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Integration of artificial intelligence in advertising

Abstract. Introduction. In this day and age, market of goods and services is over saturated by various products as a result, product competition is grooving so fast. For this reason, companies and firms are faced with problem of selling their goods. Advertising deal with such problem and help not only popularize product, but influenced on consumer demand as well.

Purpose. The main idea of this article is to analyze the influence that artificial intelligence (AI) is becoming one of the main competitors in the market of advertising, moreover the development of AI started new era of market development.

Results. The conclusion of the research emphasizes the idea that artificial intelligence (AI) represents a complex dynamic in the field of advertising. One of the main drawbacks associated with the use of AI relates to the way in which individuals use it. Scientists have raised concerns about its implementation in society, particularly the potential for manipulation. Throughout history, humanity has consistently sought ways to streamline its daily existence. One notable limitation, however, remains AI's inability to accurately replicate human emotions and behavior. This deficiency is a key hindrance to AI's dominance over the human intellect.

Conclusion. There is currently a discernible trend in which individuals are prioritizing convenience and leisure over the pursuit of innovative endeavors. Rather than engaging in the creation of novel projects, there is a growing tendency to delegate tasks to AI systems that expedite the completion of projects within shorter time frames.

Keywords: Advertising, consumer demand, customers, marketing, demand elasticity, artificial intelligent (AI).

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Застосування штучного інтелекту у рекламі

Наразі ринок товарів та послуг переповнений різноманітним торгових марок, компаній, що призводить до зростання конкуренції. Однією з ключових проблем є постійна зміна попиту споживачів, задоволення якого потребує постійних зусиль задля збереження конкурентоспроможності продукції. Подальший розвиток інформаційних технологій, поширення медіа простору, посилюють значення рекламної діяльності у формуванні попиту споживачів. Німецький філософ та публіцист Вільгельм Швებель зазначав, що «зробити з повсякденного щось особливе здатні лише любов і реклама», саме дана цитата найяскравіше характеризує одну з сутностей реклами. Однією з ключових цілей залучення та збільшення фінансування на рекламну діяльність є управління ціновою еластичністю попиту. G

Початок технологічної революції став рушійною силою для розвитку та еволюції реклами. Під впливом розвитку новітніх технологій реклама діяльність зазнає колосальних змін. Через неймовірно стрімкий розвиток штучного інтелекту, котрий здатен генерувати рекламу у будь-якій формі, за короткий період ніж маркетингові відділи з рекламної діяльності, постають нові виклики у вигляді непередбачуваного конкурента, чи навпаки винайдено новий спосіб спрощення та покращення продуктивності рекламної компанії.

Ключові слова: реклама, споживчий попит, медійний ефект реклами, маркетинг, штучний інтелект.

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Formulation of the problem. Advertising is one of the most important ways to popularize goods or services that is why companies have marketing department in. The

main purpose of marketing is to plan, produce and promote a company's products or services in a market. During marketing evolution, the behavior of costumers

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have received huge impact, especially they have been influenced by such parameters as psychological, emotional, suggestion, believe, etc. The main purpose of advertising is to motivate consumers to buy any kind of product by touching hard consumers. That is why advertising on television, social media, promotional video usually consist of emotional message, which helps client to associate with buying emotional instead of thing.

The main reason of trying to attract a buyer is power that they could produce and influence on demand elasticity. Demand elasticity is one of the most important options for product popularization. The ways of influence consist of three main effects: informative, complementary or competitive. Each of these effects can be not only positive, but also negative. The reasons for this are instability of interest of buyers with needs. While analyzing this effect companies try to find a balance between them for much greater profits with benefits.

Advertising has gone through a lot during its evolution. For example, everything started from the first advertisement in newspaper, which was made by Theophrastus Renaud, but today humanity prefer to use promotion in social media. Artificial intelligence is becoming one of the facts that are moving humanity forward. The popularity of AI during the last years has increased by 37.3%, as a result more people get opportunity to use AI in daily life. In this case, the problem of competition between human and artificial intelligence began to be formulated. This problem we can see in advertising as participation optimization process with inclusion of AI in programs for creating advisement such as AdCreative.ai, Writesonic, Bertha.ai, etc.

