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An analysis of the impact of artificial intelligence on business

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Abstract

Artificial intelligence (AI) implementation has become a disruptive force in many industries, transforming how we view and use technology. An overview of recent developments, difficulties, and applications in the field of AI implementation is given in this abstract. The exponential rise in computer power and data availability has accelerated the development of AI. Advancements in image identification, natural language processing, and reinforcement learning have been made possible by machine learning approaches, particularly deep learning. These developments have made it possible to create AI-powered systems that are capable of independent decision-making and problem-solving. The application of AI is not without its difficulties, though. Bias, accountability, and transparency in AI decision-making are now hot topics for ethical discussion. It's still extremely important to protect the security and privacy of private information used to train AI algorithms. Furthermore, because explaining ability is crucial in some domains, the adoption of complicated AI models is hampered by their lack of interpretability. The use cases for AI implementation are numerous and varied. AI supports tailored treatment plans, drug discovery, and diagnostics in the healthcare industry. It helps with algorithmic trading, risk assessment, and fraud detection in finance. Manufacturing-related industries gain from AI-driven automation, which improves production processes and preventive maintenance. Additionally, chatbots and virtual assistants powered by AI are transforming customer service and improving user experience. Interdisciplinary cooperation between engineers, ethicists, policymakers, and domain specialists is becoming important as AI implementation moves further. It takes a team effort to address issues with bias reduction, interpretability, and data privacy. To ensure the proper and moral use of AI technologies, standards and laws must be set. In conclusion, AI implementation has developed into a key factor influencing our technological landscape. While innovations continue to push the envelope, issues with ethics, transparency, and security need to be watched carefully. Applications of AI across industries promise enhanced decision-making, increased productivity, and creativity. To maximize the benefits of AI while minimizing the hazards that come with it, a comprehensive strategy incorporating several stakeholders is necessary.

Keywords: AI, chatbots, virtual assistants, AI algorithms

1. Introduction

The emergence of Artificial Intelligence in recent years has elicited a plethora of contentious opinions. The CEO of IBM, Ginni Rometty, contends that artificial intelligence (AI) technologies serve as tools to enhance human intelligence. She posits that these technologies foster a collaborative relationship between humans and machines, ultimately leading to improved performance and enabling individuals to excel in tasks that align with the unique capabilities of the human condition. In contrast, Stephen Hawking expressed the viewpoint that the advancement of complete artificial intelligence has the potential to bring about the demise of the human species (Cellan-Jones, 2014) ^[21]. Similarly, Bill Gates has voiced concerns regarding the peril posed by Artificial Intelligence, urging people to be apprehensive. The integration of artificial intelligence (AI) into business processes can yield several advantages. Predictive analytic solutions are predominantly driven by machine learning (ML) and artificial intelligence (AI) tools, as highlighted by Hazen *et al.* (2014) ^[21]. These solutions are effectively utilized for managerial or marketing objectives, such as the development of novel corporate strategies or the examination of customer behavior, as discussed by Malthouse *et al.* (2013) ^[23]. The primary obstacle is to the study techniques and algorithms derived from conventional methodologies, with the objective of implementing artificial intelligence (AI) in the realm of business, with the aim of diminishing the disparity

between human intellect and AI capabilities (Kumar & Thakur, 2012) [22]. The integration of mathematical, statistical, and optimization methodologies with artificial intelligence (AI) practices has the potential to generate intelligent environments capable of reshaping organizational structures, processes, and services.

The absence of a universally agreed-upon definition for artificial intelligence is a prevailing characteristic throughout the field. Machine learning is commonly defined as the capacity of a computational system to acquire knowledge through experience, adapt to novel inputs, and execute tasks in a manner that resembles human performance. The terminology of artificial intelligence (AI) and AI systems was initially developed during the 1950s. Subsequently, the field of artificial intelligence has seen periods of advancement and setbacks, sometimes referred to as "AI springs" and "AI winters" respectively. The accelerated progress of Big Data technologies, such as enhanced computational storage capacity and high-speed data processing machines, has led to a resurgence of interest in Artificial Intelligence (AI) due to the accessibility and potency of Big Data.

