

A Review of Generative AI in Organizational Management: Potential, Challenges, and Future Directions

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Abstract

Generative AI (GAI) presents a transformative force for organizational management, offering vast potential to enhance efficiency, improve decision-making, foster innovation, and deliver exceptional customer experiences. This review delves into the current state of knowledge surrounding GAI applications within various organizational functions. It explores the potential benefits of GAI in areas such as automating repetitive tasks, generating data-driven insights, and supporting creative innovation processes. Additionally, the review examines the key challenges and considerations associated with GAI implementation, including ethical concerns, data security and privacy risks, and potential job displacement. Finally, the review outlines key future research directions, emphasizing explainable AI, human-AI collaboration frameworks, the development of ethical frameworks, and longitudinal studies to assess the long-term impact of GAI on organizations and society. By acknowledging both the opportunities and challenges associated with GAI, this review aims to provide a comprehensive resource for organizational leaders and researchers seeking to navigate the rapidly evolving landscape of AI in organizational management.

Keywords: Generative Artificial Intelligence (GAI), Organizational Management, Machine Learning (ML), Artificial Intelligence (AI), Business Transformation.

Received: November 04, 2025;

Accepted: November 11, 2025;

Published: November 18, 2025

Introduction

The Rise of Generative AI

Generative AI (GAI) encompasses a range of machine learning techniques capable of producing novel and creative content, including text, code, and other multimedia formats. Utilizing deep learning algorithms trained on massive datasets, GAI can learn underlying patterns and distributions, enabling it to generate outputs statistically similar to the training data. This capability has garnered significant interest across diverse industries, and organizational management is no exception.

Organizations are increasingly exploring the potential of GAI to streamline processes, enhance decision-making, foster innovation, and deliver exceptional customer experiences. GAI holds immense promise to augment human capabilities, automate repetitive tasks, and generate valuable insights, ultimately leading to improved efficiency, productivity, and competitiveness. However, responsible

development and deployment are crucial to mitigate ethical concerns, ensure transparency and explainability, and address potential challenges like job displacement and data security risks.

GAI's Potential in Organizations

Organizations are increasingly exploring the potential of GAI to streamline processes, enhance decision-making, and foster innovation. GAI holds immense promise to augment human capabilities, automate repetitive tasks, and generate valuable insights, ultimately leading to improved efficiency, productivity, and competitiveness. This review examines the current state of knowledge regarding GAI applications in organizational management, highlighting its potential benefits, challenges, and future research directions.

Scope and Focus of the Review

This review delves into the current state of knowledge regarding GAI applications in

Citation: Prateek Khanna (2025) A Review of Generative AI in Organizational Management: Potential, Challenges, and Future Directions. J Modr Sci Scient Res 1: 1-5.

organizational management. It explores the potential benefits of GAI across various organizational functions, highlighting its impact on efficiency, decision-making, innovation, and customer experience. Additionally, the review examines the challenges and considerations associated with GAI implementation, including ethical concerns, transparency and explainability, job displacement, and data security and privacy. Finally, it outlines key future research directions, emphasizing explainable AI, human-AI collaboration, the development of ethical frameworks, and longitudinal studies.

Search Strategy

1.a: The question addressed by the review: This review aimed to explore the potential benefits, challenges, and future research directions related to the use of Generative AI (GAI) in organizational management.

b. Information Sources and Search Strategy

b. i. Databases and other Sources:

Electronic Databases:

Google Scholar
Web of Science
Scopus
ScienceDirect
Business Source Complete

Other Sources:

McKinsey Global Institute reports
Deloitte Insights reports
Gartner reports
Websites of relevant industry organizations (e.g., Association for the Advancement of Artificial Intelligence (AAAI), World Economic Forum (WEF))

b. ii. Search Terms:

Primary Terms:

Generative AI
Generative Adversarial Networks (GANs)
Variational Autoencoders (VAEs)
Artificial intelligence (AI)
Machine learning (ML)
Organizational management
Business applications
Organizational transformation

Secondary Terms:

Automation
Decision-making
Innovation
Customer experience
Efficiency
Productivity
Ethics
Bias
Transparency
Future of work

Boolean Operators:

AND (used to combine primary and secondary terms)

OR (used to search for synonyms or related terms)

NOT (used to exclude irrelevant terms)

Example Search String: (Generative AI OR GANs OR VAEs) AND (organizational management OR business applications) AND (benefits OR challenges OR future research)

b.iii.Date Range: January 1, 2016 - August 29, 2025

b.iv. Filters:

Language restrictions: English only

Publication type restrictions: Research articles, industry reports, and white papers

Selection Process

a. The process of screening search results for inclusion/exclusion:

Initial Screening: Titles and abstracts of all search results were screened for relevance to the review question. Studies were excluded if they did not explicitly discuss the application of GAI in organizational management contexts.