Analysis of recent research and publications. To analyze the most recent research it is necessary to mention the work in HAL open science, which has been done by a group of scientists such as, Arnaud de Bruyn, Vijay Viswanathan, Yean Shan Beh, Jürgen Kai-Uwe Brock, Florian von W[7]. They mentioned and analyzed in their research the advantages and problems of AI in creating different types of products.

Apart from that, research of consumer demand is one of the most important impact on creating of advertisement because presentation with appearance depend on interest, desires and preferences of other customers. Y.B. Chavan and Trupti Vijay Deo have solved this problem [1]. They mention five main factors influencing consumers during promotion advertisement which control demand. Those factors are: consumer base, economic condition, price, income, expectation with tastes and preferences.

Artificial intelligence is one of the most popular topic of discussion today. Moreover, there exists an idea that AI is a real threat to humanity. Main reason is that, AI can make analysis of any information much quicker compared to human. This raises the question "Is artificial intelligence really good for humanity, or will it lead to a dystopian scenario where humanity is absolutely obliterated?" Aaron M. Garvey, TaeWoo Kim, and Adam Duhachek have examined the problem of such threat in their article "Bad News? Send an AI. Good news? Send a Human"[8]. Analysis of the use of AI in marketing, commerce, business, advertising, etc., created a problem of abuse of use AI in work. In this case, employees stop analyzing the case as a result of losing all knowledge skills.

Formulation of research goals. The main purpose of the article is to find out how the artificial intelligence will influence the advertising. Whether AI will be a competitor or an opportunity for advertisement development.

Outline of the main research material. Advertising is omnipresent all over the world. In this day and age, it is impossible to imagine a single day without seeing an offer to buy something. We see it in our smartphones, on billboards, social media, TV, etc. It is part of ordinary life for mankind. Marketing has achieved such results by analyzing and managing consumer demand to control sales volume. However, advertising has not always been as indispensable as it is now. Advertising has gone through a long process of evolution.

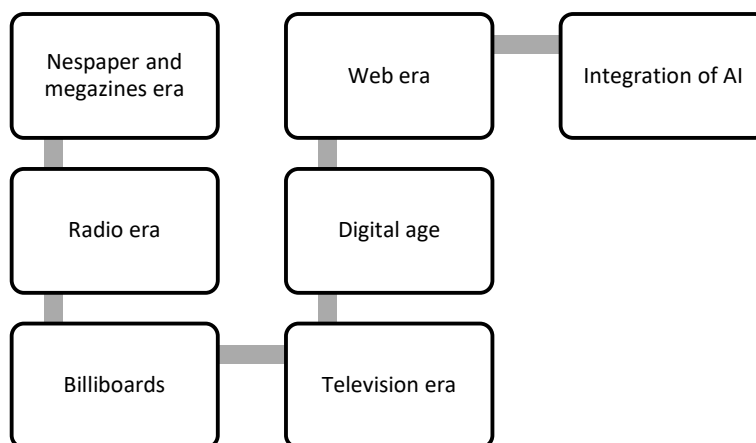


Figure 1 – Evolution of advertising

Source: compiled by the author

To begin with, the history of development should mention the most important invention of all time such as the printing press in 1439. Subsequently, advertising inventions began to develop at full speed. After that began the era of newspapers and magazines. From 1600s to 1870s, more and more people started to read and find out information in printed media. Typically there were advertisements of various books as well as a wide range of quackery. Later on, businesses started to use posters for promoting new products. During industrial revolution, population of advertising started to increase, as a result investigation grow up.

The second stage began in 1922 when radio was used for advertising. In that era, promotion of any products was accompanied by the phrase that radio presenters were grateful to their sponsors for making this program possible. Compared with today, the process seems to be much more simple, as on the announcements could be heard everywhere and would explicitly state the price of advertised products.