According to Whit Andrews, Vice President and senior analyst at Gartner, organizations that are utilizing the latest AI systems may encounter the typical challenges associated with untested and unfamiliar technologies. Nevertheless, the initial artificial intelligence (AI) initiatives provide significant insights and viewpoints for enterprise design and technology innovation leaders who are initiating pilot projects and more structured AI endeavors. There has been a notable surge in scholarly inquiry about the examination of managers' cognitive and behavioral responses to artificial intelligence in recent times (Cao *et al.*, 2021; Tong *et al.*, 2021) [24, 27]. Nevertheless, the correlation between the technological tools employed in the realm of business and the perceptions held by managers remains inconclusive and unclear. Several empirical investigations have reported a favorable correlation between them (Beare *et al.*, 2020) [25], while others have found no significant relationship (Tarafdar *et al.*, 2010) [26] or even a detrimental effect. According to Prentice *et al.* (2019) [28], artificial intelligence (AI) exerts a significant moderating influence on the work performance and efficiency of managers, as well as on the overall performance of organizations.

The World Economic Forum (WEF) has conducted a probabilistic research to evaluate the economic implications of AI and automation. According to their findings, it is projected that AI technologies might potentially affect approximately 20% of the current labor market in the United Kingdom. The prevalence of this phenomenon is more pronounced in rising economies, particularly in China and India, where the percentage increases to 26% as a result of the expanded opportunities for technical advancements within the manufacturing industry. According to a report by the World Economic Forum in 2018, it is projected that AI technologies will play a significant role in fostering innovation and stimulating economic growth. This is anticipated to result in the creation of over 133 million new employment opportunities worldwide by the year 2022. Furthermore, within China, AI is expected to contribute to almost 20% of the country's Gross Domestic Product (GDP) by the year 2030. According to IDC's report in 2019, the expenditure on AI technology in Europe witnessed a significant growth of 49% compared to the previous year,

resulting in a total expenditure of \$5.2 billion. According to a report by Juniper Research (2019), it is projected that the expenditure on artificial intelligence (AI) technology in the consumer retail industry will reach \$12 billion by 2023. This represents a substantial increase from the current amount of \$3.5 billion.

2. Methods

This study has been conducted using a systematic literature review methodology. Search engines such as Scopus have been employed for the purpose of identifying contemporary research. In our search for publications, we have utilized various combinations of the following keywords: artificial intelligence, business model innovation, and digital transformation. The article selection process is delineated into three primary stages, as elucidated by Reim (2015) [5], with the aim of comprehensively identifying pertinent information.

The initial step was conducting a Scopus search using certain keyword combinations, which yielded a total of 468 articles. This search was then supplemented with the berry-picking process. This suggests that the acquisition of knowledge within a particular topic is progressively enhanced during the course of information retrieval. This phenomenon also contributes to an enhanced comprehension of the interconnections between various subjects, so resulting in a more comprehensive perspective of the review. This approach is more suitable for the literature review given the limited availability of high-quality papers in reputable journals. It involves incorporating select findings from several publications to fulfill the research objective.

Step 2: In the course of conducting information retrieval, we implemented two sequential sorting procedures to ascertain the inclusion of articles with superior quality information that aligned with our specific objectives and requirements. The analysis encompassed an examination of the title and abstract sections of the articles, wherein keywords and pertinent material were scrutinized. Furthermore, the AI screening process in 2022, specifically AI 182, incorporated an evaluation of pertinent scholarly publications, publication dates, citation counts, and expert assessments. As a consequence of this procedure, the number of pertinent papers was reduced to 89.

Step 3 involved conducting a final screening process to identify articles that were deemed valuable for inclusion in the literature review. The primary objective of this screening was to ascertain the relevance of the articles in relation to the research's purpose.

