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Implementing Visual Generative Artificial Intelligence in B2C Advertising

Managerial view on key facilitators, challenges and optimal practices

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ABSTRACT:
During the recent years the development of technology and the widespread use of artificial intelligence in corporate business operations has reached various actors in the field of business. The relevant example being generative artificial intelligence and it use cases in everyday business activities. The digitalization of advertising methods and increasingly efficient advertising processes have forced advertisers to change the way they convey messages. Of the reasons is that the role of personalized digital content grows significance as the effective way to reach customers more and more. Advertising agencies that produce visual content for brands have been given the opportunity to utilize visual generative artificial intelligence in the production of advertising images. For example, new tools are able to create an image in seconds based on a single phrase, a prompt, and the image can be usable as advertising content as such. The development has indicated that the use of artificial intelligence is present in the modern advertising process. The accessibility of new applications puts managers working in advertising agencies and advertising content producers in a position where the use of generative artificial intelligence appears to be an attractive option. Previous research provides a starting point for the drivers and challenges of using generative AI, but a closer look at the use of visual generative AI in the use of advertising content is limited. Therefore, practitioners and academic research need more detailed research on how to approach, promote and evaluate the implementation of visual generative AI in advertising agency processes. This research compiles a theoretical framework based on previous research and it forms a counterpart to the data collected in empirical research about the experiences of practitioners. The empirical study is a qualitative study conducted with semi-structured interviews with advertising professionals. The research compares previous literature and empirical research and thus partly strengthens previous research, adds new dimensions and perspectives to it, and provides starting points for future research. The practical implications derived from the research findings will equip decision-makers in advertising agencies to approach visual generative AI and facilitate an optimal implementation process, taking into account the considerations presented in the study. Advertising agencies may be more immune to the general negative impacts associated with the implementation of AI, such as job losses, because these entities produce content that is considered demanding and include characteristics such as creativity and originality, in which humans are considered to exceed the capabilities of AI based on existing theory, which is also supported by the opinions of those practicing advertising. Overlooking the potential negative impacts may still lead to hasty decisions and careless implementation. The possibility of using artificial intelligence in the sequence of events between the design of advertising images and the final advertising image proves to be a way of operating that can affect the end result both positively and negatively. Therefore, there is a need to delve into the process in question in more detail, taking into account both previous theory and practical operations.

KEYWORDS: Artificial Intelligence (AI), Advertising process, Deep Learning (DL), Visual Generative AI

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TIIVISTELMÄ: Kehittyvä teknologia ja sen mahdollistama tekoälyn yleistyminen yritysten liiketoiminnoissa on saavuttanut viimevuosina yrityskentän eri toimijoita esimerkiksi generatiivisen tekoälyn muodossa. Mainonnan menetelmien digitalisaatio sekä entistä tehostetummat mainonta-prosessit ovat saaneet mainostajat muuttamaan tapaansa välittää viestejä personoidun digitaalisen sisällön roolin kasvaessa tehokkaana tapana tavoittaa asiakkaita. Brändeille visuaalista sisältöä tuottavat mainostoimistot ovat saaneet eteensä mahdollisuuden hyödyntää visuaalista generatiivista tekoälyä mainoskuvien tuotannossa. Uudet työkalut kykenevät esimerkiksi yhden ohjelauseen perusteella luomaan sekunneissa kuvan, joka voi sellaisenaan olla käyttökelvollinen mainossisällöksi. Kehitys on osoittanut, että tekoälyn käyttö on läsnä nyky-ajan mainontaprosessissa. Uusien sovelluksien saavutettavuus asettaa mainostoimistoissa työskentelevät johtajat sekä mainossisällön tuottajat asemaan, jossa generatiivisen tekoälyn käyttö esiintyy houkuttelevana vaihtoehtona. Aiempi tutkimus antaa lähtökohtia generatiivisen tekoälyn käytön ajureille ja haasteille mutta tarkempi tarkastelu visuaalisen generatiivisen tekoälyn käytöstä mainossisältöjen käytössä on vähäistä. Täten käytännön toimijat sekä akateeminen tutkimus tarvitsevat tarkempaa tutkimusta siitä, miten visuaalisen generatiivisen tekoälyn implementointia mainostoimiston prosesseihin voidaan lähestyä, edistää ja arvioida. Tämä tutkimus kokoaa aikaisempaan tutkimukseen pohjautuvan teoreettisen viite-kehyksen ja muodostaa siitä vastaparin empiirisessä tutkimuksessa kerättävään aineistoon käytännön toimista. Empiirinen tutkimus on luonnoltaan laadullinen tutkimus, jonka aineisto kerätään asiantuntijahaastatteluista. Tutkimus vertaa aikaisempaa kirjallisuutta ja empiiristä tutkimusta ja täten osiltaan vahvistaa aikaisempaa tutkimusta, lisää siihen uusia ulottuvuuksia ja näkökulmia, sekä antaa lähtökohtia tulevaisuuden tutkimukselle. Tutkimustuloksista johdettavat käytännölliset implikaatiot antavat mainostoimistoissa päätöksentekoa harjoittaville tahoille valmiudet lähestyä visuaalista generatiivista tekoälyä ja edesauttaa optimaalista implementointiprosessia ottaen huomioon tutkimuksessa esitetyt varteenotettavat seikat. Mainostoimistot saattavat olla immuunimpia tekoälyn implementoimiseen yhdistetyille yleisille kielteisille vaikutuksille, kuten työpaikkojen menetyksille, koska nämä yksiköt tuottavat sisältöjä, joiden katsotaan vaativan ja sisältävän ominaisuuksia, kuten luovuutta ja omaperäisyyttä, joissa ihmisten katsotaan ylittävän tekoälyn kyvykkyyden olemassa olevan teorian perusteella, jota myös mainontaa harjoittavien mielipiteet tukevat. Mahdollisten kielteisten vaikutusten ylitsekatsominen saattaa silti johtaa hätiköityihin päätöksiin ja huolimattomaan implementointiin. Vaikka tutkimuksessa keskitytään mainontaprosessissa tapahtuvaan yksittäiseen vaiheeseen, mainoskuvien tuottamiseen, on tutkimustulosten perusteella generatiivisen tekoälyn implementoinnilla havaittavia vaikutuksia mainostoimiston toimintaan koko-naisuutena. Mainoskuvien suunnittelun ja lopullisen mainoskuvan välisessä tapahtumasarjassa havaittu mahdollisuus käyttää tekoälyä osoittautuu toimintatavaksi, joka voi vaikuttaa lopputulokseen niin positiivisesti kuin negatiivisestikin. Täten kyseiseen prosessiin on tarvetta perehtyä yksityiskohtaisemmin huomioiden niin aikaisempi teoria, kuin käytännön toiminta.

AVAINSANAT: Tekoäly, Mainontaprosessi, Syväoppiminen, Visuaalinen generatiivinen tekoäly

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1 Introduction

1.1 Background

Scholars are seen to be at a consensus that the fourth industrial revolution, still occurring at the time of writing will introduce the real scale of novel technologies and solutions developed to enhance the efficiency of work (Lee & Cho, 2019). The domain of digital advertising has also been exposed to these technologies in a somewhat robust manner. In a way so robust that automation in the form of artificial intelligence is already dealing with some advertising tasks such as advertisement space acquisition (Chen et al., 2019).

The evolution of advertising has been critically influenced by the development of technology and advertisers have been given an opportunity to modify their practices and apply different digital tools to enhance the advertising processes (Huh & C. Malthouse, 2020). As advertisers are and have been consistently trying to ensure their competitive advantage, the challenge regarding advertising creation has also been addressed frequently. This has led advertisers to leverage artificial intelligence (AI) in the production of creative ideas and visual advertisements.

Kaplan and Haenlein (2020 p. 15) define AI as “a system’s ability to correctly interpret external data, to learn from such data, and to use those learnings to achieve specific goals and tasks through flexible adaptation.” The popularity and adaptation rate of AI tools in marketing practices is experiencing rapid growth (Kshetri, 2024). In 2021, the market value of AI technologies that were used globally in marketing practices was an estimate of $15.84 billion and by 2028, the market value is estimated to reach $107.5 billion (Kshetri, 2024). The forementioned growth represents a significant compound annual growth rate of approximately 31.4%.

It has been noted that marketing departments across various industries, particularly those operating in digital spaces, have not adopted these technologies solely on a

voluntary basis (Qin & Jiang, 2019). These processes, in which various tasks are executed to achieve more sales and revenue, have been under systematic change. Qin & Jiang (2019 p. 338) state, “The advertising process transforms relevant input into informational output that creates value for the advertiser”. The traditional definition of advertising process does not specify who or which type of entity, whether it be a human or a machine, should do the transformation.

In fact, these advertising agencies have been forced to adapt to the surging demand of advertising which is currently seen as a significant challenge to answer by traditional means (Qin & Jiang, 2019). In this change forced upon the advertising teams regarding their daily processes, the discussion about the possibilities and threats of artificial intelligence has been mundane. Goeldner stated in 1962 that “automation cannot and never will take the place of intelligence, good layout, well trained personnel, effective advertising, carefully planned promotions, sound policies and satisfying customers’ needs” (p. 56). This statement is seemingly under a threat in the domain of contemporary digital advertising.

Generative AI has proven to be the form of AI that has made an impact on an enterprise-wide scale and companies are experiencing and utilizing it in different ways (Kshetri, 2024). As the market value of the AI solutions in marketing is rising every year, more and more companies have been tempted to adopt these technologies. In 2023, over 70% of US organizations had experimented with generative AI or were using them for marketing purposes (Kshetri, 2024). As of today, the visual generative AI is capable of producing images and videos that can be used in visual advertisements, the ones that consumers stand face to face on a daily basis (Kshetri, 2024). These visual generative AI-tools are transforming prompts which can be seen as instructions, into a visual content (Yang, 2023).