The invention of television changed everything. Now people could see the products and be more engaged in advertising. In 1970 new style of business such as telemarketing appeared. At that time scientists started to analyze influence of advertising on demand for costumes. Customers were encouraged to buy products, which changed their buying attitude, led to rational consumption, etc. [1].

Digital age have changed not only advertising but the whole world. Its main feature was synergy of psychology and advertising. Characteristic technological aspect of this period was the use of computers not only for distribution of advertisements, but also for their creation. Appearance and aesthetics improved significantly, which allowed to influence consumer demand. This was the period when the first hand-held mobile phone was developed, which has become one of the most effective devices for searching and publishing advertisements in the next century.

The 21st century is characterized as the Web era. With the advent of social media in 2003 and its rapid growth in popularity, social media, such as, LinkedIn, Myspace, Twitter and Facebook, started using their platform and audience to advertise products. The next step in the evolution of advertising was the use of online videos. Thus, the recent rise in the number of advertisements can be attributed to the fact that people can create their own videos and share them everywhere [10].

Finally, the last stage we are entering is the integration of artificial intelligence. Today, AI has transformed advertisements and emails by using big data analysis, machine learning, creation, improvement and other processes. The main advantage of artificial intelligence is the simplification and reduction of working time. However, is everything really as perfect with the integration of AI?

First of all, the definition of AI should be specified. Due to the fact that the concept of artificial intelligence is

constantly changing and developing, there are many ways to define it. However, one of the generally accepted definitions for artificial intelligent (AI) is the intelligence demonstrated by machines. Apart from this, there is another interpretation that artificial intelligence was intended to make computers do things that could be done by humans, thus manifesting their intelligence [7].

While describing process of integration of AI in advertising it is necessary to mention the artificial neural network. Such type of AI is used in marketing to solve complex forecasting tasks that were considered unsolvable less than a decade ago. It is also used for predictive analytics in marketing, allowing marketers to predict future marketing actions and its impacting behavior, find out insights for improving leads and attracting new customers.

Today there are a few ways of using AI in advertising. They are divided into two types, the first one is connected with appearance of advertisement, the second one with software. First type is involved in proses of generating images and videos. For the last two years it has significantly improved. The advantage is that now you do not have to spend much time for creating the advertisement, hence reducing the expenses. The second type involves platforms that use AI to manage such activities as buying, selling and placing ads in real time. The main purpose is to understand the target audience, as it is the key aspect to controlling the elasticity of demand [6].

At the end of 2023 in Singapore, during the 15th Singapore International Energy Week, the Minister of Finance announced the purpose and plan of the country for the next year. He mentioned that the main purpose will be to triple the number of artificial intelligence experts, including machine learning scientists and engineers, as part of its national AI strategy. Also, as part of his AI strategy, he promised to increase government incentives for the sector, including by supporting accelerator programs for AI startups and encouraging companies to build AI.

It becomes obvious that even state governments started to integrate AI in their work, yet the future prospects are still ambiguous. On the one hand, artificial intelligence allows to do everything faster with improving aperies of final products, but on the other hand, development increase rapidly, that in the future mankind brings to problem of labor replacement on AI. Today the problem is already observed with creating advertising as employees have become lazier with the development of AI. Now they can prompt artificial neural network to create video or image, or find out information and write article. Such a simplified process leads us to the conclusion that now there is no need for employees, since AI can do their work [8].

Aaron M. Garvey, TaeWoo Kim and Adam Duhachek made a research with five different types of experiment for comparing analysis of AI and humans in different situation. After finishing their experiment, they made a

conclusion that there are still differences between their analyses. The main difference is that AI still does not have feelings and emotions; therefore it makes conclusions based solely on data analysis and nothing else. Humans, in comparison, give the result only after processing the given information through their feelings with emotion and comprehending it.

