical evaluation or adaptation to the specific context.

*****Effects.*****

- Lack of personalization and creativity in content.*
- Risks of creating content that is not suitable for the target audience or does not correspond to the specific market situation.*

2. *Misinterpretation of recommendations*****

If young professionals do not understand basic concepts such as target audience, brand identity, or marketing goals, they may misinterpret genAI offerings. This can lead to improper use of the tool and the creation of content that does not meet the goals set.

****Effects:****

- *Failure of campaigns to achieve the desired results.*
- *Creating content that can damage the brand's reputation or cause negative reactions.*

3. *Lack of critical thinking*****

Without theoretical knowledge, young professionals may not have the ability to analyze and evaluate the quality of the content they create. They can accept genAI recommendations without critical thinking, which limits their development and their ability to make informed decisions.

****Effects:****

- *Reduced ability to adapt to new situations or unusual problems.*
- *Creating content that doesn't meet the diverse needs of customers or the brand.*

4. *Failure to recognize ethical and legal risks*****

The genAI may generate content that is legally or ethically problematic. Without the necessary knowledge, young professionals may not be able to recognize these risks and create content that will provoke legal controversy or ethical criticism.

****Effects:****

- *Potential legal problems for the company.*
- *Causing long-term damage to the reputation of the brand.*

5. *Limited professional development*****

Young professionals without theoretical knowledge may not be able to develop their professional skills at a deeper level. They can remain in the role of directional executors without gaining the ability to create and manage successful campaigns on their own.

****Effects:****

- *Slow career growth and limited development opportunities.*
- *Lack of self-confidence and initiative at work.*

6. *Problems in adapting to new technologies and trends*****

Without solid basic knowledge, young professionals may have difficulty adapting to new technologies or marketing trends that require an understanding of basic principles and concepts.

****Effects:****

- *Lagging behind competitors who successfully integrate new technologies and approaches.*
- *Loss of relevance and effectiveness of marketing and PR campaigns.*

Conclusion

A lack of theoretical knowledge among young professionals can significantly limit their ability to make effective use of the genAI recommendations. This can lead to content being created that is not in line with marketing goals, does not meet ethical standards, or is simply not effective. To avoid these scenarios, young professionals must receive the necessary theoretical training to enable them to understand and critically evaluate the advice and content generated by the genAI.

(3.5) Is it possible to overcome these theoretical knowledge gaps through the genAI? If so, how?

ChatGPT: Yes, genAI can be used to overcome the lack of theoretical knowledge in young professionals. This can be done through different approaches that combine knowledge

delivery, practical experience, and continuous feedback. Here are some ways in which genAI can help:

1. *Interactive training modules*

The genAI can generate interactive training modules that gradually introduce theoretical concepts in marketing and PR while young professionals work on real tasks. These modules can include short lectures, interactive quizzes, and examples related to specific projects they are working on.

***Example:** While the specialist is creating content, the genAI can offer brief explanations about the importance of the target audience, different types of messages, or the basic principles of branding.*

2. *Contextualized Learning*

The genAI can provide information and knowledge in the context of ongoing tasks. When young professionals are confronted with a particular problem or question, the genAI can offer theoretically grounded solutions and explanations to guide them to the right solution.

***Example:** If a specialist needs to write a press release but has no experience in doing so, the genAI can offer a structured approach, explaining each step – from the title to the last paragraph, while providing examples and explaining why each part is important.*

3. *Practical Case Studies with Feedback*

The genAI can generate practical case studies based on real or simulated situations in marketing and PR. Once the specialists complete the tasks, the genAI can provide detailed feedback while explaining the theoretical foundations of the right decisions.

***Example:** Specialists can be placed in a situation of brand crisis, where they need to react quickly. The genAI will analyse their approach and explain the theoretical aspects of crisis management.*

4. *Personalized learning paths*

The genAI can analyze the strengths and weaknesses of each young professional and create personalized learning paths that include theoretical training and practical exercises aimed at specific areas of need.

***Example:** If a specialist shows poor skills in writing advertising copy, the genAI can offer a series of theoretical lessons and practical exercises to gradually develop these skills.*

5. *Online learning platforms with integrated genAI*

The genAI can be integrated into online learning platforms where young professionals can learn the theory through courses and lessons. At the same time, genAI can offer practice and exercises that reinforce what has been learned.

