



Generative AI – Astonishing But No Reason to be Afraid

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Generative AI – Astonishing But No Reason to be Afraid

by Jannis Figura *

1. Introduction

Generative AI (GenAI) is a form of artificial intelligence that can create novel content such as audio, data, codes, or images. It will drastically change how we approach digital content in the future, and a range of jobs are executed.¹ GenAI gained significant attention worldwide when the California-based company OpenAI launched its artificial intelligence chatbot ChatGPT 3.5 in November 2022. The chatbot gained over 100 million users within the first two months after release.² ChatGPT is a text-based machine learning model that consists of several language models and large amounts of public data, which allow it to create new content based on user instructions. Its capabilities range from giving information on quantum physics to writing poems that sound as if they are written by humans.³ Consequently, many people fear that artificial intelligence could make content-creating jobs branches, such as journalism, marketing or copywriting obsolete.⁴ This article examines the current position of generative AI with its benefits and challenges and what it might bring in the future to address these concerns.

2. The current generative AI landscape

2.1 The capabilities of generative AI

Current GenAI systems can process large amounts of data and generate novel output. At their core lay so-called artificial neural networks (ANNs), which are programmed to make them mimic human thinking. ANNs can learn and recognise data patterns which steadily improves the output. The main advantages of generative AI are the time-efficient and cost-efficient creation of new content by reducing the dependency on human involvement.⁵ Additionally, generative AI systems are excellent at understanding complex systems as they possess more processing power than humans which allows them to organise large amounts of data. At the same time, they are utilisable for data synthesising and transformation. For instance, converting satellite images to map views, or generating marketing data based on market and consumer behaviour.⁶ Generative AI opens the floor for innovations and creative thinking as users can instruct GenAI models to combine data in unforeseen ways. This new potential is specifically helpful for businesses using animations and artificial environments. Furthermore, this technology simplifies many working procedures by taking over tasks previously done by humans.⁷

Some critics argue that GenAI will become so competent that it will make humans dumb as they outsource most thinking to AI. For instance, current GenAI systems can write B-level essays, giving reason to believe that students will cheat their way through education. However, teachers can simply return to paper-based exams, use lockdown browsers that prevent other tabs from opening, or include AI in exams itself to show students how distinguished human thinking is from AI. For instance, GenAI has a high tendency to stereotypical thinking and underrepresent minorities and diversity. So, instead of keeping GenAI out of education and jobs, people should learn how to live and work with it.⁸

2.2 The challenges of generative AI

While artificial neural networks can process more information than humans, they cannot copy us as their operations are bound by their coding and algorithms. For instance, they can only mimic human patterns but not comprehend them, which limits their application scope. So, while it seems astonishing what GenAI can create, it is crucial to consider that the content consists of information humans decide to provide the system. Since AI operations rely on human instructions or prompts, it is necessary to consider the potential use of GenAI for malicious practices. As mentioned earlier, GenAI is programmed to produce a desired output, while its content may not be as accurate as a human text. In certain practices, such as disinformation campaigns, the accuracy of content is not that important, but rather the persuasiveness of the messages. This example is one area where GenAI is exploitable for malicious practices.⁹

Additionally, in security-related areas such as coding and programming, people with bad intentions can compromise generative AI products. They can intentionally write and share codes with hidden backdoors online that GenAI inserts in new programmes, which makes them vulnerable and prone to hacking. Furthermore, even though unintentionally, GenAI may coincidentally reproduce a copyrighted code because the AI relies on publicly available material.¹⁰ Even more concerning is that AI systems tend to produce buggy and vulnerable codes without human intervention as they have difficulties in anticipating weaknesses. The problem is that these systems do not understand what security means. A study of AI programming systems discovered that approximately 40% of all generated programmes in the research project had security vulnerabilities.¹¹

2.3 Governance of generative AI

At the moment, there are no governance structures for GenAI operations. Within private companies, most of them

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favour limiting access to their products and self-govern their applications for economic revenue. However, newer companies such as OpenAI advocate a more democratic approach to GenAI and provide some services for free. In this view, GenAI has the potential to positively impact society by giving everyone access to its benefits.¹² Models such as ChatGPT do not necessarily cause a stir due to their incredible functions, but rather the fact that they are easily accessible for the public.¹³ From a non-corporate point of view, there are no regulations for these technologies. This absence brings several problems, for example, potential privacy infringement, intellectual property theft, and copyright issues. Most content is either online or based on online material, which makes it more problematic to attribute and claim ownership.¹⁴

Engler (2023) advocates that companies providing GenAI or businesses using these models are responsible for ensuring their appropriate use. Once national governments begin using them, they also become responsible for monitoring their functioning. Currently, the governance of GenAI is still in the early stages. Therefore, developers of GenAI models must ensure that their programmes work within certain limitations. For instance, prevent programmes like ChatGPT from generating texts that include misinformation or discriminate against people.¹⁵

2.4 The market value

The generative AI market will probably be worth more than 200 billion dollars by 2032.¹⁶ GenAI is currently still in the developing stage. Nonetheless, it is expectable to bring enormous economic benefits in the upcoming years. For instance, GenAI reduces costs by automating tasks previously done by humans, such as data gathering, augmentation or image generation. These capabilities also reduce costs for companies and save time.¹⁷ Figure 1 shows a general overview of the GenAI market in 2023.