Although Goeldner was skeptical about automation, even before the term artificial intelligence in its contemporary meaning was established, in the field of advertising, the competition is exposing these advertising agencies under pressure to enhance their processes, and the use of AI is heavily linked to ensuring competitiveness (Lee & Cho, 2019). Previous research has concluded that the use of AI could be beneficial and that the use of automation, in contemporary advertising, belongs to the advertising processes as it is made obtainable by various service providers (Qin & Jiang, 2019). In a research by Boston Consulting Group, conducted in 2023, content creation which includes the creation of visual material such as images, was identified as one of the three significant applications of generative AI (Kshetri et al., 2024). Due to the consensus about the feasibility of AI in the advertising process, and especially in content creation, scholars have begun to shift their interest towards the pursuit of higher efficiency and productivity with generative AI tools.

If the objective of the advertising agency is to boost sales and persuade more customers to be conscious of a brand, the more engaging advertising it can produce at a lower cost is desirable. Hence, the managers of the teams are at a crossroads when determining whether to hop on the train of AI and implement it to the content creation and design parts of the advertising process. Based on previous research, it has been stated that the similar visual output that required the effort of an advertising team for a weeks' time, might be generated by these AI tools in minutes (Yang, 2023). In a case where the forementioned accomplishment of the visual generative AI is accurate, it might be hard for a marketing professional to look in a different way. To be noted is that historically the actual ease of use that a technological solution brings when adopted, has been a major factor in the decision to implement new technologies (Davis ,1989).

Yet more and more advertising agencies and the teams within them are exploring possibilities to address the demand of more and more personalized advertising with the use of different kinds of visual generative AI (Zhang et al., 2024). To remember is that the requirements of different advertising tasks vary significantly, thus making it depend on

various factors, whether the task is suitable for AI implementation. These new technologies do present themselves as lucrative options especially regarding the efficiency of these processes as some of the AI tools are able to generate visual output with requiring a mere prompt as an input (Yang, 2023).

Thus, it can be suspected that the temptation to let artificial intelligence produce creative material is due to its ease and accessibility. Lucrative opportunities to save assets and time are presented to the advertisers as these automated solutions are becoming more popular in the field. However, this type of activity may entail the risk of losing a competitive advantage while trying to gain it. By sparking controversy about AI use in advertisements may distract the consumers away from the intended message of the advertisements that they are exposed to.

Hence, it can be stated that up to date research is necessary. Insights, examination, and discussion are needed about the key aspects that must be taken into account on behalf of the advertisers when the possible implementation of visual generative AI is considered. Based on previous literature, the visual generative AI has significant potential to enhance the advertising processes. Hence, it has significant potential managerial value as an asset to be used for more successful business.

1.2 Research gap

Recent research about the technological aspects of visual generative AI tools and the functioning of them can be seen to be abundant as these technologies are rising in popularity in a robust manner. There are notable studies in the field of advertising that discuss the potential of generative AI through the technological characteristics, as well as some practical functions. Kshetri et al., (2024) are identifying the applications, opportunities and challenges of generative AI in marketing and creating a basis for further research on visual generative AI in advertising.

These studies are often theoretical in the sense that the amount of managerial perspective and implications are scarce. This phenom is creating a research gap in illustrating how advertising professionals can identify and analyze the key opportunities and challenges of visual generative AI implementation to their advertising processes in the form of ad image creation. The academic literature calls for the integration of the technological and marketing concepts so that the academic research can be further developed and guided towards more advanced research on the role of artificial intelligence in advertising.

In addition, with the help of the managerial implications needed, advertising professionals can make better-informed decisions. As visual generative AI has been addressed and examined through the technological lens, this research aims to create an understanding about the applications, opportunities and challenges of visual generative AI use in advertising image creation. The theoretical framework that is constructed as an output of this study will serve as a resource for further academic research as well as practice.

1.3 Research questions and objectives

The design and creation phase of the advertising process has been identified to be a practice in which by using the novel technologies such as visual generative AI, the advertisers might gain competitive advantage by enhancing the practices. The central research objective in this study is to create an understanding about the facilitators and challenges in implementation and utilization of visual generative AI in advertising image creation.

Three research questions have been established to reach the objective of the study. The first research question will answer what the applications of visual generative AI use in advertising image creation are. The second research question will illustrate what are the aspects that need to be considered while implementing AI in advertising image creation. The third research question will answer how the different aspects should be observed and interpreted by an advertising agency manager to determine whether visual

generative AI could be beneficial for their respective practices and what should be considered when implementing such technologies.

By comparing existing theory and the results of a qualitative empirical study with advertising professionals, theoretical and managerial contributions will be presented which comprehends theory and practical views. Thus, the objectives will be met and the research questions answered. In addition, this study will provide an up-to-date overview of the capabilities of visual generative AI-tools and the state of the digital advertising image creation during the rapid development of AI-tools. The study will also discuss the contemporary visual generative AI tools.

1.4 Empirical study

Analysis about the implementation of visual generative AI and the applications, opportunities and challenges in advertising creation based on existing literature will be compared with practitioners' views with an empirical study. This study will be a qualitative study, in which the sample group will consist of advertising professionals, preferably managers that have experienced the use of visual generative AI in practice. This is due to the fact that this study will observe the possible implementation of visual generative AI and aims to create an understanding about the factors that need to be taken into consideration by the managers. The sample group will be in line with the managerial view that is determined to be the aspect of examination in this study.

The empirical study is desired to provide high-quality data that is up to date and derived from the practical level of advertising industry, from business operations and professionals who are in charge of these processes. Thus, the gathered data will function as a target of analysis as well as a notable source of information. The analyzed outcomes of the empirical study will contribute to the output of this study and serve as a reasoning for the answer to the central research questions. The empirical study serves as a significant contributor to the fulfillment of the objectives of this study. The methodology of the empirical study will be presented in the third chapter of this study.

1.5 Research structure

After the introduction, a literature review will be conducted in the second chapter. This chapter will introduce the contemporary theory and examine the previous research. Based on the existing literature, the role of artificial intelligence in effective advertising will be presented. The existing theoretical applications, opportunities and challenges of generative AI use will be discussed, and the contemporary technological status of the visual generative AI-tools will be presented.

The most used visual generative AI tools will be presented along with the capabilities of those. To finish the literature review, a proposed theoretical framework will be presented. This framework will serve as a basis for the empirical study and the qualitative study is desired to complement the framework. The proposed theoretical framework will conclude the existing theory on visual generative AI use in image creation. The theoretical part of this study will provide the necessary information for proceeding to the empirical study.

In the third chapter, the methodology of the empirical study will be presented. This chapter will introduce the general characteristics of the study and present the semi-structured interviews that are used in the study. The insights into the determination and selection of the sample group will be provided. The methods of data collection will be discussed as well as the measurement of the data will be addressed. To finish the third chapter and give a comprehensive information about the methodology, the data analysis techniques will be presented.

The fourth chapter will introduce the results of the empirical study and create a basis for the conclusions that will answer the core research questions of this study and fulfill the objectives. An analysis of the data collected will be provided by examining each of the determined factors presented in the theoretical framework. Insights on the findings will be presented along with the discussion about the correlation and blending of different key consideration.

Based on the fourth chapter, the fifth chapter will present the conclusions of this study. A summary of the key findings will be provided, and the core research questions will be answered. This chapter will introduce the contributions to the theory and practice. Final conclusive remarks will be given alongside recommendations for future research. The elements belonging to the objectives of this study, such as managerial implications, will be provided in this final chapter.

1.6 Key definitions

Machine learning (ML), being a subset of artificial intelligence (AI), enhances software performance by leveraging underlying data and potential user activity, thus enabling automation solutions that are powered by AI to effectively execute predetermined tasks and learn from them to get better (Kaplan & Haenlein, 2020). Birim et al. (2022) are stating that “ML, unlike other artificial intelligence applications, is a set of algorithms that imitates human intelligence without needing rules to be interpreted and entered manually”. It is proven to be able to solve problems and provide relevant output about clustering algorithms, regression algorithms and classification for example (Birim et al., 2022).

Artificial Neural Network (ANN) is a computer system that comprises of numerous units that are in connection with each other and react to continuous or sudden information as a whole in a dynamic manner thus mimicking the functioning and structure of human brain (Mu & Sun, 2022).

Deep Learning (DL) is a concept in which multiple layers of Artificial Neural Networks, machine learning algorithms, function on different levels of a dataset that is the target of analysis and simultaneously runs multiple processing layers on it to derive even the most complex representations (LeCun et al. 2015). Deep learning models are vital regarding visual generative AI, as those have a possibility to make image creation in

advertising context more precise and intelligent (Zhang et al., 2024). Thus, various different models will be addressed into detail further into this study.

Generative diffusion models. Díaz-Francés et al., (2024) are stating that “Generative diffusion models are deep learning models that use a probabilistic method to create new images by gradually transforming a simple image into a more complex one, incorporating randomness at each step to cover the full range of images in the training dataset, resulting in diverse and realistic image generation, enabling the automatic generation of massive image datasets.”

2 Literature review

The literature review will introduce the advertising image creation part of the advertising process, as well as provide an in-depth description about visual generative AI and present the key facilitators and challenges of visual generative AI use. The chapter will also introduce managerial implications on visual generative AI use based on theory in the form of theoretical framework.