***Example:** A marketing training platform may offer young professionals the opportunity to take a course on the basics of digital marketing, after which the genAI can offer them tasks related to their current work to help them put what they have learned into practice.*

6. *Digital mentors*

The genAI can function as a digital mentor that answers questions and provides information to young professionals in real time. This allows professionals to receive quick and relevant answers while working without interrupting the learning process.

***Example:** If a specialist is wondering what type of content is best for a particular target audience, he can ask the genAI, which will give a reasoned answer supported by theoretical information.*

7. *Simulations of real scenarios*

By simulating real-world scenarios in marketing and PR, genAI can put young professionals in situations where they need to make decisions based on theory. The genAI can then assess its performance and offer explanations and guidelines for improvement.

***Example:** Simulation of a new product launch, where specialists have to plan and execute a marketing campaign, and then get feedback from the genAI on their approach.*

Conclusion

The genAI can effectively compensate for the lack of theoretical knowledge of young professionals through integrated training, contextualised provision of information, and continuous feedback. By combining theory and practice, genAI can help young professionals not only acquire the necessary knowledge but also apply it effectively in real-world situations, while developing critical thinking and skills for independent work.

(3.5) Let us now imagine that in the future the entire process of creating content for advertising and PR campaigns is automated and executed by the genAI, and that the decisions within the campaign about what content to use and with what frequency are entrusted to the genAI. What would be the risks in such a scenario? And what are the positives?

ChatGPT: If in the future the entire process of creating content for advertising and PR campaigns is automated and executed entirely by generative artificial intelligence (genAI), this would bring both significant positives and significant risks. Here are some of them:

Positives

*#### 1. **High efficiency and speed***

The genAI can generate content much faster and in larger volumes than a human team. This can lead to faster campaign execution and the ability to adapt in real-time based on current data.

*#### 2. **Precise customization***

With access to large volumes of data, genAI can personalize content for different audience segments based on individual preferences and behaviors. This can increase engagement and campaign effectiveness.

*#### 3. **Continuous optimization***

The genAI can analyze data in real-time and optimize campaign content and strategy on the go. This includes adjusting the frequency of posting, changing the format of the content, and adapting messages according to the audience's reaction.

*#### 4. **Cost reduction***

Automation can significantly reduce the human resources costs associated with content creation and management. This would allow companies to focus their resources on other strategic areas.

*#### 5. **Consistency of messages***

The genAI can ensure consistency in brand messages by strictly following set parameters and guidelines, while eliminating the risk of human errors or inconsistencies in content.

Risks

*#### 1. **Lack of human creativity and emotional intelligence***

While genAI can generate creative content, it still lacks true human creativity and the ability to deeply connect emotionally with audiences. Campaigns entirely created by genAI can turn out to be mechanical or soulless, which can reduce their effectiveness in building brand identity and loyalty.

*#### 2. **Ethical and legal issues***

Automated content creation can lead to missing ethical and legal standards. The genAI may inadvertently generate content that is inappropriate, offensive, or infringing on copyright, which could lead to legal problems and reputational damage to the brand.

*#### 3. **Limited ability to adapt to unpredictable situations***

The genAI is based on historical data and algorithms. In cases of unforeseeable events or crises, the genAI may not react adequately or quickly, as appropriate data or scenarios may be lacking in its model.

4. ****Data quality dependence****

The quality of the decisions taken by the AIS depends on the quality of the data at its disposal. If the data is incomplete, incorrect, or biased, it can lead to incorrect decisions and strategies.

5. ****Reduced role of the human factor****

Process automation can lead to a reduction in the need for human intervention, which could reduce jobs and limit the development of professional skills in marketing and PR. In the long run, this can lead to a deficit of expert knowledge and skills.

6. ****Possibility of predictability and homogeneity****

If all companies start using genAI to create content, there can be a homogenization effect – the content can become too predictable and uniform. This can reduce the impact of campaigns and make it difficult for brands to differentiate in the market.

Conclusion

Automating the process of creating and managing content through genAI offers significant benefits, such as efficiency, personalization, and optimization. However, it also carries with it serious risks associated with a lack of human creativity, potential ethical issues, and dependence on data quality. The balance between automation and human intervention is likely to be key to the successful integration of genAI into future advertising and PR campaigns.

(3.5) Is it possible to overcome these risks without human intervention?

