THE STRATEGIC ROLE OF GENERATIVE AI IN MANAGING COMPANY'S PROCESSES

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Abstract

This article focuses on the importance and the strategic role of generative artificial intelligence in process management at the organizational level and outlines the conceptual framework of generative AI technology. At a company level, decision-making processes are directly influenced by the automation of operational processes to a large extent, with human resource being the key to information modelling. The purpose of this paper is to highlight the impact and how generative AI technologies can be strategically leveraged within a company. These aspect concentrates on sustaining innovation at a high level and maintaining a competitive advantage in a dynamic economy.

The main points of the research include: descriptive elements of AI technologies, exploration of generative AI capability in organizational environment processes, the strategic role of using these technologies, describing human resources in reshaping the results obtained and the conduct of work processes, identifying challenges and managing risks in this modern global framework of functioning in the human resources market.

Generative AI technologies present a major potential in handling the company's business because it provides support on every operational level, being a strategic mechanism that facilitates adaptation to the innovative markets and resilient conditions.

Keywords: *AI generative technologies, companies, decisions, AI ethics, business processes.*

1. Introduction

Generative AI technologies are tools that supports both individual and collective work. The need to find solutions and optimize work processes, reduce costs and automate content has led to the current focus on this topic.

At a global economic level, we are in a time where there is a significant pressure to accelerate digitization and competition. The importance of this topic also stems from the fact that a company is massively influenced in the conduct of its business both at the level of knowledge management and at the marketing level, in customer relations. The integration of these technologies has a high relevance both in the practical and academic environments, where theoretical concepts are traced on conceptual directions. This paper draws attention to the fact that the use of generative AI technologies requires awareness of ethical considerations.

2. Theoretical approaches of generative AI in the process management

2.1. Generative AI – definitions and categories

Generative AI is a component of artificial intelligence that is based on the creation of new content (text, animation, sound, coding, data, images) using an existing dataset and machine learning and processing models. Generative Ai produces creative yet trainable outputs, outputs that simulate human intelligence and present a rich way of using information. The existence of this type of technology brings in front the ability to respond to challenges by quickly automating content, thereby supporting organizational decision processes and the entire workflow.[1]

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[1] J. Russel, P. Norvig, *Artificial Intelligence: A Modern Approach*, 2nd ed., Pearson Education, 1995.

Through this paper we aim to analyze how generative AI technologies work and their ability in organizational approach and deployment of strategies in firm processes. The main focus is on the importance of these technologies in terms of their high potential to shape and transform the way of conducting activities on each department. Examples of extended capability models are GPT (Generative Pretrained Transformer), Midjourney, DALL-E, etc.

Table 1. Comparison of different types of AI

	AI traditional	Generative AI
Description of usage and similarities	o mathematical models and algorithms o training data o task automation o machine learning	o mathematical models and algorithms o training data o task automation o deep learning
Differences	o perform clearly defined tasks o grades or scores a decision o does not create new content	o generates result variants regardless of the query o the result is an original output o does not always fit within classical parameters and can be difficult to control the content
Examples of software applications/programs	o streaming platforms o voice recognition o questionable, non-transparent decisions	o text creation o image generation o video and sound generation o code writing programs o video generation programs
Ethical issues	o algorithm bias o data confidentiality o data use and uptake process monitoring	o copyright infringement o unauthorized use of data
Rules and regulations	o Data Protection Regulations (GDPR) o Sector-specific rules on various domains o Ethical principles of international organizations (OECD AI principles	o AI Law (EU, 2024, under implementation) o AI Executive Order (US, 2023) o UNESCO Recommendation on the Ethics of Artificial Intelligence (2021)

Source: AI generated, processed and validated by the authors

Generative AI uses large datasets to learn statistical and semantic models, and the sources of this data are varied and often combined. Here are the most important sources: public data from the internet (images, texts, publications, forum discussions), Open Access databases (journals, articles, licensed photos, scientific databases, etc.), automatically generated synthetic data and the content generated by various users.

2.2. Bringing Generative AI to the organization's activities

The emergence of Large Language Models (LLMs) in the early 2020s opened a new vision of strategic process development in companies through the ability of coherent text and information generation programs to transform, translate and encode information so that the results would be relevant. The use of these programs has thus gained a high degree of confidence, with a shift from experimental data generation to concrete use at the company level, for example in marketing (service and product promotion, creation of customized content, information modeling and market prospecting), in human resources management (through the automation of applications, analysis of recruitment data, etc.) but also at the level of other departments by quickly extracting and sorting the information required on a point-in-time basis from a large volume of data.

2.3. Relevant conceptual framework

The particularity of the information about generative AI technologies has led to the emergence of specialized notions about the theoretical underpinnings that support the dissemination and framing of AI actions in management.

These notions are of high value because they explain the correlations of artificial intelligence with specific process-directed organizational management. [2]

Other authors who have dealt with this topic have categorized AI technologies according to the different implications they have on decision mechanisms.[3] Generative AI is based on its major role on innovation in the field and on increasing the means of utilization among users in the company.