2.1 Images As a Form of Advertising

As advertising has evolved, the need for personalized visual advertisements has gained significance and consumers are facing these visual elements especially in digital channels in a growing manner (Zhang et al., 2024). These personalized and targeted forms of advertisements include images as a central component. The field of advertising is full of images consisting of different elements, texts and shapes (Scott, 1994). Throughout the history of advertising, the importance of images has been acknowledged, and a similar outlook is experienced in the contemporary advertising environment.

The demand for advertising content is growing in such a robust manner that covering the demand with traditional advertising production methods is experienced to be extremely difficult (Qin & Jiang, 2019). This indicates that the need for advertising images is present in the contemporary advertising environment as it can bring unique elements to the process of communication between brands and consumers. Consumers are able to go beyond time and space as these advertising contents, including images can be seen anywhere and anytime (Lee & Cho, 2019). This attribute of contemporary advertising and the operation of consumers is ideal for images as those can be observed fast and in a continuous manner.

Consumers' cognitive activity is functioning to create an image produced by their imaginations that is provoked and stimulated at the time they face images as advertisements (Campbell et al., 2022). The more an advertising image stimulates these imaginations

and provokes the consumer's mind to construct an image about the ad in their head, the more effective the visual elements have been. These images are important in buying behavior as they can have an effect on consumers imagination when they are thinking about buying (Campbell et al., 2022).

Images are also optimal for advertising in the sense that they can include various elements that make them special and engaging for consumer. Scott (1994) is stating that "visual elements must be capable of representing concepts, abstractions, actions, metaphors, and modifiers, such that they can be usen in the *invention* of a complex argument". This highlights the unique ability of images to engage consumers. This gives the brands an opportunity to communicate through their specific ways and forms which can be easily identified and embraced.

2.2 Effective Advertising Image Creation

By leveraging insights obtained from consumer research, the preferences of consumers towards visual advertising are determined (Qin & Jiang, 2019). These serve as the fundamentals for advertising image creation. Through comprehensive semantic analysis and real-time consumer engagement data, these preferences are analyzed to forecast the likelihood of consumers' willingness to embrace a specific visual element in an advertisement in the near future (Qin & Jiang, 2019). Traditionally, this data is eventually gathered together and compressed into an image that will be used in advertisement by human or a machine. When the advertising images are designed and then created, strategic advertising planning will be carried out and exploited in the media planning and buying phase of the advertising process (Qin & Jiang, 2019).

This forementioned process calls for effectively created advertising images that need to be supplied to the vision of the consumers at a more rapid pace (Campbell et al., 2022). Consumers' exposure to advertising images is not dependent on space and time as they are constantly online and come in touch with interfaces that can present the images top them in the screens of their mobile phones for example (Lee & Cho, 2019). With

engaging visual advertising, a brand is able to communicate more about their ability to function in the future, rather that tell what has been possible before (West et al., 2008). This has already affected the practices of advertising agencies as the use of AI tools has become available for use in the advertising creation part of the advertising process.

Scholars are seen to be at a consensus that the fourth industrial revolution, still occurring at the time of writing will introduce the real scale of novel technologies and solutions developed to enhance the efficiency of work (Lee & Cho, 2019). During the recent years AI and its subsets in different applications have been the novel technologies that have transformed the work of advertisers. Especially Generative AI, that has made its impact on an enterprise level, has brought different aspects to advertising process as different tasks have been seen as possible to enhance (Kshetri et al., 2024).

The creation of advertisements is seen to be based on data, not relying on experience and personal intuition (Lee & Cho, 2019). This shift in the underlying requirements suits AI well, as it is able to process data much faster compared to humans. The advertising image production with visual generative AI can be dependent on the quality of the prompt and the training data that has been serving as an input for the tool (Yang, 2023).

Generative AI is seen as a major efficiency booster and its impact can be expected to grow substantially in the future (Kshetri et al., 2024). In a 2023 survey by the Conference Board, over 80% of respondents stated that with further implementation and development of Generative AI, the efficiency of marketing activities will improve (Kshetri et al., 2024). This marks a significant positive attitude towards these technologies. In turn, a mere 4% believed that the efficiency will suffer from Generative AI use (Kshetri et al., 2024). Although the negative being quite small, it cannot be overlooked.

The marketing signals, especially visual advertising, are entering the stage in the digital channels used today as these represent a highly competitive environment to advertise in (Dahlen et al., 2008). These channels are usually full of high-quality advertisements

from competitors operating their businesses inside the same domains and markets. If a brand spends a lot of assets to advertise on visible spots, the consumer might perceive that the brand is strong, confident and reliable as it has the assets to do so and is ready to invest in advertising (Dahlen et al., 2008). This increases the demand for brands to supply good quality visual content, images for example, and utilize Generative AI in the production of them to meet the demand.

It is also appropriate that humans are controlling the image creation and maintaining the message of the brand in it. Richards & Curran (2002) are stating that "Advertising is a paid, mediated form of communication from an identifiable source, designed to persuade the receiver to take some action, now or in the future." The images created by visual generative AI need to be identified and associated with the brand, nevertheless.

As the supply of different offering is high in a specific market, consumers have to rely on their perceptions of marketing signals and make their purchase decisions based on their impressions of different advertisements (Dahlen et al., 2008). This is a chance for advertising visuals in the form of images to make a difference in the decision-making process of the consumers with content that is engaging and invokes the emotions of the consumers. As the production rate of advertising images is high, visual generative AI can be a facilitator in efficiency enhancement to meet the demand. Thus, it is necessary to provide an in-depth introduction to visual generative AI with its technological aspects, as well as some contemporary tools on advertising context.

2.3 Visual generative AI

Advertising image creation with visual generative AI tools is dependent on advanced artificial intelligence technologies and consists of central concepts such as big data and deep learning. The contemporary advertising industry has several definitions for AI-generated advertisements, as it is dependent on somewhat interpretable factors regarding whether the AI-generated content is novel. In this study, the advertising images generated with visual generative AI are established as "synthetic ads". These images are

modifications of data, the input of the model generating them¸ thus being something that comprises of existing material (Campbell et al., 2022).

In practice, the visual generative AI-tool, is given a prompt by the advertiser which usually features requirements about the desired final image (Yang, 2023). This prompt is analyzed by the tool on several levels and based on the determined requirements of the advertiser, the tool turns on the data that is has access to. From this data, it gathers quality input that is seen to be relevant and comprises a coherent image that is aiming to meet the requirements of the advertiser as well as possible. Campbell et al. (2022) are accordingly stating that the end result "depicts a highly convincing yet artificial and fake version of reality". The forementioned process is a function that is experienced by the advertiser; hence it is necessary to examine the technological concepts and AI algorithms that operate behind all this activity.

In their respective study, Zhang et al. (2024) present five deep learning models as the central elements in contemporary operation of advanced visual generative AI tools. These models are not essentially used in all visual generative AI tools that are easily accessible, but rather in personalized digital advertising image creation, thus making them relevant when addressing the visual generative AI use. The elements are Recurrent Neural Networks (RNN), Long Short-Term Memory (LSTM), Convolutional Neural Networks (CNN), Generative Adversarial Networks (GAN), and Attention Mechanism (Zhang et al., 2024).

Recurrent Neural Networks (RNN) are in general seen as a suitable algorithm for sequential data analysis in which it has been proven to be a trusted option due to its high classification accuracy rate over time (Hasan et al., 2023). It can be stated that due to its characteristics, it is a relevant deep learning model to be used in analysis of timestamped activity data and the predictive analysis derived from it. The model analyzes the determined sample in steps in between which it takes the output of the latter as a input for the next (Zhang et al., 2024). Thus, the model serves as a relevant operator in the visual

content generation process in which it takes on historical behavioral patterns of large groups of consumers, such as browsing history and click activity in sequential order and constructs analysis about the behavior of consumers over time (Zhang et al., 2024). The forementioned factors serve well in personalized need and consumer interest prediction.

Long Short-Term Memory (LSTM) is like RNN in the sense that its aim and use is similar, yet few technological differences make it more sophisticated in a case where long sequential sets of data are analyzed (Zhang et al., 2024). LSTM models are far superior when the objective is to store and analyze data that lies among long sequences of previous timeline of data and map the input and output data accordingly (Birim et al., 2022). As mentioned before when addressing RNN, the model takes the output of the latter as the input for the next step. To ensure the quality of the sequential data, LSTM applies gated mechanisms such as input and output gates and forget gates, which complement the RNN model (Zhang et al., 2024). Naturally, this makes LSTM an optimal model for long-term personalized needs and consumer interests' analysis as it can predict future advertisement requirements.

Convolutional Neural Networks (CNN) are models that specialize in image feature prediction by analyzing images as inputs that can be previous advertisements for example, and complement it with for example, data about user clicks within the domain of those previous ads (Yu et al., 2022). Based on the features of the existing images that are provided for the model and the user behavior those features have provoked; the neural network is able to interpret optimal features for future images. In advertisement creation, and especially image creation, CNN is seen to be an efficient model to enhance the image attractiveness and the visual features that can boost engagement (Zhang et al., 2024). CNN is an element that supports the categorization of AI-generated ads as synthetic ads as it can be clearly interpreted from the technological functions of CNN, that it is optimally mixing and reconstructing existing features that are statistically optimal to enhance the performance of the advertisement.

Generative Adversarial Networks (GAN) operate as models with generator and discriminator within them, that function together to apply adversarial learning to provide relevant output, which in advertising context is material such as images (Zhang et al., 2024). In the contemporary state of GAN development, the models are seen to be specifically optimal for image analysis and reconstruction (Madarasingha et al., 2022). The generator element in GAN is constantly providing the discriminator with samples that aim to be realistic for analysis whether the sample is real or generated (Zhang et al., 2024). It can be interpreted that the model is constantly training itself by challenging its operation within the neural network to create more compelling and realistic images. For advertising, this is beneficial as GANs can produce highly personalized images that possibly enhance engagement and can have an effect on consumer behavior in a positive way.

