

# Pregled uloge generativne veštačke inteligencije u savremenom digitalnom marketingu

## Review of The Role of Generative Artificial Intelligence in Contemporary Digital Marketing

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**Sažetak**— U sprovedenom istraživanju smo proučavali stavove srpskih frilensera prema različitim programima za generisanje sadržaja zasnovanim na veštačkoj inteligenciji. Uspeli smo da saznamo kakav sadržaj najčešće stvaraju, zašto koriste ovu novu tehnologiju i koje softvere preferiraju. Takođe smo ispitivali stavove ispitanika o etičnosti generativnih aplikacija. Naši rezultati pokazuju da frilenseri visoko vrednuju svoju ličnu etičnost, sa prosečnom ocenom od 4.46 (na skali od 1 do 5), ali da svoje postupke u vezi sa korišćenjem veštačke inteligencije ocenjuju znatno nižom prosečnom ocenom od 2.15 (ponovo posmatrano na skali od 1 do 5). Ova razlika otvara prostor za dalja istraživanja, dok naši nalazi doprinose unapređenju akademskog znanja u oblastima digitalnog marketinga i veštačke inteligencije.

**Ključne riječi** –veštačka inteligencija; generativne aplikacije; digitalni marketing; novi marketinški trendovi; frilenseri

**Abstract** – In our research, we investigated how Serbian freelancers feel about different generative programs based on artificial intelligence. We managed to discover what kind of content they create the most, why they use this new technology, and which software they prefer. We also investigated respondents' attitudes toward the ethics of generative applications. Our results show that freelancers rate their personal ethics highly, with an average rating of 4.46 (on a scale of 1 to 5), but their actions related to the use of artificial intelligence with a much lower average rating of 2.15 (again, on a scale of 1 to 5). This difference opens up room for further research opportunities, while our findings help advance academic knowledge in the fields of digital marketing and artificial intelligence.

**Keywords** – artificial intelligence; generative applications; digital marketing; new marketing trends; freelancers

### I. INTRODUCTION

The emergence and widespread acceptance of high-speed Internet has resulted in both personal and business communications moving into the online space, thus creating many new commercial opportunities and one significant challenge, namely dealing with the limited attention span of online surfers in a content-saturated environment. As of last few years, many companies and individual freelancers have turned

to artificial intelligence with the aim of facilitating their operations and getting the attention of their intended audience.

The sudden rise of artificial intelligence's popularity is best observed by looking at the Google Trends time chart, which shows that interest in this type of technology has skyrocketed worldwide over the past year.

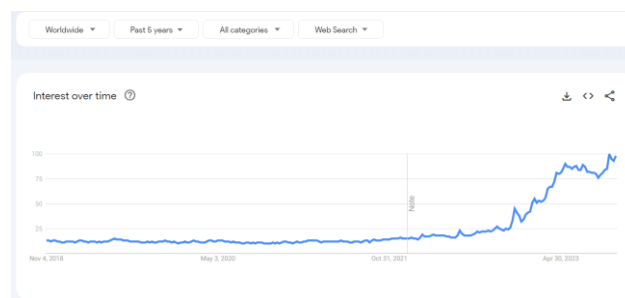


Figure 1. Google Trends chart displaying 5-year AI interest

Although business-related artificial intelligence is a relatively new phenomenon, academic literature already contains numerous definitions of this innovation. Wingström, Hautala and Lundman stated that artificial intelligence is a computational system that showcases seemingly intelligent behaviors similar to human capabilities of reasoning, problemsolving and learning. [1] As per Finnish researchers Rusthollkarhu, Toukola, Aarikka-Stenroos and Mahlamäki, artificial intelligence refers to computer programs that are able to interact with their environment, recognize data patterns, and use this information to rethink and adapt their actions or surroundings in a goal-driven manner. [2] The definition offered by Arsenijević and Jović underlines the critical role of artificial intelligence in designing personalized customer experiences, effectively addressing their concerns, and improving organizational responsiveness. [3]

Common to the previously referred and many other available definitions is emphasizing that the operation of artificial intelligence is based on computers and designed to replace the human factor with the aim of speeding up and simplifying business processes and improving the quality of output i.e. content intended for the target audience.

## II. ARTIFICIAL INTELLIGENCE AND DIGITAL MARKETING

Artificial intelligence is nowadays being applied in many business fields, with digital marketing being one of the sectors that has most benefited from this technological advancement. At its core, Internet-based marketing activities heavily rely on social networks and networking applications, dependence which creates an intensely competitive industry where business success is closely tied to the ability to capture and retain the attention of an data-overwhelmed audience.

Although artificial intelligence-based programs, in conjunction with appropriate inputs, are capable of handling almost all aspects of digital marketing, the professional and academic communities, as well as the general public, are particularly curious about generative artificial intelligence software. Skaug Sætra explains that generative artificial intelligence is a general term referring to machine learning solutions trained on vast datasets to generate output based on user prompts. [4] Unlike artificial intelligence software related to the analytical and organizational aspects of the marketing process, which is typically expensive and therefore inaccessible to freelancers and small businesses, generative artificial intelligence programs are easily affordable, either free or at very low cost, and accessible through any computer or mobile device with Internet access.