Full-Text Review: Studies meeting the initial criteria were retrieved for full- text review. Full-text articles were assessed for:

- Alignment with the review topic and objectives
- Methodological rigor and quality
- Contribution to the existing knowledge on GAI in organizational management

This search strategy aimed to identify a comprehensive set of relevant studies from diverse sources while maintaining a high level of quality and focus on the specific review question.

Review Structure

This review is structured as follows:

Section 2: Potential Benefits of GAI in Organizational Management

Section 3: Challenges and Considerations

Section 4: Future Research Directions

Section 5: Conclusion

Potential Benefits of GAI in Organizational Management

GAI presents a multifaceted opportunity for organizations to enhance their capabilities and gain a competitive edge. This section delves into the potential benefits of GAI across various organizational functions.

Enhanced Efficiency and Productivity

GAI presents a powerful tool for automating repetitive and time-consuming tasks, freeing up human resources for higher-level strategic activities. Some key areas of application include:

Report Generation: GAI can analyze data and automatically generate insightful reports, saving significant time and effort compared to manual processes [1].

Content Creation: From marketing materials and social media posts to internal communications, GAI can assist in content creation, ensuring consistency and efficiency [2].

Data Analysis: GAI can automate data analysis tasks such as data cleaning, pattern recognition, and trend identification, enabling faster and more efficient insights extraction [3].

Deduplication of Work: GAI can assist with reducing duplication of work and allowing managers to focus on high value-added tasks [1].

Process Automation: Generative AI technology can be used to enhance decision-making and automate processes in organization [4].

Facilitating Organization Change: Generative AI tools can be used as a facilitator in organization change initiatives as part of strategy implementation [5].

Scaling of Operations: Provides an example of the use of generative AI by a food products company for scaling of operations [6].

Studies by McKinsey Global Institute (2017) suggest that automation through AI has the potential to unlock significant economic value, with a projected impact of \$7.1 trillion to \$13.7 trillion on global GDP by 2030. In addition, a study by found that organizations using AI for automation reported a 20% increase in productivity [3].

Improved Decision-Making

By providing data-driven insights and supporting informed decision-making, GAI can empower organizations. This includes:

Data-Driven Insights: GAI can analyze vast amounts of data from diverse sources, including customer data, market trends, and financial information, to identify patterns and generate insights that are difficult for humans to detect [7].

Predictive Modeling: GAI can assist in developing predictive models that forecast future outcomes, enabling organizations to make proactive decisions and mitigate potential risks.

Scenario Planning: GAI can assist with scenario planning by simulating various future possibilities based on different variables, allowing organizations to prepare for a range of contingencies [8].

A study by PricewaterhouseCoopers (2018) found that 73% of executives believe AI will significantly improve their ability to make decisions. A research article by Davenport et al. highlights how organizations like Netflix and Amazon leverage AI for data-driven decision-making, enhancing customer experience and personalization [8].

Increased Innovation

GAI can fuel creative thinking and support the innovation process by:

Idea Generation: GAI can explore diverse possibilities and brainstorm novel ideas beyond human limitations, encouraging breakthroughs and innovation [2].

Product Development: GAI can assist in product development by analyzing user data, identifying design flaws, and proposing potential improvements [9].

Prototyping and Testing: GAI can streamline prototyping and testing processes by enabling virtual simulations and automated testing procedures [2]. discusses how generative AI can be used in innovation management, including exploration, ideation, and digital prototyping [10]. It does not specifically mention the management of organizations.

Strategic Innovation: Outlines strategic framework for innovating using generative AI [11].

Improved Customer Experience

GAI can personalize customer interactions, enhance engagement, and improve overall customer experience by:

Chatbots and Virtual Assistants: GAI-powered chatbots can provide 24/7 customer support, answer inquiries efficiently, and resolve simple issues, freeing up human agents for more complex interactions.

Personalized Recommendations: GAI can analyze customer data to offer personalized product recommendations, targeted marketing campaigns, and tailored content, enhancing customer satisfaction and loyalty.

Sentiment Analysis: GAI can analyze customer reviews and social media data to understand customer sentiment, identify areas for improvement, and personalize communication strategies accordingly.