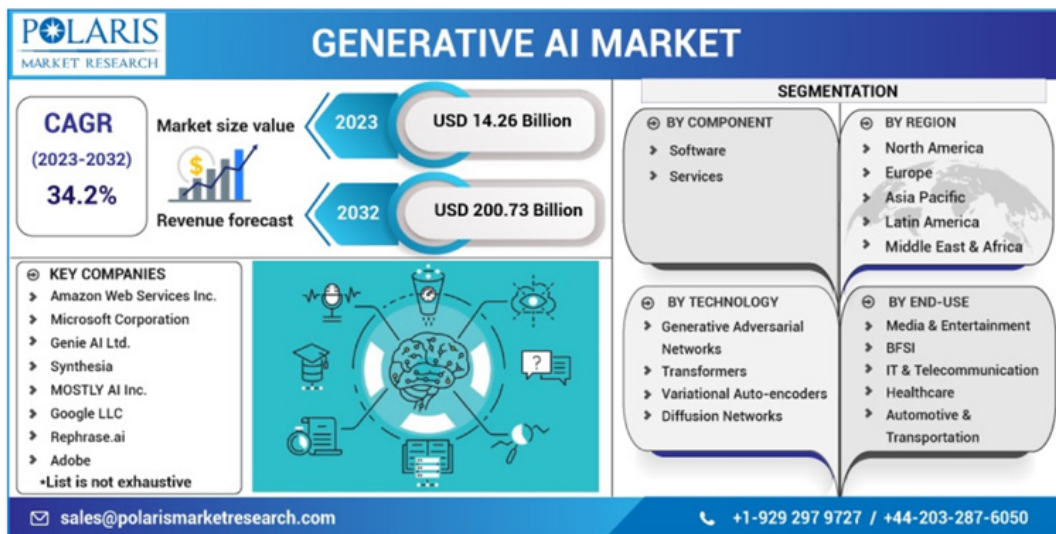


Figure 1. An overview of the GenAI market in 2023. Retrieved from Polaris Market Research (2023).

Already in February 2023, the importance of GenAI for future businesses became clear when Google's parent company Alphabet Inc. lost \$100 billion market value (9% shares) due to an error in its new chatbot Bard. Google already announced that Bard would be the future of its search function. Thus, it came as an unpleasant surprise when Bard explained in an advertisement that the James Webb Space Telescope (JWST) made the first pictures of exoplanets in 2022, even though those were already taken in 2004 by the European Southern Observatory (ESO). Such simple mistakes can have grave economic consequences for companies promoting these technologies. Some experts say that there is a need for success due to high competition in GenAI development, which led to an early release by Google causing this error.¹⁸ Mistakes like these show us that GenAI is still in the development stage and large-scale incorporation in our everyday life will take more time.

3. Implications

Generative AI models will undeniably change how many jobs are done in the future and businesses operate. Its distinguished advantages are simplifying many working procedures and processing large amounts of data. Consequently, it saves valuable time and resources. However, the main challenges of GenAI are the weak governance structures and its tendency to make mistakes as it cannot understand its own creation. The governance structures are required to prevent misuse and malicious practices. The GenAI market is still developing, but models such as ChatGPT already give us an idea of what this technology can do.

Furthermore, it is unlikely that GenAI will make content-creating jobs obsolete because AI models cannot comprehend the output they produce nor the relationship its content has with the receiver or audience of the content.

Therefore, GenAI should be seen as less of a threat to the job market but rather as a supportive component that will augment and improve current human capabilities. We must learn how to use GenAI for our own benefit instead of just accepting the results it gives us. This symbiosis requires training with AI in businesses and education. Simultaneously, policies are needed to direct the development and application of GenAI. While it seems astonishing what GenAI models such as ChatGPT can create, it is vital to take a closer look to identify their flaws. This article mentions the tendency to stereotypical thinking, the creation of inaccurate content, and insecure systems, among others. It is undeniable that GenAI will improve and reduce these problems. However, similar to a take-over by AI, it is unreasonable to believe that GenAI will ever achieve perfect results in all its applications as it will always operate within a human context, whether it is its input or output. Therefore, jobs such as programmers, journalists or copywriters are always needed to supervise and interpret the work of AI. Similar to many other innovations, GenAI will have positive and negative effects on our daily life.

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