What was impossible and even unthinkable a few years ago is now a reality – all aspects of the content creation process can be transferred from humans to software. Considering that the newest generative artificial intelligence tools have proven remarkably adept at replacing human labor and completing complex tasks related to editing and producing media content, it can be concluded that all it takes to succeed in contemporary digital marketing is to have original ideas. Nevertheless, the requirement for originality can also, to some extent, be met by programs that are capable of brainstorming ideas and exploring niches, meaning that top-notch prompt generation is the actual key to success in today's digital business world.

Prompt engineering is an emerging discipline that encompasses the creation, enhancement, and use of prompts that guide the output of large language models [5], offering lucrative opportunities with salaries soaring up to \$355k as of 2023. [6]

## III. ETHICAL CONCERNS REGARDING ARTIFICIAL INTELLIGENCE

There is a saying that "the road to hell is paved with good intentions", and that proverb materializes in practice in the case of the concept of generative artificial intelligence. The essentially noble intention of streamlining business processes and enriching online content through modern technologies, thereby improving overall human knowledge and experience, is increasingly being undermined, as leading software programs have undergone drastic updates, enabling them to generate output so realistic that it can be easily confused with human-created content. The situation is extremely dire because of a risk that fast innovation cycles will lead to a scenario where even experts in the field will find it absolutely impossible to distinguish generated content from the real deal. This is the reason scholars, organizations, and governments are raising

their voices and actively advocating for rigorous regulations within the realm of artificial intelligence, emphasizing the urgency to implement them before the online environment descends further into chaos.

Having examined the professional literature, we have found that most authors addressing generative software consider the significant risk of creating persuasive fake news, achievable through producing false texts and the use of real people's images placed in entirely imaginary situations and settings. The technology has become so advanced that it is possible to manipulate both photos and videos, meaning that experienced prompt creators can generate almost undetectable fake content involving existing persons. Such material, combined with artificially generated voice sounding almost identical to the original sample, could potentially create serious confusion with far-reaching consequences. According to Skaug Sætra, these generative possibilities could even have detrimental effects on democracy and the stability of political systems. [4] Software based on artificial intelligence is still in the development phase and is thus far from perfect, which is why creators, even without malicious intent, may occasionally disseminate content that is harmful, biased, privacy-invasive, or otherwise sensitive. [7]

Another problem arises from the fact that workers have become increasingly reliant on new artificial intelligence-based technologies, therefore experiencing mental issues such as anxiety or stress in situations when they cannot access and use said tools. [8] There is also criticism deriving from the fact that current artificial intelligence-powered applications are violating copyright laws by populating their databases with billions of images whose owners have never received any compensation. [9] Some of the most popular generative artificial intelligence applications have also been accused of stealing social network bandwidth through the use of scraping bots, a situation that has led some major platforms, such as X (formerly Twitter), to impose reading restrictions in order to prevent unauthorized access. [10]

## IV. METHODOLOGY

Considering the paucity of papers providing data on the usage of artificial intelligence in Serbia and other countries of the Balkan region, we have decided to investigate to what extent generative artificial intelligence-powered software is prevalent among Serbian freelancers, as well as to determine their ethical attitudes towards this kind of technology. With this idea in mind, we conducted an exploratory research with an online survey method using Google Forms on 104 individual respondents.

The data collection took place from October 11, 2023, to October 17, 2023. Respondents were chosen using the convenience sampling method, with the only prerequisite being their affiliation with the Serbian freelance community and experience in fields related to the digital marketing. For a response to be considered complete, all questions were obligatory to answer, thereby leaving no room for omissions and incomplete questionnaires.

The demographic assessment of the respondents revealed that, as far as their gender is concerned, 56.7% were male whereas 43.3% were female. The majority of the subjects were

from the age group between 26 to 55 years (26.9% aged 26-35, 33.7% aged 36-45, 21.2% aged 46-55). Freelancers younger than 26 years were surprisingly underrepresented, constituting only 9.6% of the sample, with the smallest proportion of respondents being older than 56 years, including senior citizens. When it comes to their location, it shows that 47.1% of the respondents are from Belgrade, 10.6% from Novi Sad, 5.8% from Nis, 19.2% from other Serbian cities and municipalities, and lastly, 17.3% are currently living in foreign countries.

V. RESULTS AND DISCUSSION

The first four questions regarded the frequency of using generative technology to create various content types (video, audio, images, text), with the response options ranging from "I don't use it at all" to "I use it every day". The answers are summarized in the table below:

TABLE 1 USAGE OF GENERATIVE SOFTWARE

Type of content → Frequency of usage ↓	Video	Audio	Images	Text
I don't use it at all	54.8%	60.6%	16.3%	19.2%
I've used it a few times in total	12.5%	17.3%	7.7%	5.8%
I use it at least once a month	6.7%	4.8%	17.3%	20.2%
I use it at least once a week	10.6%	4.8%	19.2%	18.3%
I use it every day	15.4%	12.5%	39.4%	36.5%

The obtained results indicate that Serbian freelancers far more frequently utilize generative artificial intelligence for creating images (39.4% of them do it daily) and text (with 36.5% being daily users), compared to generating video and audio content (as many as 54.8% have never attempted to make videos using this technology, while 60.6% lack experience in creating audio formats). These results are to be expected, considering that the creation of video and audio formats requires much more complex prompts and thus a higher level of knowledge, which, logically, is possessed by a smaller number of individuals.

