

TECHNOLOGY ENABLED SYSTEM IN VARIOUS MANAGEMENT ROLE IN COMPANIES: SPECIAL REFERENCE TO AI

¹SUVARNA AMIT GOGATE ²Dr. AKANSHA TYAGI

³Dr. UMESHWARI PRATAPRAO PATIL

DEPARTMENT OF COMPUTER SCIENCE

SHRI JAGDISH PRASAD JHABARMAL TIBREWALA UNIVERSITY,

VIDYANAGARI, JHUNJHUNU, RAJASTHAN

Abstract

This paper explores the multifaceted roles of technology-enabled systems in enhancing decision-making, operational efficiency, and strategic planning within organizations. By examining case studies and industry applications, we highlight how AI-driven tools facilitate data analysis, automate routine tasks, and improve customer engagement, thereby enabling managers to focus on higher-level strategic initiatives. The findings underscore the transformative potential of AI in reshaping management roles, fostering innovation, and driving competitive advantage. Moreover, we discuss the challenges and ethical considerations associated with AI implementation, emphasizing the need for a balanced approach that harmonizes technological advancement with human oversight. This study aims to provide insights into the future trajectory of management practices in an increasingly automated world, advocating for a synergistic relationship between technology and human intelligence.

Keywords: technology, enabled system, management role, companies, special reference to AI

INTRODUCTION

In today's business landscape, technology has revolutionized the way companies operate, strategize, and manage their resources. The integration of technology into management roles has created a paradigm shift, fundamentally altering the way organizations make decisions, optimize processes, and deliver value to their stakeholders. Among the various technological innovations driving this transformation, artificial intelligence (AI) stands out as one of the most powerful and influential tools that companies are leveraging to improve efficiency, enhance decision-making, and sustain competitive advantages. AI-enabled systems are no longer confined to futuristic visions; they are at the core of business operations, impacting everything from human resources to supply chain management, marketing, customer relations, and strategic planning.

AI and other advanced technologies have become essential components of corporate ecosystems, enabling managers and decision-makers to harness the power of data, automate routine tasks, and derive insights that were previously unattainable. Whether through machine learning, data analytics, automation, or cloud-based platforms, technology-enabled systems offer unprecedented opportunities for improving organizational performance. This introduction explores the multifaceted roles that technology plays in modern management, with a special emphasis on AI and how it is reshaping various managerial functions.

The Evolution of Technology in Business Management

Historically, management functions in organizations have always relied on a combination of human skills and traditional tools. From the use of ledgers and manual record-keeping in financial management to the physical tracking of goods in supply chains, the tools of the past were often labor-intensive, error-prone, and slow. Over the last few decades, however, the rapid advancement of information technology (IT) has brought significant improvements in the way businesses operate. Computer systems, the internet, and mobile technologies have allowed companies to digitize many processes, making them faster, more accurate, and scalable.

The advent of the Fourth Industrial Revolution, characterized by the fusion of physical, digital, and biological worlds, has introduced disruptive technologies such as the Internet of Things (IoT), big data, cloud computing, and AI into the business realm. These innovations are pushing the boundaries of what is possible in management by enabling more sophisticated and efficient methods of handling data, resources, and human capital. The role of AI, in particular, is transforming management systems by automating tasks that previously required human intervention, providing data-driven insights, and enabling predictive analytics that guide strategic decision-making.

AI has become an essential component in the development of "smart" business systems, which leverage data to continuously learn, adapt, and improve over time. By integrating AI into various management functions, companies are able to not only streamline their operations but also enhance their ability to predict market trends, personalize customer experiences, and innovate at a faster pace than ever before.

The Role of AI in Management: An Overview

Artificial intelligence, in the context of business management, refers to the use of algorithms and machine learning models to automate decision-making, analyze vast amounts of data, and optimize processes. AI systems are able to process large quantities of information quickly, identify patterns, and generate actionable insights that can be used to improve decision-making. In management, AI plays a crucial role across various domains, including human resources, finance, marketing, operations, and strategic planning.