3. Strategic organizational mechanisms based on generative AI

The starting point in the use of AI technologies was the automation of repetitive tasks. The evolution of these has led to the expansion of AI's ability to solve tasks that have a creative note. Thus, moving from automating production or logistics processes to automating marketing and other departments. The results were visible, process efficiency increased, execution periods were reduced and there was no need to increase human resources. A huge advantage of AI technology is that it can structure and synthesize very quickly, efficiently, with fairly high accuracy large volumes of data and can come up with pertinent recommendations in decision`s mechanism. The integration of generative AI into the organizational system leads to predictive processes that aid in decision making and is also an important competitive advantage.

3.1. Embracing generative AI in the organizational culture

A first step in the use of generative AI technologies involves significant training among employees on developing skills at the basic digital process layer and then at the creative use layer. As collective thinking becomes more flexible on this issue, a major process of change takes place both at the level of individual thinking, through self-experimentation and actual testing, and at the collective level by highlighting the positive results quickly achieved from accessing generative AI technologies.

„Today's consumers are fully embracing digital technology, considering the experiences they have with other companies globally, by using web and mobile apps to find information instantaneously and pressuring companies to level up their experiences".[4] AI technologies can support the development of new concepts or improve the existing ones in different domains. For example, at the ecological sector, „challenges associated with odour emissions frequently act as a constraining element in the establishment or expansion of composting and bio-stabilization plants"[5], so its technologies used correctly by human resources can lead to a rapid resolution of challenging processes in general.

Another example involves the financial aspect, all companies are interested in money, in what form it can be earned, held, transferred and transformed. AI generative resources have played an important role in the shift from physical money (cash) to the transformation of types of e-currency and the expansion of its use. „The growing popularity of digital currencies underscores the need to critically examine their implications for the future of money in the digital age. As digital currencies gain traction among consumers, businesses, and governments, questions arise about their impact on financial stability, monetary policy, and the broader economy.

Moreover, the rise of digital currencies raises fundamental questions about the nature of money itself, challenging long standing assumptions about its functions, properties, and societal significance."[6]

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[2] E. Brynjolfsson, A. McAfee, *Race against the machine: How the digital revolution is accelerating innovation, driving productivity, and irreversibly transforming employment and the economy*, in Library of Congress Cataloging-in-publication Data, 2011.

[3] T.H. Davenport, R. Ronanki, R., *Artificial intelligence for the real world*, in Harvard Business Review, 96(1), 2018, p. 108-116.

[4] T. Purcărea, V. Ioan-Franc, Ş.A. Ionescu, I.M. Purcărea, V.L. Purcărea, I., Purcărea, A.O. Orzan, *Major shifts in sustainable consumer behavior in Romania and retailers' priorities in agilely adapting to it*, Sustainability, 14(3), 2022, p. 1627.

[5] C. Constantin, O.G. Popa, S.M. Calinescu, G. Tanase, *Determination of odour emission rates emitted by active area sources and dispersion of odour concentration in the surrounding air*, in Rom. J. Ecol. Environ. Chem., 5, no. 2, 2023, pp. 117-127.

[6] V.G. Cristea, *Money or digital money: to be or not to be?*, in Challenges of the Knowledge Society Journal, 2024, pp. 649-657.

When it comes to literature and learning and teaching content, both traditional and generative technologies are being used day by day to an increasingly capacity, with improvements being made continuously to the datasets used, through the involvement and processing of data by human resources.

AI technologies represent an ally in management and work processes. The use, presentation, evaluation of these technologies in companies is the way of coping with the current needs of the society and represents in fact the adaptation to the modern business intelligence, by integrating the necessary competences. In the current state, the companies are facing a time of implementation of AI technologies, of adaptation and integration of rules and regulations for a better understanding of the information and data used, respecting the limits and ethical conditions.

The future will certainly bring new changes, expanded capabilities and new language patterns. An important aspect is that people, at the human resource levels, have realized that generative technologies are a valuable resource in the decision-making mechanisms and in the conduct of all activities.

3.2. Procedural mechanisms of generative AI in companies

Media and IT companies have integrated extended capability tools and complex language models to meet organizational requirements.

These tools help generate reports, get feedback and reduce execution time. There are many companies in the media that automatically generate financial news and then validate it with human resources.

This strategic mechanism has led to a high volume of published material, read daily, providing a quick response from the market.

4. Risks and challenges assessment of generative AI usage in companies

Ethics is the first matter to come into question in the use of data from generative AI technology queries due to the fact that content may often be exposed and may include data that is sensitive depending on context and conjecture, content that may initially appear to have high potential in support of the company. Also, elements may be exposed and lead to misinformation or misrepresentation of reality and underlying information by modeling training data in different parameters and also by lack of clarity and transparency at the level of the decision-making mechanism.

It is the managers who have to act responsibly, they have to consider how the generated results, initial information and applied criteria are used, and they have to set clear boundaries for the compliance with ethics in the field and for the use of embedded technologies and data. The consequences of not respecting ethics in the use of generative AI technology in organizational processes can lead to associating the company with a low level of trust in terms of transparency, reputation, customer relations and internal company users.