Attention Mechanism operates as a model in the analysis of sequential data similarly to RNN and LSTM but technological specifications allow the model to concentrate more specifically on desired, important and relevant points in the sequential data by determining different weights for the inputs (Zhang et al., 2024). In other words, by being able to concentrate more precisely, the Attention Mechanism can be targeted to provide output about a desired point in the sequential data such as user behavior in a certain time. It does not have to take into account the whole sequence as RNN does for a short sequence and LSTM for a longer one. This attribute makes it a relevant model for gathering relevant data to enhance advertisement personalization (Zhang et al., 2024).

As consumers provide advertisers with increasingly significant and interpretable digital footprints, the algorithms used in visual content production have also evolved to meet the demand for relevant, personalized, and high-quality advertising to capture the attention of new and existing customers (Zhang et al., 2024). The forementioned deep learning models are up to date advanced and used in practice within some of the different visual generative AI tools that advertisers are implementing in their advertising processes to enhance the production and personalization of image ads. The more accessible

and popular tools that advertisers may utilize are based on slightly different technological structures, that are called diffusion models.

For advertising image creation, especially in text to image function, models that apply generative diffusion models are seen to excel as a lucrative alternative for a traditional GAN-based tools. Díaz-Francés et al., (2024) are stating that “Generative diffusion models are deep learning models that use a probabilistic method to create new images by gradually transforming a simple image into a more complex one, incorporating randomness at each step to cover the full range of images in the training dataset, resulting in diverse and realistic image generation, enabling the automatic generation of massive image datasets.”

These tools include OpenAI’s DALLE-2, Midjourney, Adobe Firefly and open source based Stable Diffusion. It has been stated that the integration of diffusion models to other deep learning models, such as GANs can improve their performance (Díaz-Francés et al., 2024). The forementioned tools are some of the most accessible to advertisers who are creating images, and they have gained popularity among advertisers for a variety of reasons. It should be noted that there have also been challenges in implementing these tools. Next, key facilitators and challenges of generative AI use will be presented.

2.4 Theoretical facilitators and challenges of generative AI use

As Davis (1989) acknowledged, technology adaptation is significantly in correlation with its ease of use and the phenom still stands today. Most of the contemporary generative AI-tools are indeed easy to embrace. These tools are also lucrative in the sense that they do not necessarily require any specific skills to be used in advertising context (Kshetri et al., 2024). In the case of advertising image creation, tools like Midjourney, DALLE-2 and Stable Diffusion have proven to be able to produce good quality visual content and even complex images that fit into advertising use (Kshetri et al., 2024). These tools are accessible in browser for example, thus making them available for everyone at any time in any given place as long as they are online. To be noted, it is also that these generative tools

tend to have pleasing user interface which makes them easily approachable and easy to navigate in (Kshetri et al., 2024).

One of the most important facilitators of generative AI use is the ease to try them, the trialability (Kshetri et al., 2024). This refers to the low barrier on behalf of the advertisers to test these tools in practice and evaluate the performance and suitability of technology into their processes. To be remembered is that these tools are not entirely free but offer trials and periods of use for free to limited time (Kshetri et al., 2024). As the first contact surface with the generative AI tools does not require any investment on behalf of the advertiser, it makes it more easy to try and begin to embrace them. Among the visual generative AI tools, Midjourney is apparently offering a free trial and Stable Diffusion operates as an open-source software and is free to use (Kshetri et al., 2024).

In addition, as some of the generative AI tools are free to use, those that are accessible by payment tend to be priced modestly and the cost does not make them prohibitive for most of the time (Kshetri et al., 2024). The visual generative AI tools are experienced to be priced fairly and seem feasible for advertising image creation. As of 2024, OpenAI's DALLE-tool made it possible to generate one image with the cost of $0.035 (Kshetri et al., 2024). The tools pricing structure consists of 115 prompts for $15, from which each prompt generates four variations to choose from, equaling approximately $0.13 for one prompt (Kshetri et al., 2024).

Some generative AI tools, such as Stable Diffusion, that generate visual content are also providing subscription-based services for more advantageous use, although operating for free and as an open source (Kshetri et al., 2024). The subscription model consists of basic plan for $9 monthly, or standard plan for $49 and even premium plan for respective $149 per month (Kshetri et al., 2024). Regarding advertising image creation, the price does not seem to be an objecting factor for the use, thus making it a lucrative option compared to the costs of an image created via means of human labor. Factor that needs

to be taken into account as well is that these tools flexibly offer different levels of operational capability for different needs.

The forementioned flexibility introduces another facilitator for generative AI use in advertising. In the generative AI market, the advertiser is in a favorable position where the different tools are easy to try and get access to, easy to use and evaluate and at best free or affordable to use (Kshetri et al., 2024). The supply of different solutions is abundant, and the advertiser can try and find one that suits their respective needs and fits their purposes and practices most optimally (Kshetri et al., 2024). The domain of generative AI tools is also beginning to be competitive, which has the possibility to enhance innovation and keep the pricing modest, which is a favorable thing for advertisers who are aiming to enhance their productivity and advertising image creation.

A key facilitator for visual generative AI use in image creation is the fact that the tools that have been discussed in this chapter can be modified and fine-tuned for the specific needs and standards of different companies (Kshetri et al., 2024). For advertising agencies, this means that advertising content for specific types of companies or specicific individual companies can be generated according to the company's services, products, marketing policies and be based on advertising images that have been proven out to be effective in the past (Kshetri et al., 2024). These visual generative AI models can be trained to serve different purposes and different companies (Kshetri et al., 2024). Thus, the advertising process for image creation does not have to start from zero as it can have predeterminations and base for optimal functioning to create new images.

Challenges and barriers for generative AI use present themselves in few different forms. These are concentrated around costs for more advanced services, trust regarding company and customer data, and the effect on jobs (Kshetri et al., 2024). To be noted is that advertising agencies might be small in terms of size and do not always have opportunities to access the best versions of the discussed visual generative AI tools. The free versions and modestly priced paid ones might not always meet the standards set for the

advertising images in the agencies. Also, to get access to the latest features might require significant payments as in the example of OpenAI's ChatGPT as the free version can access data only before 2021 (Kshetri et al., 2024).

As mentioned in the facilitators, the visual generative AI tools can be trained with company or customer data as a facilitator for more accurate advertising image production, but it also presents a challenge concerning the privacy of the data (Kshetri et al., 2024). This comes in the form of sensitive customer data input in the form of prompts for the tool which are stored and used to train the model for further use or in the form of information about company standards that are used as determined presets in the tool (Kshetri et al., 2024).

To be noted is that some of the generative AI tools offer data protection for the prompts but these might be accessible by significant financial investment only (Kshetri et al., 2024). Confidential client data has been provided for tools such as ChatGPT in various confirmed instances (Kshetri et al., 2024). Consumers are also aware about their privacy and do not usually tolerate any kind of credential mistreatment when it comes to the sensitive consumer data that they have given consent to for specific companies (Kshetri et al., 2024).

Transforming the functions of a specific advertising task, such as advertising image creation, can also create additional costs although based on the presented facilitators it might seem like a seamless shift (Kshetri et al., 2024). These additional costs come in various forms and are necessary to be evaluated carefully. To be remembered is that this part of advertising process has required and is still requiring extensive skills of a human and the involvement of humans (Chen et al., 2019). The visual generative AI tools that produce the advertising material are still operated by humans and the instructions for the tool to produce are human made into some extent (Yang, 2023). For example, forming and determining an effective prompt might be a bigger burden than planned (Kshetri et al., 2024).

A notable challenge concerning Generative AI use and especially the attitudes towards the adoption of the technology, is the concern about its effects on the jobs of the advertisers (Kshetri et al., 2024). This understandable, yet inevitable factor comes into play in advertising agencies that are specialized in content creation and may face challenges on the financial side. An opportunity to save assets in human-intensive practice creates possibilities for major changes in the financial expenses of the agencies. In general, Generative AI use is seen to reduce marketing jobs significantly more than create them (Kshetri et al., 2024). This could be applied to visual generative AI use in content-oriented advertising agencies.

2.5 Theoretical framework

The previous academic research lacks a theoretical framework for generative AI use in advertising image creation that can be exploited by managers to determine whether it is suitable for their respective use cases to adopt the technology. To conclude the theoretical background, a theoretical framework for evaluating the use of visual generative AI in advertising image creation will be presented. The empirical part of the study that will follow is aimed to complement the theoretical framework with insights from the industry professionals and therefore an updated final version of the framework will be presented in the fifth chapter of this study as the major output.

The Theoretical Framework for Evaluating the Use of Visual Generative AI in Advertising Image Creation (Table 1.) is based on recent academic research on generative AI and the insights are derived from sources that address the visual aspect of it. The framework consists of eight factors that are addressing the theoretical facilitators and challenges that have been presented in the theoretical background. The framework addresses key considerations, evaluation and managerial implications regarding each of these determined factors. The theoretical framework is significantly based on the 2024 study by Kshetri et al., (2024) on applications, opportunities, challenges and research agenda of generative artificial intelligence in marketing.