ChatGPT: Eliminating the risks associated with automating content creation and campaign management through genAI without human intervention is extremely challenging. However, some approaches can help minimize these risks, though they probably can't eliminate them:

1. ****Improving genAI models and algorithms****

The genAI can be trained on larger and more diverse datasets that include different cultural, ethical, and legal contexts. This can help reduce the risk of generating inappropriate content. However, a fully automated solution will not guarantee that every situation will be properly evaluated, as modeling human creativity and morality is extremely complex.

2. ****Integration of ethical and legal frameworks****

The genAI models can be programmed to follow certain ethical and legal guidelines, such as avoiding offensive language or checking for copyright infringement. This can reduce the risk of creating content that may be ethically or legally problematic. However, such frameworks are difficult to define and maintain, and cannot cover all possible scenarios.

3. ****Simulations and testing before publication****

The genAI can be set up to run simulations of different scenarios and assess the potential reactions of different audience segments before publishing content. This can help identify potential problems before they become real. But even with the best simulations, unexpected situations can arise that the genAI cannot predict.

4. ****Advanced self-learning mechanisms****

The genAI can be designed to learn from previous mistakes and successes. Over time, the system can become more intelligent and avoid certain types of problems. However, self-learning is dependent on the quality of input data and can be limited by unpredictable circumstances or new challenges.

5. ****Artificial emotional algorithms****

Although the creation of fully functional artificial emotions is in the realm of science fiction, genAI can be programmed with algorithms that simulate emotional reactions and

evaluate the emotional tone of content. This could help the genAI avoid creating content that could be perceived as cold or soulless. But such an approach is extremely complex and is likely to remain incomplete compared to true human emotional intelligence.

6. **Multiple layers of verification**

It is possible to create a system of multiple layers of content verification and validation, with each content being analysed by different genAI systems, each with its own specific task (e.g., one for ethics, another for legal issues, a third for creativity). This can help minimize the risk, but it still does not guarantee complete safety.

Limitations of Automation Without Human Intervention

- **Unpredictable situations:** *The genAI, no matter how complex, will not be able to fully predict all possible audience reactions, especially in crisis or extremely specific situations.*

- **Creativity and innovation:** *Human creativity and the ability to think innovatively can hardly be replaced by the genAI. Automation can lead to homogenization and a lack of uniqueness in content.*

- **Ethics and ethics:** *Ethical decisions often require a nuanced understanding of context, cultural differences, and the emotional effect on audiences, which is still a challenge for genAI.*

Conclusion

Although the genAI can significantly reduce some of the risks by refining algorithms, integrating ethical frameworks, and using simulations, eliminating the risks without human intervention is unlikely. Human creativity, critical thinking, and emotional intelligence still play an indispensable role in creating effective, ethical, and creative marketing and PR campaigns. The genAI can be an extremely useful tool, but human control is still needed to achieve optimal results and minimize risks.

(3.5) Now, let's imagine the owner of a small advertising agency who is faced with the following dilemma: he can hire a specialist without any experience or use the genAI for the work that the specialist would do. If he does not hire a new person, the owner will continue to work profitably. If he hires, he will start accumulating losses. Which of the two options is better for the owner: to hire a specialist without experience or to use genAI, to be able to meet the greater volume of work that he can no longer cope with on his own?

ChatGPT: Given the dilemma posed to the owner of a small advertising agency, the choice between hiring a specialist with no experience and using genAI to take on a larger volume of work depends on various factors related to the long-term goals of the business, the current financial situation, and the nature of the tasks. Here are the advantages and disadvantages of each of the options:

1. **The genAI Selection**

Advantages:

- **Profit maintenance:** *The use of genAI means that the owner can continue to operate at a profit without increasing personnel costs. This is important, especially if the agency is in an early stage of development or if there is a need to stabilize the financial situation.*

- **Increased efficiency:** *genAI can quickly generate content that saves time and effort. This will allow the agency to take on more projects and complete them quickly, while maintaining or increasing revenue.*

- **Consistency:** *The genAI can provide consistency in content quality, which is especially useful when performing more routine tasks or when working with a large volume of standard projects.*

Disadvantages:

- **Lack of human capital development:** Relying only on the genAI limits the opportunity to develop human resources and create in-house talent. In the long run, this can make it difficult for the agency to innovate and be creative.

- **Limited creativity:** Although the genAI can generate content, it lacks the human creativity and ability to adapt to unique and specific customer requirements. This can limit the variety and individuality of projects.

- **Reliance on technology:** Full reliance on the genAI increases the agency's reliance on technology and external software providers, which can create vulnerability if technologies change or become unavailable.