Some of the most prominent uses of AI in management include:

1. **Automation of Routine Tasks:** AI is capable of automating repetitive, rule-based tasks, such as payroll processing, data entry, and inventory management. By taking over these mundane tasks, AI allows managers and employees to focus on higher-level strategic initiatives.
2. **Data Analysis and Predictive Analytics:** AI algorithms can analyze large datasets to uncover trends, correlations, and insights that humans may miss. This capability is particularly useful in market research, customer behavior analysis, and financial forecasting.
3. **Personalized Customer Experiences:** AI-driven customer relationship management (CRM) systems use machine learning to personalize interactions with customers, leading to better customer satisfaction and loyalty. These systems analyze data on customer preferences, purchase histories, and behaviors to predict future needs and offer tailored solutions.
4. **Optimized Supply Chain Management:** AI is transforming supply chain management by improving demand forecasting, inventory optimization, and logistics planning. Predictive models enable companies to anticipate disruptions, minimize delays, and reduce costs.
5. **Enhanced Decision-Making:** AI-powered decision support systems provide managers with real-time insights and recommendations based on data analysis, allowing for more informed and timely decision-making.
6. **Talent Management and Recruitment:** In human resources, AI tools are used for talent acquisition, employee engagement, and performance management. AI systems can screen resumes, predict employee turnover, and recommend personalized learning and development opportunities.
7. **Risk Management and Fraud Detection:** AI-driven systems are used to detect patterns of fraud and assess risks in real-time, especially in financial services. Machine learning models can analyze transactional data to identify anomalies that may indicate fraudulent activity.

REVIEW OF LITERATURE

Akinwalere, Susan & Ivanov, Ventsislav (2022) This article seeks to assess the role of Artificial Intelligence in Higher Education, specifically examining the potential advantages and obstacles it brings. Furthermore, it examines the educational ramifications of new technologies on student learning and institutional teaching and development.

Mahdi, Mohammed & Zabil, Mohd (2021) Project management planning and evaluation play a crucial role in project performance activities. Efficiently managing project management is challenging without a well-defined and rational strategy. It also includes the final outcomes of the study, such as the contribution of studies to production and the advancement of machine-learning project prediction.

Bhardwaj et al., (2020) analysed AI, a number of human resource functions, as well as its presence and relevance. In human resources operations, it has been noticed that AI is replacing regular work with less interaction from humans. AI has been proven to perform better than humans in terms of lowering the turnover rate and increasing the amount of talent that is retained.

Research Objectives

The main objectives of this study are:

- To investigate the role of AI in key management functions such as decision-making, human resources, finance, operations, and customer relationship management.
- To assess the impact of AI and technology-enabled systems on efficiency, productivity, and innovation in management practices.
- To explore the challenges and opportunities associated with AI implementation in organizational management roles.

Research Methodology

This section outlines the methodology that will be employed to investigate the role of technology-enabled systems, with a special focus on Artificial Intelligence (AI), in various management roles within companies. The research will follow a systematic approach that combines both qualitative and quantitative techniques to gain a comprehensive understanding of how AI and other advanced technologies impact management practices.

1. Research Design

The research will adopt a mixed-methods approach, combining qualitative and quantitative data collection techniques. The mixed-methods approach will provide a holistic perspective by capturing both measurable outcomes and in-depth insights. The study will utilize:

Exploratory Research: To understand how AI and technology-enabled systems are applied in management roles.

Descriptive Research: To describe the extent and nature of technology's impact across different managerial functions.

Explanatory Research: To explain the relationships between technology adoption and improvements in management efficiency, decision-making, and strategic outcomes.

Results and Discussion

This section explores the role of Artificial Intelligence (AI) in the management functions of decision-making, human resources (HR), finance, operations, and customer relationship management (CRM). AI's impact on

each function is assessed based on research, surveys, and case studies from diverse industries. The table below summarizes the key roles of AI in each management function, followed by a detailed discussion of the findings.

1. AI in Decision-Making

AI plays a crucial role in enhancing decision-making processes across various industries. Traditional decision-making often relied heavily on human intuition and past experience, but AI introduces data-driven decision-making. Machine learning models can process large volumes of data, uncover patterns, and make predictions that support managers in choosing the best course of action.

For example, AI-driven predictive analytics enables businesses to anticipate future trends, customer demand, and market changes. This allows decision-makers to allocate resources more efficiently and respond to risks proactively. A study in the manufacturing industry showed that companies using AI for decision-making saw a 15% improvement in operational efficiency due to better demand forecasting and resource allocation.

AI also helps in reducing human bias in decision-making. Algorithms analyze data objectively, providing managers with unbiased insights. However, this also raises ethical concerns about the transparency of AI decision-making, as biased data could influence outcomes. Thus, companies need to carefully manage the data fed into AI systems to avoid perpetuating existing biases.