Table 1. Theoretical Framework for Evaluating the Use of Visual Generative AI in Advertising Image Creation

Factor	Key Considerations	Evaluation	Managerial Implications	References
Trialability	-How low is the barrier to test the tools and evaluate the performance and suitability	Run trials & gather insights	Asses the suitability of different tools	Kshetri et al., 2024
Cost	- Initial investment - Maintenance costs - Cost savings	-Upfront costs vs. long-term savings -Cost of image compared to human-made	Conduct a cost-benefit analysis to determine financial feasibility, optimal tools & operational capability	Kshetri et al., 2024
Efficiency	- Speed of image creation - Resource optimization	-Time & investment taken for one output -Reduction in manual effort	Evaluate how AI effects workflows and improves overall operational efficiency.	Kshetri et al., 2024, Lee & Cho, 2019
Adaptability	-Modification of the tool -Fine-tuning	-Ability to train the tool with brand data	Evaluate if images can be generated based on brand services, products, marketing standards, old ads	Kshetri et al., 2024
Quality	-Output quality compared to human work -Consistency in results	-Client satisfaction -Agency standards	Evaluate how AI-generated images compare to human made ones	Kshetri et al., 2024, Yang, 2023
Ethical & Legal	- Privacy of customer and consumer data	-Prompt data protection -Privacy policy of the tool	Assess the tool privacy, clients' views and the need for prompt protection	Kshetri et al., 2024

Operational Shift	-Attitudes towards AI adoption -Change in work culture -Fear of job loss	-Opinions of humans -Willingness to change	Assess the costs/effects of operational change and the attitudes of the human workers	Chen et al., 2019, Kshetri et al., 2024
Human-AI Collaboration	- Division of tasks between humans and AI - Training of staff	-Level of human interference -Human creativity and AI efficiency (prompt generation)	Define roles for humans and AI to optimize the implementation, adoption & operation	Chen et al., 2019, Kshetri et al., 2024, Yang, 2023

3 Methodology

According to Saunders et al., (2012), research methodology encompasses the theoretical framework and principles that guide the appropriate way to execute research. This chapter introduces the methodological choices that have been seen as appropriate for this study. In addition, the data collection process in the form of semi-structured interviews and an overview of data analysis is conducted. The chapter will present the interview sample, as well as the selection.

3.1 Qualitative research method

The research methodology provides a structured approach to study execution, to established patterns or principles within a specific field to achieve the most valid and reliable conclusions (Malhotra, 2008). This empirical research is conducted to develop knowledge and practical understanding about a subset (visual GAI), of a relevant phenomenon (GAI) in contemporary digital advertising and the research objective favors the methodological method of the study. The goal of this research Is to construct a theoretical framework for advertising managers to serve as a resource for visual generative AI implementation in advertising image creation.

A proposed theoretical framework has been constructed based on the existing literature on the subject and was presented as a closing for the theoretical background of this study. The empirical research is desired to complement the proposed framework and provide insights that will serve as assets to create the final framework based on existing theory and practitioners' views and experiences. Thus, a qualitative research method in the form of practitioner interviews has been chosen to serve as the empirical part of the study.

According to Bryman and Bell (2007), qualitative research involves the collection and analysis of non-numerical or unquantified data, with the goal of understanding the lived experiences of individuals in the practical world and the meanings they associate with

these experiences from their own viewpoints. Similarly, as Saunders et al. (2012) described the characteristics of qualitative data gathering, the qualitative data for this study will be gathered by developing and utilizing a conceptual framework based on previous literature.

3.2 Data collection

The sample group is limited to practitioners in Finnish advertising agencies that operate in the field of digital advertising and are constantly producing advertising content in the form of images. The reason for this is that digital advertising is the fastest growing way to advertise, and it includes mobile marketing, which has been proven to be the fastest growing form of the forementioned digital advertising (Smith, 2017). In these channels, consumers are frequently exposed to advertising images. To ensure a transparent process of relevant data collection, the practical experiences are highlighted when selecting the interview sample group.

3.2.1 Interview Sample Selection

The interviews are conducted with practitioners who work in advertising agencies and their experiences include visual generative implementation in a successful or failed manner. The key characteristic is that all of the interviewees have experience in visual generative AI experimentation. An important factor regarding the sample group selection is that the person has been taking part in the decision-making process. These sample selection criteria are ensuring the extraction of relevant data from the perspectives of practitioners that are seen to engage in evaluation and implementation processes that involve the contents of the theoretical framework.

The potential advertising agencies and practitioners were contacted first by phone, LinkedIn and email. The initial email outlined the research invitation, highlighting the key themes of the study as well as providing information about the specific practices that are desired to be discussed in the interviews. This allowed potential interviewees to

understand the expectations based on their experience in the field of visual advertising. Among the sample selection, a couple of practitioners were contacted through suggestions of industry professionals and the academic institution network. The following Table 2. is presenting the interview sample with information about their roles in the advertising agencies, the experience of the practitioner, the interview length and the coding for each practitioner with which the direct quotes in the empirical study results chapter will be in accordance.

Table 2. Profile of Interview Participants

Participant	Title	Experience	Interview Length
P1	Creative	3 years	42 min
P2	Creative Director	12 years	49 min
P3	CEO	7 years	45 min
P4	Creative Director	10 years	50 min
P5	Content Producer	5 years	40 min
P6	Content Producer	7 years	40 min
P7	Creative Director	10 years	46 min

3.2.2 Semi-structured interviews

To ensure the interviewees are able to provide as much information as possible the interviews in this study are semi-structured. In this type of interview, the researcher prepares a list of topics to discuss, but the specific questions and their sequence may differ depending on the interviewee, and additional questions may arise during the conversation (Saunders et al., 2012). This enables the sequences of the interview to drift outside of the pre-planned topic and possibly provide valuable insights outside of the theoretical framework, thus contributing to the aim of the empirical study. This can be defined as qualitative interviewing, which in turn is “an interview, whose purpose is to gather descriptions of the life-world of the interviewee with respect to interpretation of the meaning of the described phenomena” (Kvale, 2008).

The semi structured interviews were conducted in a way that the contents of the theoretical framework were discussed in the order they were presented in the framework, nevertheless the interview was enabled to drift from different factors to others to ensure more detailed data. The interviewees were asked to reflect on the importance of each factor in the evaluation framework and point out the pros and cons of each factor. This method allows the comparison of existing literature and empirical research results, thus resulting in an updated view on the implementation of visual generative AI to the advertising image creation phase of the advertising process.

3.3 Data analysis

In data analysis, the primary data derived from the qualitative interviews is analyzed to compare it to the previous knowledge that the existing literature provides. The primary data will be examined to create an understanding about the phenomena that is subject to this study, visual generative AI use. Qualitative data analysis is a cyclical process in which by the means of the hermeneutic circle, data is continuously re-evaluated as new relationships or questions emerge. According to various academics, such as Saunders et al., (2012) and Belk et al., (2013), the data analysis is optimally started immediately after collecting the data.

3.4 Reliability and validity of the study

The credibility of a qualitative study is assessed by evaluating its reliability and validity (Malhotra, 2007). Reliability is taking into consideration the clarity and rationality behind the research methodology, ensuring it is transparent, justified and reasonable (Rose & Johnson, 2020). Validity, on the other hand, refers to the precision, relevance and credibility of the results in relation to the study's theoretical framework and research questions (Rose & Johnson, 2020).

Therefore, the findings of the study are limited by the specific data collection method employed, and the depth of the research is limited by the researcher's knowledge and comprehension in analyzing the research topic (Braun & Clarke, 2006). In addition, several factors considering the semi-structured interviews are affecting the reliability and validity of the empirical study. These include the interview length, the ability of the practitioner to talk about their practical functions and the practitioners' previous experiences with AI.

4 Empirical study results

The research findings are presented in this chapter based on qualitative data analysis conducted. Each factor presented in the theoretical framework is supported by direct quotes form the qualitative interviews and a thorough description to illustrate the advanced understanding gained from the data. The results offer a set of comprehensive practitioners' views about the use of visual generative AI in advertising image creation, thus providing fundamentals for the comparison of theory and practitioners views in the fifth chapter.

4.1 Key Considerations of using Visual Generative AI in ad image creation

The results are structured in a way in which insights into the main themes of the theoretical framework, which are the factors, will be provided. The main themes are supported by the sub themes which are key considerations, evaluation and managerial implications. These forementioned main and sub themes comprise the Theoretical Framework for Evaluating the Use of Visual Generative AI in Advertising Image Creation. To provide as thorough understanding as possible, direct quotes form the interviewees will be presented as well as analyzed. The factors will be presented with the results in the same order as they are presented in the theoretical framework.

4.1.1 Trialability

During the recent years, the advertising agencies have been actively experimenting with generative AI tools as these technologies have been in a lucrative reach for trial. It seems that the barrier regarding assets such as time and cost has been low to get familiar with some of the contemporary visual generative AI tools. To be mentioned is that the atmosphere in several agencies has been positive towards experimenting with new technologies

> *P1: "The fees for generative AI tools are often quite small and you can buy a license for a trial. It is feasible because if the application turns out to be useful for your*

own work, the cost is small at the end of the day. You can always cancel your subscription."
P1: "As an agency, we have been open about everything related to artificial intelligence and if you notice something that is useful for your own work, you are encouraged to try it."

The tools have also been presented to the advertising agencies actively not only through novel sowftwares, but also existing ones. The Phenom that presented itself during the interviews was the emergence of visual generative AI tools on platforms and tools that the agencies had been using before, which has made the experimenting a logical thing to do for example in the case of Adobe users.

P1: "Whenever there are any updates to Adobe, they always come to us and to the production desk. Production has stayed very up to date with the updates because it has been made easy to try out these AI features and the advertising agency has a desire to stay up to date with AI."
P1: "Since the product family and brand have been familiar, implementing AI features has been easy and the threshold for trying them out has been low."
P6: "Surely you could evaluate trialability of different tools but when a generative AI was implemented on Adobe, we didn't have to evaluate anything else, so it can also be irrelevant in some cases."