Following that, participants were asked to select their motivations for using generative artificial intelligence from a list of five available options. Interestingly, the majority of them (54.8%) emphasized using this technology to enhance the quality of the created content, while the second and third most common reasons were easing complex business operations (44.2%) and generating new ideas (42.3%), followed by the motive of saving time and effort (41.3%) and the necessity to align with trends set by competitors (33.7%). These results undoubtedly show that, according to Serbian freelancers, artificial intelligence is so advanced that its main advantage is no longer replacing workers to obtain material more easily, but rather creating output that can surpass human-made content in terms of quality.

The next question referred to the most commonly used generative applications. Freelancers' responses indicated that, among the seventeen options provided, they are most familiar with the ChatGPT application (used by 63.5%) and Canva (used

by 49%). Meanwhile, all other applications were significantly less popular, with a usage rate below 25%, which can be explained by the fact that all of them require payment for use, while the two previously mentioned options offer free versions.

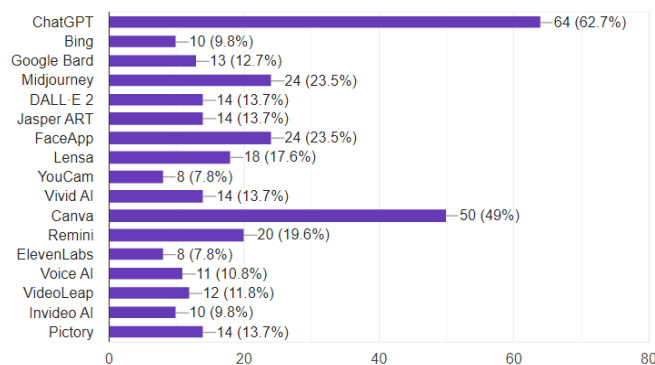


Figure 2. Popularity of generative applications

The second part of the research involved comparing personal ethics with the ethics of actions related to the commercial use of generative artificial intelligence. Participants were first asked to assess their personal ethics using the statement "I consider myself an ethically and morally upright person" and Likert scale response options: "I completely disagree", "I partially disagree", "I don't know, I have no opinion", "I partially agree", and "I completely agree." Upon the completion of data collection, the provided responses were assigned numerical values (ranging from 1 for "I completely disagree" to 5 for "I completely agree") and using SPSS software, version 26, it was calculated that the mean value of personal ethics was 4.46.

Participants were then asked to express their opinions on the five ethical statements regarding the use of artificial intelligence for commercial purposes:

- (1) I find it acceptable to profit from AI-generated content, even if the programs I use create output without proper rights to the inputs;
- (2) I find it acceptable to profit from AI-generated content, even if there are individuals who cannot distinguish between content created by artificial intelligence and genuinely authentic content;
- (3) I find it acceptable to charge the same price for AI-generated content as for content created using traditional methods, despite the time and effort saved;
- (4) I find it acceptable to profit from AI-generated content, even if it lacks originality and uniqueness;
- (5) I find it acceptable to conceal from my clients and audience that I create content using AI.

Response options were once again formulated using a 5-point Likert scale and assigned numerical values upon data collection. To calculate the average ethicality regarding profit from artificial intelligence generation, a decision was made to combine the five questions into one instrument. The first step involved computing the value of Cronbach's alpha. The obtained value of 0.763 confirmed the overall internal consistency among the questions, enabling them to be unified into an instrument whose mean value was calculated to be 2.15.

Statistical analysis revealed a significant discrepancy between respondents' assessment of their personal ethics and

morals and the actions they are willing to take in relation to the use of AI-generated content for profit. This result suggests that Serbian freelancers still don't think enough about the controversies arising from the use of new technologies. It also suggests that they may unconsciously shift the responsibility for the ethical use of innovations to the country and application creators.

## VI. CONCLUSION

The exploratory research showed that the respondents expressed conflicting views about their personal ethical values and the morality of the actions they are willing to take in order to benefit financially from the use of generative artificial intelligence. Specifically, they have ethical concerns and are fully aware of controversies surrounding some practices, but don't believe that these affect their character. This means that they are not inclined to self-regulate their behavior and that it is therefore necessary to lawfully regulate artificial intelligence. The research also showed that Serbian freelancers closely follow all global trends related to generative software, as they are aware that only those who manage to successfully adapt to new achievements in marketing will survive in the digital world.

Given that the artificial intelligence trend will continue, both toward the broader adoption of existing innovations and toward the creation of new solutions, we can recommend that the professional and academic communities focus more on the study of this phenomenon, especially in the context of local freelance communities and their specific interests.

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