2. **Choosing a specialist with no experience**

Advantages:

- **Long-term development:** Hiring a young specialist, although without experience, creates an opportunity for long-term building of internal talent. Over time, this specialist can become a valuable asset to the agency, bringing new ideas, creativity, and a human perspective.

- **Flexibility and adaptability:** Human employees can think critically, adapt to unpredictable situations, and provide innovative solutions. This is especially valuable in the creative industries, where the uniqueness of each campaign is key.

- **Creating a corporate culture:** Employees, even without experience, contribute to the development of a corporate culture and the creation of team dynamics, which can be an important factor for the long-term success of the agency.

Disadvantages:

- **Financial losses:** Hiring a professional with no experience can lead to losses in the short term, especially if he/she requires time for training and adaptation. This could put a strain on the agency's budget and put at risk its current profitability.

- **Training Need:** The specialist will need training and mentoring, which will take the owner's time and resources. It is possible that at the beginning, the productivity of the new employee will not be at a high level.

- **Unclear results:** Despite training efforts, there is no guarantee that the new specialist will reach the required level of competence in a short time. This can lead to a lower quality of work in the beginning.

Conclusion

In the context of the specific situation, if the owner's main goal is to preserve financial stability and effectively manage the larger volume of work, the use of genAI seems to be a more rational solution in the short term. This will allow the agency to cope with the growing demands without taking financial risk.

On the other hand, if the owner has ambitions for the long-term development of the team and for building creative potential, hiring a specialist with no experience can be a good investment in the future, despite the short-term financial losses.

The best solution depends on the owner's priorities – whether they are aimed at short-term profitability and efficiency, or long-term development and innovation. In some cases, it is possible to opt for a hybrid approach, where the genAI is used for routine tasks, and the human specialist develops in the direction of creative and strategic activities.

(3.5) What new skills do professionals need to develop to better use genAI in their work on creating content for advertising and PR campaigns?

ChatGPT: With the advancement of genAI and its increasing use in advertising and PR campaigns, professionals need to develop new skills that will allow them to use these technologies more adequately and effectively. Here are some key skills that are especially important:

1. **Digital literacy and understanding of the genAI**

- **Technical Foundation:** Professionals must understand the basic principles of genAI operation, including how they are trained and what data is used. This will allow them to better understand the capabilities and limitations of the technology.

- **Tools and platforms:** Knowledge of the platforms and software used to generate content, as well as skills to work with them (e.g., GPT-based platforms, AI tools for graphic design and video).

- **Ethics and Responsibility:** Knowledge of the ethical aspects of using the genAI, including topics such as algorithmic bias, privacy, and legal issues.

2. **Analytical thinking and data management**

- **Data analysis:** Skills to analyze and interpret data that the genAI uses and generates. This includes reading the results of AI analytics and understanding user behavior.

- **Content Optimization:** Ability to use genAI to optimize content based on analytics. Specialists should be able to identify which content elements work best and how to improve them.

3. **Creative thinking in collaboration with the genAI**

- **Creativity with genAI:** While genAI can generate ideas, professionals need to be able to evaluate, adapt, and refine them, adding human creativity and uniqueness.

- **Creating genAI briefs:** Ability to formulate clear and effective instructions (briefs) to the genAI to generate content that is relevant to the needs of the campaign.

4. **Project Management & genAI Integration**

- **AI Project Management:** Ability to integrate genAI into different stages of advertising and PR campaigns – from concept creation to content distribution and optimization.

- **Flexibility and adaptability:** Ability to adapt strategies and tactics based on the performance of the genAI and depending on changing market conditions.

5. **Collaborative skills and interdisciplinarity**

- **Teamwork:** Ability to collaborate with IT specialists, data analysts, and other experts who are involved in the process of developing and maintaining the genAI.

- **Interdisciplinary approach:** Ability to understand and integrate knowledge from different disciplines (marketing, psychology, technology) to create more effective campaigns.

6. **Critical Thinking and Ethical Assessment**

- **Critical evaluation of results:** Ability to critically evaluate the content generated by the genAI and the ability to identify possible problems or shortcomings.

- **Ethical judgment:** Ability to assess the ethics of the content created and its impact on the audience.

7. **Continuous learning and adaptation**

- **Lifelong learning:** As GI technologies evolve rapidly, professionals need to be ready to learn new skills and adapt their strategies to the latest trends and innovations.