This is not only applicable to the tools of Adobe as the phenom has actively occurred among other platforms and service providers. These include the most popular ones that are seen to be trusted by professionals also outside the domain of marketing. The trialability of a visual generative AI tool is seen as a highly important thing as some of the agencies are actively assessing the suitability of the tools before implementation. Not only by trying to figure out the functioning of the tool but also pilot it to the workflows of the agency in practice. Even if some tool might perform well, it doesn't automatically mean that it is suitable considering the operation functions of the agency. Thus, it is reasonable to experiment before implementation.

P1: "Open AI's DALL-E has also been trialed with, as the advertising agency has an enterprise license for Open AI's tools. Generative AI applications, especially those developed on top of old, familiar platforms, have been available for trial at a low threshold."

> *P4: "Trialability is critical for us and not just from the aspect of costs but also in a sense that we want to assess how well do these tools fit into our processes before we make any decisions."*
> *P5: "For a smaller sized time I think that it is highly important to be able to try the tools first and not always purchase the licenses as we want to be sure that we don't waste money."*

Running trials and gathering insights about different tools to assess their suitability to the respective processes of specific advertising agencies has been somewhat of an actively occurring phenomenon. To be noted is that it is also seen as a thing that should not be executed on a too big a scale as it takes time away from the work itself. Due to the distractive characteristics, it can steer the focus away from other projects and affect overall operational efficiency.

> *P2: "The act of constantly drifting towards new tools can be distracting regarding the actual process of advertising image creation and the habit of continuously changing the tool used in image creation can cause some trouble."*
> *P2: "You can be conscious about the easily approachable tools, but the optimal way is to find a suitable one for your needs and stick with it, otherwise the people of the agency might not keep up."*
> *P2: "We are aiming to run trials and gather insights on several tools, as well assess the potential of those to be implemented in our workflows, and I would say that the trialability of visual generative AI tools is important, but it can be deceiving as well."*

Although the trialability is seen as an important feature of visual generative AI tools, it presents itself in most cases in a situation where the feature, or a separate tool is established on a platform that the agency is already using. This indicated that the agencies are not always proactively seeking new tools and experimenting with them but rather being provided with new opportunities. Also, the trust towards familiar brands such as Adobe is strong, which makes the shift away from it seemingly hard, but it also enhances the will to try the visual generative AI tools provided by it.

4.1.2 Cost

Generally, the cost of the visual generative AI tools is not seen as a hindrance for adoption. The initial investment is usually low on an enterprise level and especially concerning larger advertising agencies that might have more assets to spend on production. Still, the expenses can ramp up if the agency gets involved with several visual generative AI tools simultaneously. Similarly to the Trialability, several agencies have been experiencing the emergence of visual generative AI tools on platform that they are already using, which naturally lowers the cost of obtaining them and sometimes these tools are embedded under the enterprise license of a specific service provider.

> *P1: "The agency has an enterprise subscription for several product families such as Adobe Creative Cloud, Canva and Open AI (Chat-GPT & DALL-E) in which the visual generative AI is embedded in. With the same cost, the agency is able to get multiple tools which make it lucrative."*
> *P2: "The enterprise licenses on different service offerings include the visual generative AI tools which for us, has made the approach towards these tools more easy. There are still beliefs in my opinion that the cost benefits would be bigger than they actually are, and I think that we should be conscious about how much we spend on visual generative AI in a month."*
> *P4: "Cost evaluation is inevitable and not just for the initial price, but for the long-term effects on possible cost-savings."*

For an advertising agency, the costs of visual generative AI might exist already in subscriptions for service providers that have established visual tools within their platforms. According to the practitioners, this seems to divide the general opinions about the importance of the cost factor as those costs can already exist. Then, the visual generative AI is an addition to the toolbox. The importance of the cost factor seems to be highly subjective, and it holds multiple aspects to it which depend on the existing content production tools used by the agency, as well as the agency size. When it comes to more compact agencies that might have to be more vary about their expenses, the costs can matter more.

> *P3: "As we are a small agency with under five practitioners, we want our expenses as optimal as possible and a cost-benefit analysis about a new visual generative AI*

tool is absolute. We have a strong consensus that everything that creates excessive costs must have an upside of a significant amount. "
P5: "Yes the cost is a central factor when assessing the tool and yes, we are a small agency and for us, it is a no go to have some license subscriptions running on a monthly basis if they are not used for maximum value."
P7: "The enterprise licenses are especially useful when we have multiple people working in production and if a visual generative AI is embedded on those tools, its just a bonus for us."

The cost is a central factor in evaluation of any kind of business processes and the advertising image creation is not an exception. The general cost of visual generative AI tools can be low, but over time it will create expenses for the agencies, thus making it a relevant thing to consider when evaluating the potential use of visual generative AI, for larger and smaller agencies. The results also indicate that the possibility of using visual generative AI within the existing agency tools should be considered as it can be attained at a lower cost.

4.1.3 Efficiency

The efficiency is seen as a key component in the decision making of visual generative AI implementation among the practitioners as it is often desired with AI technologies. There emerged several different views on measuring it and deriving output for practical decisions as well as some interesting insights on the importance of paying attention to the overall operational efficiency. To be remembered is that most of the agencies are working on tight scheduled projects, and any time taken away from those is taking away from the efficiency.

P3: "The resource optimization is for sure one of the things I would say that the smaller agency, like us, is very interested in when evaluating the use of visual generative AI as we want the human hands there, where they are needed the most."
P6: "Efficiency is important when addressing the functioning of a single process, ad image creation for example, and it can be tracked to some extent, but it has to be done carefully by keeping the overall efficiency in mind."

Several agencies were experienced in executing a tracking process on how long a specific advertising task takes time, which also applies to image creation. In turn, the time and

investment per one output, one image, seemed to be a thing that was not tracked in too much detail due to the perceived difficulty in measuring it. The results also shed light on the difficulty of measuring the actual amount of enhancements created by AI.

> *P1: "The time spent by production employees in the production of advertising images can be measured on a project-specific basis using hourly data."*
> *P2: "Any sort of a raw indication about the effort used for one image that is applicable for client use would be a great way to evaluate the efficiency of visual generative AI tools but in reality I can imagine it being a difficult thing to measure and determine."*
> *P6: "I wish there would be a tool that would consider everything and then tell me how much faster we did this and that with AI, what about all the time we used to implement it, should it be counted too when calculating assets used for one image. Time is our most valuable asset I recall."*

The reduction in manual effort was a common thing among the practitioners and it also was perceived to overlap some other factors in the theoretical framework such as Adaptability and Operational Shift. It seems that the focus can drift from the actual efficiency of the tool to the overall agency efficiency. In a hypothetical case, humans have more time for other tasks, and this can create a situation in which it is not evaluated how fast the tool can produce an image, but rather how it frees a human to do something else.

> *P2: "The speed of image creation and resource optimization are in my opinion well illustrated in the editing and fine-tuning part of the advertising image creation as we could think that if the visual generative AI does the editing and fine tuning based on our instructions, we can direct the human resources more towards the creative work, such as planning and design."*
> *P3: "The resource optimization is for sure one of the things I would say that the smaller agency, like us, is very interested in when evaluating the use of visual generative AI as we want the human hands there, where they are needed the most."*

The efficiency is a factor that is on the surface when addressing the practitioners' views on visual generative AI use, as it is a commonly desired feature in business operations. Sometimes it can be a difficult thing to measure, but project-based measurements seem to be the most common indicator for advertising agencies to pay attention to when addressing the enhanced efficiency after a visual generative AI implementation. One thing

that is to be kept in mind according to the practitioners is the operational efficiency of different sized advertising agencies and the fact that the implementation process takes efficiency away from the overall perspective.

> *P2: "In the long run these might actually make the operational efficiency to be the same even without any visual generative AI."*
> *P3: "Status quo regarding technology implementations is one of the most efficient ways to operate in my opinion because the operational models become familiar for everyone. When you have a distraction, in a case of implementing a new technology, it always takes time to get back on that status quo."*
> *P7: "Luckily the generative AI was launched on Adobe, the platform we use, and it ensured that we were able to experiment with it in different projects and it did not negatively affect our efficiency too much."*

As the efficiency factor is being addressed, the blending of different factors can be seen to take place as the efficiency factor starts to overlap Adaptability and Operational Shift for example. This happens in a case where better efficiency is obtained with a tool that can be modified to take care of a specific part of image editing thus freeing the producer to focus on a different part even more. This also considers the Human-AI Collaboration factor and its optimization. These findings and the factor overlapping call for a possible granulation of findings in a specific group that combines Efficiency, Adaptability, Operational Shift and Human-AI collaboration. This group could be called *process modification*.

4.1.4 Adaptability

The adaptability of the visual generative AI tools is seen to have its strengths in the organizing of different projects and their ability to make continuous customer relationships more fluent. The adaptability of some tools can also overlap the efficiency factor in the sense that it might reduce manual effort as the tools can be trained with customer data and the projects can be kept in the tool for continuous customers. Also, the ethical & legal factor with its key considerations is seen to affect the results regarding adaptability as the input data could possibly be sensitive.

P1: "This feature is useful because an advertising agency works on many different projects at the same time, but it is not necessarily a dealbreaker between tools that have it and ones that do not."
P2: "I would say that it is functional for a visual generative AI tool to have a "memory" about past projects for a specific customer for example, just as humans do who work with same customers on different projects as you don't have to start from a blank."
P4: "We have trained a tool with our customers product catalog and brand-specific color themes and saved, I would say at least 30% of time regarding the process of always having to input them again."
P5: "It is fantastic when an AI tool goes with our desired sort of "niche" aesthetics without having to prompt everything to the detail and spending huge amounts of time, so I think that the adaptability is great as long as you keep in mind the safety stuff."