3. Literature Review Findings

The existing body of research in the field of AI business models focuses on identifying and analyzing the various problems, possibilities, and prerequisites that are essential for the effective deployment of AI technologies. The investigation of research in the fields of BMI and digital transformation aims to enhance comprehension of the methods by which difficulties can be addressed, opportunities can be seized, and necessary conditions can be met. The presentation of our findings is structured as a four-step roadmap, wherein each step should be executed sequentially in order to effectively integrate artificial intelligence. The four steps can be conceptualized as follows: (1) Gaining a comprehensive understanding of

artificial intelligence (AI) and the organizational capabilities required for successful digital transformation. (2) Assessing the current business model (BM), identifying the potential for business model innovation (BMI), and recognizing the role of the business ecosystem in this process. (3) Cultivating and enhancing the necessary capabilities to effectively implement AI within the organization. (4) Achieving organizational acceptance of AI and fostering the development of internal competencies to support its implementation.

This section will provide a detailed explanation of the four phases, drawing on relevant literature from many domains. Gaining a comprehensive understanding of artificial intelligence (AI) and the requisite organizational capabilities necessary for successful digital transformation is of paramount importance. The rapid advancement of AI applications in technology is occurring, and the comprehensive consequences of this progress remain uncertain. It is probable that AI systems will engage in acts that are unpredictable for the operator. Therefore, we contend that it is imperative to include an assessment of the potential dangers and opportunities associated with the use of artificial intelligence as the initial phase. Moreover, it is imperative to convert these results into organizational competencies that can effectively support and manage the risks inherent in the implementation process.

3.1.1. Challenges When Implementing AI

The primary objective of research in the field of AI technologies is to create an autonomous machine that possesses human-like characteristics and is capable of emulating our cognitive capabilities. In other terms, artificial intelligence (AI) can be characterized as a facet of cognitive ability that exhibits heightened efficiency and enhanced capacity for information processing in comparison to human beings. This provides a valuable instrument that has the capability to detect and resolve abstract and intricate problems. Nevertheless, this also encompasses potential hazards and obstacles. Based on the comprehensive analysis of relevant scholarly sources, we have identified many key difficulties that warrant attention. These challenges include the need for openness in AI systems, the prevailing lack of trust among employees towards AI, the persistence of analog processes, and the prevalence of misunderstandings around AI. Transparency is not an autonomous technological entity that can be deployed as a standalone function. Alternatively, artificial intelligence (AI) can be conceptualized as a comprehensive phrase including a diverse array of technologies. Deep learning, machine learning, and neural networks are all domains that heavily depend on algorithms for data processing. However, they operate at varying degrees of complexity and abstraction [LeCun, Y 2015] ^[2]. The intricate integration of many processes and the varying degrees of abstraction hinder the ability to trace and understand the inner workings of a system, commonly known as the black-box problem (Besold, T.R *et al.*, 2017) ^[3]. Wortham *et al.* (2016) ^[14] argue that the task of attaining a high level of transparency and interpretability poses a significant barrier in the development of intelligent systems. If the built models are found to be wrong or inadequate, it is quite probable that the system will have detrimental effects on corporate operations. The absence of trust in artificial intelligence (AI) among employees is closely linked to the issue of

transparency, which in turn significantly influences organizational behavior, including trust and the perception of agency. Put differently, humans exhibit a reduced inclination to place faith in an artificial intelligence (AI) application when they lack comprehension of its operational mechanisms. Trust can be associated with the technology per se, as well as with the innovative organization and its capacity for effective communication. Additionally, it is imperative to establish trust among individuals within an organization in order to effectively address and minimize opposition during the process of business transformation (Johansson, N *et al.*, 2019) ^[17]. Analog processes refer to methods or systems that involve the use of continuous signals or physical quantities to represent and transmit information. The use of artificial intelligence (AI) sometimes necessitates the utilization of digital procedures. The acquisition of data processes is of paramount importance as artificial intelligence algorithms necessitate substantial quantities of high-quality data.