A study by found that by 2022, 70% of customer interactions will involve emerging technologies such as chatbots, highlighting the growing potential of GAI in customer service [12].

Challenges and Considerations

Ethical Concerns

The implementation of GAI raises several ethical concerns that need to be addressed:

Bias: GAI models are trained on datasets that may contain inherent biases, leading to discriminatory outcomes in decision-making, such as unfair hiring practices or biased marketing campaigns. Organizations must strive to identify and mitigate bias in training data and model development [13].

Transparency and Explainability: GAI models can be complex and non-transparent, making it challenging to understand their reasoning and decision-making processes. This lack of transparency can hinder trust and acceptance of GAI outputs. Efforts should be directed towards developing explainable AI models that provide insights into their rationale [14].

Job Displacement: Automation through GAI has the potential to displace jobs in specific sectors, raising concerns about unemployment and societal disruption. While new jobs may be created, proactive strategies like reskilling and upskilling initiatives are crucial to manage workforce transitions and minimize negative impacts (World Economic Forum, 2020).

Data Security and Privacy

GAI systems often rely on large volumes of data, raising concerns about data security and privacy:

Data Breaches: GAI systems are susceptible to data breaches, potentially compromising sensitive customer information, financial data, or intellectual property. Implementing robust security measures and adhering to data minimization practices are essential to mitigate risks [15].

Privacy Violations: GAI systems can collect and analyze personal data, raising concerns about individual privacy and potential misuse of information. Organizations must adhere to data privacy regulations, such as the General Data Protection Regulation (GDPR) in Europe, and ensure user consent and control over their data [16].

Future Research Directions

Explainable AI

Developing explainable AI models that provide insights into their reasoning and decision-making processes remains a crucial research direction. This requires:

Interpretability Techniques: Researching and developing techniques that allow human experts to understand the inner workings of GAI models and interpret their outputs.

Human-centered Design: Integrating human-centered design principles into GAI development to ensure explainability and transparency for users and stakeholders [17].

Human-AI Collaboration

The future of work in the age of GAI is likely to be characterized by collaboration between humans and AI, leveraging the strengths of both:

Complementary Skills: Humans excel in tasks requiring creativity, critical thinking, and social intelligence, while GAI excels in handling large amounts of data, recognizing patterns, and automating repetitive tasks [18]. Discusses the potential future of AI in corporate management, including the possibility of AI taking over the management of business organizations [19]. Discusses the potential use of generative AI across disciplines in an organization [20].

Augmented Intelligence: GAI can augment human capabilities by providing decision-making support, automating tasks, and freeing up human resources for higher-level strategic thinking [21].

Ethical Frameworks for GAI

Developing robust ethical frameworks for GAI development and deployment is crucial:

Ethical Guidelines: Establishing ethical guidelines and principles for responsible GAI development, addressing considerations like fairness, transparency, and accountability.

Regulatory Frameworks: Implementing regulatory frameworks to ensure the ethical and responsible use of GAI, balancing innovation with protecting human rights and societal well-being [22].

Research in this area should involve multi-stakeholder

collaboration among researchers, policymakers, industry leaders, and civil society organizations to develop comprehensive ethical frameworks that address the complex challenges surrounding GAI development and implementation.

Longitudinal Studies

Longitudinal studies are essential to understand the long-term impacts of GAI on organizations, society, and the workforce. These studies should:

- **Evaluate the effectiveness of GAI in different organizational contexts.**
- **Assess the potential long-term economic and societal impacts of GAI, including job displacement and the creation of new job opportunities.**
- **Investigate the ethical implications of GAI use over time, identifying and mitigating potential risks.**

By conducting longitudinal studies, researchers can gain valuable insights into the evolving nature of GAI in organizations and inform responsible development and deployment practices for the future.

Conclusion

Generative AI (GAI) holds immense potential to transform organizational management, offering opportunities to enhance efficiency, improve decision-making, foster innovation, and deliver exceptional customer experiences. However, responsible development and deployment are crucial to mitigate ethical concerns, ensure transparency and explainability, and address potential challenges like job displacement and data security risks.

As research in GAI continues to evolve, a focus on human-AI collaboration, the development of ethical frameworks, and longitudinal studies assessing long-term impacts will be vital to ensure the successful and beneficial integration of GAI into the future of organizational practices. Organizations must carefully consider the potential benefits and challenges associated with GAI implementation and adopt responsible practices that prioritize ethical considerations, transparency, and human well-being alongside technological innovation.

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