The growing popularity of AI is the reason behind analyzing the impact on customers in a marketing survey. The survey included nine questions that show the main issues of integrating artificial intelligence into people's

lives. Besides, respondents were from different age groups, ranging from twelve to seventy years old. One of the most important questions were about the impact of AI, popularity and the main reasons for using it. About 75% used artificial intelligence in their life and 15.4% even use it every day, however there are still 25% who have never used it at all. The rest of respondents use AI several times a week. Interestingly enough, they were confronted with AI in media platforms while looking for information about goods and services.

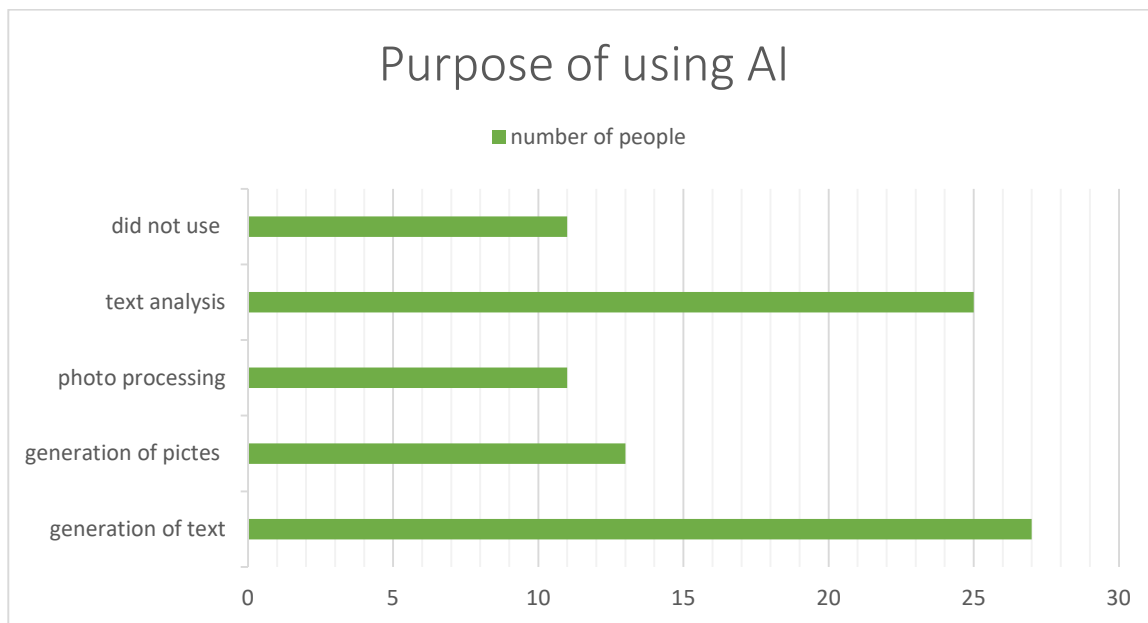


Table 1 – Purpose of using artificial intelligent by people

Source: compiled by the author

The second part of analysis was to find out the purposes of using AI. Table 1 shows that the majority of respondents use AI for generating and analyzing texts. Moreover, one of the questions in the survey was about influence of AI on analytical skills and 14,8% of people responded that after working with AI they faced the problem of data analysis. It is evident that the problem is growing slowly, as more and more people feel the influence of artificial intelligence in their work and daily life. Moreover, most of the respondents were not concerned about it, only 39.8% of people agreed with the idea that AI is a serious competition for humanity. Such frivolous attitude will have negative impact in the future,

since the only thing which AI lacks is empathy and emotions.

Conclusions. Nowadays, AI brings a new era of advertising development, changing the very concept of advertising creation. The main advantage of integrating AI in advertising is to simplify the process of creation. However, at present there is still a difference between AI and human work.

Currently, there is a discernible trend where individuals prioritize convenience and leisure over the pursuit of innovative ventures. Instead of engaging in the creation of novel projects, there is a growing tendency to delegate tasks to AI systems that expedite the completion of projects within shorter time frames.

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