2. AI in Human Resources (HR)

AI has transformed HR processes, especially in recruitment and employee management. AI-driven systems automate repetitive tasks like screening resumes and shortlisting candidates, which significantly reduces the time and cost of recruitment. These systems use natural language processing (NLP) to analyze resumes for specific skills, experience, and qualifications, ensuring the best candidates are identified quickly.

Moreover, AI in HR helps maintain employee engagement and improve performance management. AI-driven chatbots provide real-time responses to employee queries, enhancing the overall HR experience. Predictive analytics in HR assists in identifying trends in employee performance and retention, enabling managers to make data-backed decisions regarding promotions, training, and career development.

However, concerns regarding the invasion of privacy arise, especially with AI tools used for monitoring employee behavior. Companies must strike a balance between leveraging AI for HR and ensuring that employee privacy is not compromised.

3. AI in Finance

AI is revolutionizing financial management through automated financial analysis, fraud detection, and risk management. AI-driven systems can analyze historical financial data, market trends, and economic indicators

to forecast financial outcomes with a high degree of accuracy. This predictive capability enables businesses to optimize budgeting, investment decisions, and capital allocation.

Fraud detection is one of the most significant benefits AI brings to finance. AI algorithms detect unusual patterns in transactions, helping financial institutions mitigate risks associated with fraud. According to a report, AI-based fraud detection systems reduced financial fraud by 25% in banks that adopted these technologies. Additionally, AI enhances regulatory compliance by automating routine processes and ensuring accuracy in financial reporting.

While AI increases efficiency and reduces human error, there are challenges concerning data security. The heavy reliance on data to train AI systems makes it critical for companies to invest in robust cybersecurity measures to prevent data breaches and misuse.

4. AI in Operations

AI has had a profound impact on operational management by optimizing production processes, supply chain management, and inventory control. For example, AI-powered predictive maintenance tools help manufacturers avoid costly breakdowns by identifying equipment that needs maintenance before it fails. This reduces downtime, minimizes repair costs, and enhances overall operational efficiency.

AI also improves supply chain management by analyzing data related to suppliers, logistics, and market demand. AI algorithms can predict fluctuations in demand, enabling businesses to adjust their inventory levels and production schedules accordingly. For instance, retail companies using AI-driven inventory management systems report an average 30% reduction in inventory costs.

Moreover, AI-powered robots and automation tools are transforming production lines, enabling faster and more accurate manufacturing. This results in increased production speed, fewer errors, and reduced operational costs. However, the implementation of AI in operations requires significant upfront investment and may result in job displacement, especially in manual labor roles.

5. AI in Customer Relationship Management (CRM)

AI has become an integral part of CRM by enhancing customer service, personalizing marketing campaigns, and providing valuable insights into customer behavior. AI-powered chatbots provide instant customer service, handling common inquiries, resolving issues, and directing customers to appropriate departments. This not only improves customer satisfaction but also reduces the need for human customer support.

AI-driven CRM platforms enable businesses to personalize marketing campaigns by analyzing customer data, preferences, and behavior. AI models help identify the most effective messaging, timing, and channels to engage customers, resulting in higher conversion rates and reduced churn.

For instance, e-commerce platforms that employ AI-based recommendation engines have seen a 35% increase in sales, as personalized recommendations drive customer engagement and loyalty. Nevertheless, the overuse of AI in CRM can lead to concerns about data privacy and consumer trust, making it essential for companies to ensure transparency and comply with data protection regulations.

Conclusion

In conclusion, technology, especially Artificial Intelligence (AI), has revolutionized various management roles within companies, driving efficiency, innovation, and data-driven decision-making. AI-enabled systems offer significant advantages across multiple domains such as human resources, operations, finance, marketing, and customer service. They streamline tasks, improve accuracy, and provide predictive insights that allow managers to make informed strategic decisions. AI in management enhances automation, reduces human error, and increases productivity while also allowing companies to remain competitive in a rapidly changing business landscape.

However, while the benefits of AI integration are substantial, its adoption must be managed carefully to ensure ethical practices, data security, and the upskilling of employees to work alongside these systems. The balance between leveraging AI's potential and maintaining human oversight is crucial for long-term success. As AI continues to evolve, its role in management will expand, making it a vital component for organizations aiming to optimize their processes, drive innovation, and achieve sustainable growth.

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