At a privacy and data security level, generative language patterns can embed, synthesize and mix information from training data, which can create serious GDPR issues related to protected or sensitive data. At a corporate scale, internal user data is of the utmost importance and therefore there is a need to protect IT systems from cyberattacks.

The emergence of generative Ai technology has shown resistance to change of employees who used to work in the traditional way and their need to be trained and integrated and adapted to the new working methods.

In the organizational framework is necessary to ensure a process of transition from traditional to new methods, it is necessary to support innovation through technology in order to become an important tool, a major support in work processes.

5. Strategic tracking of integrating generative AI into the organizational environment

The extensive use of generative AI technology within a company requires an integration of work and decision processes per department, and it is essential to clearly establish the strategic objectives and mechanisms of the company and a proper assessment of the outputs that the technology can make in this regard.

The critical factors in this case are represented by: the real establishment of digital competencies at the human resources level, the provision of technological infrastructure and material base, the use of verified and

quality data, the opening of management structures to innovation, business intelligence and organizational culture, the establishment of several sets of KPIs for each to further facilitate the processes of measuring efficiency, business effectiveness and the implementation of other tools and policies designed to support the smooth running of the company.

Organizational management has a great responsibility to ensure the integration of generative AI in the company and to keep a close watch on work processes. The monitoring and implementation of governance policies in this area must support the automatization of decisions based on constantly changing algorithms.

A gradual phasing of the process of organization-wide integration of generative AI technologies needs to respect the process exploration area *i.e.* point identification of tasks that can be processed and automated, it needs to experiment with training and controlled data implementation of the results and solutions found and then it needs to evaluate and forecast what happens after using the data outputs and only then extrapolate the effects in the company and the market. These steps support a gradual integration approach with minimization of known risks, maximizing the achievement of favorable outcomes.

6. Conclusions

This paper described and explored the role, importance and impact of the recognition and use of generative AI in the company's process management, highlighting both the risks and advantages in applicability. It also highlighted the emergence of compliance and continued development of ethical requirements in the use of the resulting data. Also, in the paper we exemplified how the extended capabilities of language models can support organizational activity by automating tasks and providing ideas that do not need to be created from 0 but only need to be validated or processed to some extent by the human factor. Looking at the macro-level posture of a company, we can state that the integration of generative AI technologies gives a highly competitive advantage and provides strategic and marketing elements of utmost importance. At the microeconomic vision there is a better organization and deployment of work processes, productivity and speed of response increase and customer relations are improved. Issues to be considered for the future are the need for enterprise-wide governance to foresee ethical risks in the use of the tool, related to privacy and security.

References

- Brynjolfsson, E., McAfee, A., *Race against the machine: How the digital revolution is accelerating innovation, driving productivity, and irreversibly transforming employment and the economy*, in Library of Congress Cataloging-in-publication Data, 2011;
- Constantin, C., Popa, O.G., Calinescu, S.M., Tanase, G., *Determination of odour emission rates emitted by active area sources and dispersion of odour concentration in the surrounding air*, in Rom. J. Ecol. Environ. Chem., 2023, 5, no. 2;
- Cristea, V.G., *Money or digital money: to be or not to be?,* in Challenges of the Knowledge Society Journal, 2024;
- Davenport, T.H., Ronanki, R., *Artificial intelligence for the real world*, Harvard Business Review, 96(1), 2018;
- European Commission, *Ethics Guidelines for Trustworthy AI*, April 2019, available at: *https://ec.europa.eu/digital-strategy*;
- Factory. *What is the role of digitalization in business growth?* Factory Blog. 27 September 2021, available at: *https://factory.dev/blog/digitalization-business-growth*;
- Google AI. „Open Images Dataset", available at: *https://storage.googleapis.com/openimages/web/index.html;*
- Meta AI, LLaMA: *Open and Efficient Foundation Language Models*, 2023, available at: *https://ai.meta.com*;
- OECD. OECD Principles on Artificial Intelligence, 2019, available at: *https://oecd.ai/en/ai-principles*;
- OpenAI, GPT-*4 Technical Report*, 2023, *https://openai.com/research/gpt-4*;
- OpenAI. System Card for GPT-4. 2023, available at: *https://openai.com/gpt-4*;
- Purcărea, T., Ioan-Franc, V., Ionescu, Ş.A., Purcărea, I.M., Purcărea, V.L., Purcărea, I., Orzan, A.O., *Major shifts in sustainable consumer behavior in Romania and retailers' priorities in agilely adapting to it,* in Sustainability, 14(3), 2022;
- Russel, J., Norvig, P., *Artificial Intelligence: A Modern Approach,* 2nd ed., Pearson Education, 1995;
- UNESCO, *Recommendation on the Ethics of Artificial Intelligence*, 2021, available at: *unesco.org*;
- European Union, AI Act, 2024, available at: *Eur-lex.europa.eu*.