- **Trend tracking:** Constantly updating knowledge of new tools and practices in the field of genAI and marketing.

Conclusion

Advertising and PR professionals who develop these skills will be able to more adequately and effectively use genAI in their work, while adding value through their creativity, critical thinking, and strategic planning. This will allow them to create better-targeted and more successful campaigns in the future.

(3.5) Should we then understand that the main advantages of specialists over genAI are creativity and emotional intelligence? Does this mean that in other elements of the

creative process of content creation, genAI is somewhat superior to specialists, especially those without experience and knowledge?

ChatGPT: *Yes, creativity and emotional intelligence are two of the main advantages that specialists have over genAI in the content creation process. This does not mean that genAI is completely superior to specialists in other elements of the creative process, but there are certain aspects in which genAI can be more effective, especially against specialists without experience and knowledge.*

How genAI outperforms professionals without experience:

1. *****Speed and efficiency:*****

- *The genAI can generate content much faster than any human. This is especially useful for tasks that require processing large amounts of data or generating multiple variations of content.*

2. *****Access to huge amounts of information:*****

- *The genAI can use and analyze huge databases to generate content that is tailored to the latest trends, algorithms, and user behaviors. Professionals without experience may not have such knowledge or the ability to analyze it quickly.*

3. *****Consistency and absence of human error:*****

- *The genAI can maintain consistency in the style, tone, and quality of content, which reduces the risk of human errors or inconsistencies. In contrast, new professionals may make mistakes due to a lack of experience.*

4. *****Automation of routine tasks:*****

- *The genAI can automate routine and time-consuming tasks, such as compiling reports, creating numerous variations of ad text, or analyzing market data. This frees up time for more creative and strategic tasks.*

5. *****Customization at scale:*****

- *The genAI can create personalized content for different audience segments on a large scale, something that may be difficult or impossible for a specialist with no experience to achieve with high accuracy.*

Where specialists still have an advantage:

1. *****Creativity:*****

- *People can create original ideas and combine different concepts in innovative ways. The genAI can mimic creativity, but it is still limited in its ability to create truly new and unexpected solutions.*

2. *****Emotional intelligence and nuances:*****

- *Professionals can understand and adapt to the audience's emotional needs and reactions by creating content that resonates on a deeper level. The genAI, although capable of analyzing emotional tones, cannot understand and experience emotions in the same way as humans.*

3. *****Moral and ethical judgments:*****

- *The human being can make complex moral and ethical decisions that require a deep understanding of the context and long-term consequences. The genAI may follow ethical guidelines, but there is no real understanding of ethics.*

4. *****Cultural and contextual sensitivity:*****

- *Specialists can better understand and take into account cultural differences and contextual nuances that can affect the effectiveness of content. The genAI may have limitations in understanding these aspects, especially in highly specific or emerging cultural contexts.*

Conclusion

The genAI can outperform professionals, especially those without experience, in aspects such as speed, efficiency, consistency, and data processing. However, people still have an advantage when it comes to creativity, emotional intelligence, moral judgment, and cultural

sensitivity. The best outcome is often achieved by combining technology with human skills, with genAI being used to automate routine tasks and assist professionals as they focus on more creative and strategic activities.

(3.5) Is it possible that in some future period, the genAI will gain an advantage over specialists without experience, and in these four areas in which they still outperform them?

ChatGPT: *In the future, the genAI may gain an advantage over professionals with no experience in some of the four areas where specialists are currently still outperforming it. This depends on advances in technology and the ability of the genAI to adapt and evolve. Here's how the genAI can address the challenges in these areas:*

1. **Creativity**

Current status:

- *Currently, the genAI can generate content that is based on available data and examples, but original creativity, which involves the creation of completely new ideas and concepts, remains in the realm of human abilities.*

Future prospects:

- **Advanced Algorithms:** *With advances in deep learning models and generative algorithms, genAI can become better at creating innovations by combining different ideas and concepts in a new way.*

- **Creating new models:** *It is possible to develop new approaches and models that can better mimic the human creative process, which would allow the genAI to generate more original and innovative content.*

2. **Emotional intelligence**

Current status:

- *The genAI can analyze and respond to emotional tones, but does not possess any real understanding or experience in emotional intelligence. People can understand and adapt content based on complex and nuanced emotional responses.*

Future prospects:

- **Improved models for recognizing emotions:** *Developing better models for recognizing and interpreting emotional responses may allow genAI to better mimic human emotional intelligence.*