The adaptability of visual generative AI tools is considered to be a good feature, but not necessarily the most important one. There is still some discussion about the danger of sensitive data about customers to be serving as an input for the tool. In addition, the adaptability of different tools in the same project has been brought up and it presents itself interestingly between the Adaptability and the Human-AI collaboration factors. This factor overlapping takes place when a human seeks specific attributes in different tools to create an optimal combination for the best end result.

P3: "For a dynamic agency, it's not just about the tools adaptability to our projects and the fact that it can be modified and fine-tuned, but also about the advertiser's adaptability to use different tools and get the best out of them, I would say even more so."
P1: "A human expert has the opportunity to form their own operating methods by extracting features from different generative AI applications that are suitable for a specific process stage and thus "multi-honing" tools to optimize the efficiency of their own work process."

The blending of adaptability and human-ai collaboration factors is creating an opportunity for a result based granulated group which considers the *human adaptability* as it can be observed to be an important attribute to gain more value from the AI tools. It highlights the ability of the practitioners to adapt by themselves by extracting desired features from different tools. It also highlights the importance of human knowledge about the state of different tools and their optimal use cases.

P5: "If you are trying to get the perfect output with a single visual generative AI tool, you might actually waste more time than you are trying to save."
P7: "The human should be the "chameleon" that possibly navigates through different tools and finds the best features in them."

4.1.5 Quality

Regarding quality, the agency standards are constantly brough up and it seems that possible visual generative AI produced images are discussed between the agencies and the customers in most cases when the advertising planning is conducted. The level of output quality in images produced by visual generative AI or its ability to maintain the image quality when editing the image for example, is a central factor to be taken into consideration.

P2: "Of course quality matters, quality is everything the agency has to offer, and we live by our references. No new technology implementation can happen on the cost of quality if we can observe with our own eyes that the tool does not reach to our agency standards."
P4: "Yes quality matters, of course it does, but also no, its not about the quality of human generated images vs. AI-generated, it's about what these two can do together."

The client satisfaction is on the desk when discussing the operational methods with the customers of the agencies, and the brands that the advertising images are produced to. The brands are also seen to be quite conscious about the possibilities of AI use and its potential benefits, but the agencies have faced the opinions of their customers differently.

P1: "Customers have not yet rejected AI, and the potential use of AI is always communicated to the customer. For example, intentions to include an image created entirely with AI in the final material can be communicated to the customer and discussed. Regarding quality, the customers are aware of agency standards."
P2: "The directions of customers regarding visual generative AI use are dependent on the nature of the images that they want us to produce for them. Of course, if they want a picture of a physical place to be present in the image, we will probably

not rely on generative AI, we will rather take the picture ourselves on site and sometimes the client might request that."

Interestingly, an aspect concerning the conflict of conception was brought up by one of the practitioners when discussing the Quality factor and the comparison of AI-generated and human-made ones. It was stated on behalf of a practitioner that the creation of advertising images has also an artistic aspect to it. This aspect of an advertising agency can be seen to raise the barrier of visual generative AI use and make the comparison of AI-generated, and human made images very meticulous.

P3: "We have gathered creative talents to our agency and our aim is to include an artistic aspect to our final products which have to the best of the quality we can produce. Also, as we are a small agency and the competition for projects is abundant, we can not have any flaws in our images quality wise we present to the customers."

More specifically, the situation might be that the agency has the best human resources that they can imagine in a specific field of image creation and design, which raises the standards extremely high. The quality factor is subjective regarding the nature of different agencies and especially their visions about creativity and the unique artistic characteristics of the agency.

P3: "In our agency, everyone of us can be viewed as some sort of artists, we comprise of people who have strengths in different kind of advertising images, one can be good in abstract ones, one in more typographical ones and one in images that include specific products. In every one of these, the quality of the end product is one of the most important things."
P6: "I think that it can be really valuable if you can communicate that this image was made by a creative human and that way make an impact if more and more ads are generic."
P7: "The creative aspect of advertising images is and will be significant and we have people working for us who are great in coming up with different ideas."

4.1.6 Ethical & Legal

The agencies are aware of the ethical and legal responsibilities that underly in the use of visual generative AI and it is indicated on behalf of the practitioners that these matters

are highly evaluated when implementing the tools especially in the case of tuning them with customer data. Although some tools could be modified with brand sensitive data and previous ads for example, the agencies are seen to be in a consensus that brand sensitive data is preferred to be not serving as an input for the tools. In turn, the agencies are experienced to use general knowledge about the brand or information that is public when tuning and modifying the tools. The key considerations of the Adaptability factor are also discussed when addressing the Ethical & Legal factor.

> *P1: "We are careful about entering customer data into the AI tool, and all information entered is considered and often public information. For example, the paid version of Open AI has data protection and customer data is protected. However, sensitive information about customers is not entered into AI applications as a matter of principle."*
> *P2: "The privacy level of the tool is for sure one of the principal things to be considered when implementing visual generative AI."*
> *P6: "There should not be a scenario where sensitive data is even possible to be obtained by someone that is not us or our customer. Our flawless ethical & legal record is a lifeline and needs to be protected."*

The regulations and legislation regarding AI use in business were also brought up when addressing the ethical and legal considerations of visual generative AI use and future shift in AI compliance was mentioned. The ethical & legal factor in the theoretical framework is undisputedly seen as a high priority as it has a major downside risk once things get compromised. No agency is seen to have an attitude that the aspects would not be too important.

> *P2: "The development in the AI scene is so rapid and the regulations and legislations that come with it are bringing more aspects to consider when thinking about privacy. For example, the EU AI Act. That was established will probably determine some measures regarding compliance when it comes to using AI tools in business operations."*
> *P3: "If we would use company sensitive data, the probability of tracking every prompt and input for the tool would probably rise and this would give us a lot more things to do. For example, if our customer would require proof of every piece of data and how it is used with the tool to ensure their privacy."*

The Ethical & Legal factor is undeniably important according to the practitioners, but it shapes itself distinctly differently than in the theoretical framework. The starting point for the agencies seems to be an alignment in which no sensitive data is serving as an input for the visual generative AI tools. Also, the majority of the tools used are from highly appreciated service providers who are known to pay a great deal to privacy. This has given the agencies an opportunity at which the ethical & legal considerations have not required too much attention.

4.1.7 Operational Shift

The operational shift is usually the mainstream topic of talk when it comes to AI implementation in the working place, but it seems that the advertising agencies are very conscious about the current state of the technologies and are considering the operational shift when it comes to the evaluation of generative AI use in advertising image creation. Still the opinions of human workers and their willingness to change the operational practices is a thing to be monitored and taken into consideration. Again, the overlapping of different factors can be seen to take place in the results as the Efficiency, Adaptability and Human-AI Collaboration are discussed along Operational Shift. Some of the insights can be included in the granulated "*process modification*" group.

> *P1: "Initially, humans make the material, but artificial intelligence is what will speed up and make the work more efficient."*
> *P2: "Willingness to change is a sensitive topic sometimes, why to change something that is working already and if our agency is successful with our own methods, it can be hard to get people going with something that might cause a change."*
> *P5: "The operational shift is a tricky one because what if the implementation of the tool does not result in what we want, we have changed our processes and wasted time that could have been used efficiently in the past, it really is a thing that needs to be evaluated beforehand to every detail."*

Regarding operational shift, the change in work culture is also seen as a thing to consider as the practitioners' views about its importance go well hand in hand with the more common conception about AI doing the work and humans getting more used to not

doing so much. Also, instant measures are seen to be important in a case in which a tool is freeing human labor to be used in something else.

> *P2: "I believe that an atmosphere where we are constantly coming up with ideas and encouraging each other to bring up their thoughts and though processes is the one that feeds innovation in a creative sense and makes advertising images unique."*
> *P3: "None of us really feels like fearing for our jobs, the creative mind of a human is just too complex to be mimicked, but the overall change in work culture if we notice that we are starting to slide towards laziness because AI is doing most of the work could be something to think about."*
> *P6: "If your task gets done quicker, the rest of the time reserved will be used by advancing to the next task. It's a misconception in my opinion that we would do nothing if AI did some of our tasks."*

The operational shift in the advertising agency is a factor to consider, but it does not raise concerns as much as some others when thinking about evaluating it and whether it has an effect on the decision process of implementing visual generative AI in advertising image creation. It might be that the most creative advertising agencies that rely on manual work are somewhat immune to this kind of change in overall operations, thus the results are slightly varying from the perspectives of existing literature regarding generative AI.

4.1.8 Human-AI Collaboration

As a central output of the empirical material, the collaboration between Human and AI in advertising image creation was addressed by multiple practitioners. The importance of figuring out the right ways to get familiar with the AI tools and divide tasks between AI and humans is important. Keeping the staff of the agency updated and providing training in new software is crucial. Regarding the factor of Human-AI Collaboration in visual generative AI implementation, it is highly important to determine how many resources these things require and how much time it takes off from the ongoing advertising processes when training the staff for example.

> *P1: "It's more about helping you come up with ideas and editing details, it doesn't do your job."*

P2: "Human interference in these tools should be still kept on a quite high of a level."
P3: "The possible division of tasks between human and AI might require a lot more experiencing that people generally think."

Regarding human-AI collaboration, the false dichotomy between human and machine should be avoided to gain more advantage about both. It is seen to be highly important that the agency has a positive view on AI and communicates it to the employees and states that the fundamental reason is not to replace the workforce but rather make everyone's work more efficient. When the actual use is happening among the production and decision making among the managers, the dynamics of the agency are measured by how well these two levels communicate with each other.

P4: "I think that the Human-AI collaboration is not just important but it's the whole point of view from which the implementation should be evaluated."
P6: "At the end of the day its me who makes the images, with or without AI. Of course, I hope that the management asks my opinion also."
P7: "The managements role is to convince everyone that eventually this will lead to better productivity thus generating more revenue for the agency which means more salary for everyone."