- **Contextual Extension:** *A genAI can be trained on richer contexts and cultural nuances, allowing it to generate content that more accurately resonates with different emotional states of the audience.*

3. **Moral and ethical judgments**

Current status:

- *While the genAI may follow pre-set ethical guidelines, true moral and ethical decisions require a deep understanding of the context and implications, which is still difficult for the genAI.*

Future prospects:

- **Advanced ethical algorithms:** *The development of more complex algorithms and decision-making systems may allow the genAI to make better moral and ethical judgments.*

- **Human intervention:** *It is possible that the genAI could be designed to work closely with people to provide context and validate the ethics of decisions, which would allow the genAI to address more complex ethical issues.*

4. **Cultural and contextual sensitivity**

Current status:

- *The genAI may have limitations in understanding cultural and contextual nuances that are essential for creating content that is relevant and relevant to specific audiences.*

Future prospects:

- **Better contextual learning:** *A GENAI can be trained on richer and more diverse cultural contexts and examples, allowing it to be more sensitive to cultural and contextual nuances.*

- **Integration of local experts:** *The genAI can be combined with local experts and specialists to provide the necessary context and help adapt the content to specific cultural conditions.*

Conclusion

While the genAI can improve in these areas and possibly gain an advantage in the future, significant challenges remain. The development of genAI in these directions will require significant advances in algorithms and modeling of the human experience. At the moment, specialists still play a key role in adding nuances and innovations that the genAI cannot fully replicate. The genAI will continue to be a powerful tool for automation and analysis, but true innovation and a deep understanding of human context and emotions are likely to remain in the realm of human experience for some time.

(3.5) For how long?

ChatGPT: Determining the exact timeline by which the genAI can make progress in the areas where specialists currently have an advantage is complex and depends on multiple factors, including the pace of technological development, scientific discoveries, and societal and ethical norms. However, we can look at some general trends and projected timeframes:

1. **Creativity**

- **Short-term (1-3 years):** *At the moment, the genAI is already demonstrating the ability to generate creative content, but within existing templates and examples. Some shorter-term improvements will include refining models for combining ideas in a new way, but true originality, as with human creative skills, may take longer.*

- **Medium-term (3-7 years):** *With continued development, the genAI may begin to create more innovative concepts and ideas, but may still need human intervention to fully think creatively and adapt.*

- **Long-term (7-15 years):** *If technology advances at a rapid pace, genAI could reach a significant level of creativity close to human, although there will likely be specific areas where human creativity will remain indispensable.*

2. **Emotional intelligence**

- **Short-term (1-3 years):** *Emotion recognition technologies will continue to improve, improving the ability of the genAI to identify and respond to emotional cues.*

- **Medium-term (3-7 years):** *genAI may begin to demonstrate a better understanding of emotional nuances, but a true experience and understanding of human emotional intelligence will be difficult to fully imitate.*

- **Long-term (7-15 years):** *The genAI may make significant progress in simulating emotional responses and interactions, but there will still be differences relative to true human emotional intelligence.*

3. **Moral and ethical judgments**

- **Short-term (1-3 years):** *It is possible to improve the algorithms for following ethical guidelines, but a true understanding of complex moral dilemmas will require more progress.*

- **Medium-term (3-7 years):** *The genAI can be designed to make better ethical decisions through advanced algorithms and models, but integrating the human context will be challenging.*

- **Long-term (7-15 years):** *The development of more complex ethical models may allow the genAI to make better moral judgments, but a full understanding of the context and consequences is likely to remain in the hands of the people.*

4. **Cultural and contextual sensitivity**

- ***Short-term (1-3 years):** Improvements in cultural and contextual data processing will help genAI to be more sensitive to differences, but there will be limitations in understanding deep cultural nuances.*

- ***Medium-term (3-7 years):** With increasing training data and contextual examples, genAI can better adapt to cultural specificities, but can be limited by its algorithmic frameworks.*

- ***Long-term (7-15 years):** The genAI may develop a better understanding of cultural nuances and context, but will still need human intervention to fully adapt to specific cultural settings.*

Conclusion

Projections for the development of genAI in these areas are conditional and depend on many factors, including the pace of technological development and the ability of researchers and developers to overcome existing constraints. While progress in these areas is likely, much more work will likely be needed to achieve a level of understanding and adaptation that will completely replace or surpass human capabilities in these areas.

The interview ends on 28.08.2024.