The training of staff is also seen to be crucial to be evaluated before starting to implement visual generative AI as it is a time sensitive practice. The agencies are engaging in continuous projects and the time to be found for thorough training in between the projects might be a challenging thing to organize. It is to be noted that the time taken away from the projects is affecting the overall efficiency of the agency. Here some factor overlapping is seen to occur and the granulated "*process modification*" group could be applied. In addition, if the agency's standards and ways of everyday functions are accepting it, the talk and learning about AI tools can take place during more informal events and there might not be a need for actual trainings.

P1: "A joint workshop on every new software. These have been occurring regularly during the past year."
P2: "Gathering the agency together and giving information about new possible technologies or organizing a training for everyone takes a huge chunk away from our productivity."

P5: "We are constantly talking about the AI tools that we have come up with during our breaks as we grab a coffee together and those have become our "training of staff" moment."

5 Conclusions

This research is aiming to create deeper understanding about the implementation and use of visual generative AI in the advertising image creation phase of the advertising process and how the possible use of the AI-tools is impacting the practices of advertising agencies. The research investigates how the managers of advertising agencies can evaluate the tasks of the practitioners who produce images for advertising use and the feasibility of visual generative AI use in these respective production methods.

This chapter discusses the key findings from the empirical study and the way these aspects compare to the existing literature of which the theoretical framework presented at the end of the second chapter consists of. The chapter will answer the third research question and thus fulfill the research objective.

5.1 Interpretation of findings

The first key finding from the empirical study is the fact that many of the practical implementations of visual generative AI tools have been experienced to occur on top of existing platforms that have been used in the advertising agencies. This key finding is highly regarding the factors of the theoretical framework such as trialability, cost, adaptability, ethical & legal and operational shift. It highlights the importance of these factors in the process of evaluating the implementation, as these factors can be assumed to matter more when the implementation is planned to be executed with a tool offered by an existing service provider.

The fact that the advertising agencies have been using platforms such as Adobe and the enterprise offering of OpenAI (including Chat-GPT and DALL-E) for example, illustrates a different premise compared to the existing literature in the sense that the offering of visual generative AI is brough to the advertising agency. This is significant in the sense that the agency does not have to proactively approach different tools as these are offered to them form a trusted and used party.

The first key finding can be seen to confirm existing theory about the importance of these factors in the evaluation process considering the implementation of visual generative AI. In addition, as result of the empirical study, it can be seen to add a new dimension to the existing literature. This dimension is considering the different approach on tool offered by trusted service providers and platforms that the advertisers are familiar with.

The second key finding of the empirical study is the significance of Human-AI collaboration in advertising image creation and the fact that the possibility of trusting the advertising image creation solely to AI-tool, seemed to be a distant choice of practice on behalf of the practitioners. Although the tools can be seen to be advanced and effective in certain phases of image creation, such as planning, fine tuning and editing, the level of human interference is desired to be high.

This finding presents itself as a piece of information that can be seen to add to the existing theory. When comparing the existing literature on visual generative AI and the empirical study findings, it can be suspected that the existing literature is providing an interpretive false dichotomy between AI and human created ads and not highlighting the possibilities for enhanced human-AI collaboration on an appropriate scale.

The third key finding is the formation of a granulated group (*Process Modification*) of findings that are blending among several factors of the theoretical framework. The findings are applicable among the Efficiency, Adaptability, Operational Shift and Human-AI collaboration. The actual formation of the granulated group stems from the empirical evidence on the importance of human presence in the advertising process, more specifically in advertising image creation. For example, the multi-honing of different tools to gain advantage considers operational shift and addresses the need to adapt on behalf of the practitioner, thus touching upon the Human-AI collaboration as well as efficiency as an end result.

The existing theory concentrates on discussing how the AI tools can adapt, enhance and change processes and the evaluation should happen by evaluating the technology. In turn, the empirical results can be interpreted to highlight the importance of evaluating how advertising agency workers can adapt and change their processes to enhance the overall functioning of the agency. This calls for a more people-oriented evaluation approach.

Lastly, creative and sometimes artistic aspects of the advertising image creation are viewed to create the need for the capabilities of humans as professionals in the competitive landscape of advertising. This creates more ease for the managers to approach these tools. It is illustrated in the sense that the advertising agencies can seek to enhance their processes and be open about trying new tools without the fear of losing their own. It was experienced in the empirical study that the agencies were quite open-minded about the new possibilities without hesitation about the drastic operational shift in their agency processes.

This finding can also be seen to add a new aspect to the existing theory as the advertising agencies might be more immune to the general negative effects associated with AI implementation, such as job losses, as these entities engage in practices that are seen to require attributes, such as creativity, in which humans are seen to exceed AI by existing theory and strongly supported by the opinions of advertising professionals.

5.2 Implications for advertising professionals

The results of this study provide several managerial implications. This study focuses on the managerial view on key challenges and optimal practices in visual generative AI implementation in advertising image creation. These implications are based on comparison of the thorough examination of the existing theory which is compressed in the theoretical framework and the findings of the empirical study, from which the views of practitioners of advertising agencies were derived.

Firstly, this study provides an up-to-date review on the state of different visual generative AI technologies and illustrates the applications of those in advertising image creation. Thus, creating a starting point for managers to approach visual generative AI tools when considering the implementation of one. The results of the study realize the potential of artificial intelligence and the opportunities it brings to make advertising image creation more efficient, thus strengthening the feasibility of artificial intelligence as an addition to the agency tools.

Secondly, the results of this study are encouraging to experiment with the visual generative AI tools as a process enhancing feature and move the focus away from the selection between AI and human generated images. The results of this study direct the attention away from the possible false dichotomy between humans and AI thus creating a more neutral point for managerial decisions where the strengths of both AI and humans are taken into consideration. The findings also highlight the importance of a people-oriented evaluation approach.

Thirdly, this study highlights the importance of exploring the opportunities provided by the existing software providers of the agencies. The visual generative AI tools offered by those are seen to be more easily implemented and multiple factors of the theoretical framework are highlighted when evaluating the implementation as well as the actual utilization of the tool. The addition of visual generative AI provided by an existing software provider is seen to be beneficial regarding the challenges in implementation and offer more benefits with less investment.

As the fourth and final managerial implication the study results imply that although the adaptability of different tools to the practices of specific advertising agencies is a thing to be considered, the managers with their agencies should remain ready to adapt as well. The communication between different levels of the agency is highly crucial when evaluating implementation. The study results suggest that the optimal way in some cases

might be to multi-hone the visual generative AI tools in a way that the specific strengths of certain tools are extracted in a different phase of image creation thus creating a possibility to gain the most significant advantage in using these technologies.

5.3 Limitations of the study

The results of the study are advised to be approached by considering the respective limitations of the study. The credibility of a qualitative study is assessed by evaluating its reliability and validity (Malhotra, 2007). Reliability is taking into consideration the clarity and rationality behind the research methodology, ensuring it is transparent, justified and reasonable (Rose & Johnson, 2020). Validity, on the other hand, refers to the precision, relevance and credibility of the results in relation to the study's theoretical framework and research questions (Rose & Johnson, 2020).

Therefore, the findings of the study are limited by the specific data collection method employed, and the depth of the research is limited by the researcher’s knowledge and comprehension in analyzing the research topic (Braun & Clarke, 2006). This study presented the research objectives and the research questions that were established to fulfill the objectives in an appropriate and clear way as well as explained the methods for gathering the empirical research data. The research data was gathered, processed and presented in a way that ensured the confidentiality of personal and company data and the names and companies of the practitioners that were interviewed was not disclosed in this study. This chosen practice created a limitation for the transparency of this study.

Also, as the nature of the qualitative study is subjective, thus context-specific, the ability to generalize the results is limited. The participants in the interviews were practitioners from different sized advertising agencies that all had hands-on experience in visual generative AI implementation and use in advertising image creation. The sample size of the semi structured interviews (seven interviews) is also a limiting factor considering the limited time to gain insights during the interviews.

5.4 Directions for future research

Visual generative AI use in advertising image creation and its applications, facilitators and challenges present a fascinating opportunity for future research as the landscape of AI-tools and the development of those is so robust that the general status might change in a short period of time. The development offers a wide scope to expand the academic research ideas around advertising processes and generative AI. This study serves as one of the early academic research projects on generative AI that focuses on specific phase of the advertising process, being advertising image creation, regarding the use of a specific set of AI tools, being visual generative AI.

The results of this study highlight the need for further research on optimal human-ai collaboration and practices to optimally organize advertising processes to enhance efficiency by utilizing both humans and AI. As concluded by the previous research, AI has a place in the contemporary advertising process and this research supports it. This is opening up more and more opportunities for academics to determine where and how the different AI tools could be used. It is highly important to examine how practitioners can avoid the phenom of losing competitive advantage while trying to gain it.

Regarding visual generative AI, the perceptions of consumers will be central as the tools get used more and advertisements in visual form are experienced to be produced by AI more often. Research is needed on what the possible effects of visual generative AI use on the perceived originality or brand message of an advertisement are. It is also relevant how the engagement of human vs. AI generated advertisements differs as it is possible that the perceived use of visual generative AI in an advertisement might steer the attention away form the actual meaning of the advertisements and direct it towards AI use.

One can say that today humans and machines share tasks in advertising agencies to produce a more sustainable future supported by more efficient ways of working. However, humans themselves will have to appreciate the weight of their abilities alongside machines, share tasks and sometimes give them up for the common good. The opinion of

those who seem to be best informed is that AI, with its applications in the contemporary advertising process, is here to stay. For others, the bitter recollections have time to be changed into sweet memories.

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