Therefore, it is necessary to convert analog processes in order to facilitate the capture of digital content. Artificial Intelligence (AI) in the year 2020, The presence of inadequate data sets will result in a direct and adverse effect on the output, commonly known as the trash in-garbage out phenomenon. Misconceptions Regarding Artificial Intelligence. The intricate characteristics of artificial intelligence (AI), specifically the black-box problem, impede comprehensive comprehension of AI applications and their functioning (Wortham, R.H *et al.*, 2016) ^[14]. There is a positive relationship between mutual understanding and cooperation, which plays a pivotal role in the successful execution of digital transitions in enterprises [LeCun, Y 2015] ^[2]. Hence, we contend that a significant hurdle at the implementation stage lies in the mutual interpretation of the technology, encompassing both the AI's capabilities and its potential domains of application.

3.1.2. Key Organizational Capabilities

When implementing artificial intelligence (AI) In order to leverage artificial intelligence (AI) as a catalyst for digital transformation, organizations are required to cultivate distinct competencies and attain a particular level of maturity. The extant literature characterizes these capabilities as strategic, technical, data, and security capabilities (Brock, 2019) ^[8]. Insufficient cultivation of certain capacities, particularly those pertaining to the cultural dimension of the transition, may diminish the likelihood of successful implementations or curtail the potential of artificial intelligence. In their study on organizations that have effectively used artificial intelligence (AI), commonly known as DX leaders, Brock and Wangenheim (2019) ^[8] identified digital strategies as a prevalent competency. These methods exhibit digital processes, such as sourcing, production procedures, or performance appraisals. Digital business strategies are characterized by their scope, which refers to the range of offers that expands when digital technologies are employed. Consequently, organizations must adopt a systematic strategy to effectively create and capture value in this context [Helfat, 2014] ^[16]. In addition, it is essential for digital business strategies to possess the ability to swiftly expand or contract operations, given the elastic nature of software resources. Hence, it is imperative for the firm to possess the capability to swiftly adjust to fluctuations in

demand in order to effectively harness the opportunities presented by digital applications. Therefore, the significance of organizational agility is underscored by the presence of scaling opportunities. The significance of data capabilities lies in the establishment of a resilient framework for the acquisition, organization, and analysis of data [Brock, 2019]^[8]. In order to establish a sustainable data structure, organizations often find it necessary to either reconstruct their existing network or implement a new network, with the primary objective being to maximize access to unprocessed data. The impact of security capabilities on the success of digital transformation is widely recognized in organizational literature [Helfat, 2014]^[16]. The acquisition of extensive data sets and access to information pertaining to customers, employees, or suppliers by companies underscores the significant issue of data security. Moreover, the introduction of artificial intelligence (AI) into many systems and processes may potentially complicate the management of sensitive data, particularly when there is a lack of transparency. Therefore, the acquisition of cybersecurity skills is crucial in the implementation of artificial intelligence. According to Johansson (2019)^[17],

4. Roadmap for Implementation of Artificial Intelligence Business

The examination of theoretical notions pertaining to artificial intelligence (AI) as a catalyst for brain-machine interfaces (BMI) has yielded four significant breakthroughs. Theoretical notions encompass various areas of inquiry, including artificial intelligence (AI), body mass index (BMI), digital transformation, and business ecosystems. Therefore, the main points to be emphasized are as follows: (1) It is crucial to comprehend the concepts of artificial intelligence (AI) and the organizational capabilities required for successful digital transformation. (2) It is important to have a comprehensive understanding of the current business model (BM), the potential for business model innovation (BMI), and the role of the business ecosystem. (3) It is necessary to develop and enhance the necessary capabilities to effectively implement AI technologies. (4) Organizational acceptance and the cultivation of internal competencies are essential factors to consider in the process.

It is imperative to consistently take into account well-defined insights during the implementation and development of AI applications, as they should not be treated as isolated entities. The aforementioned observations will be connected to the issues that have been highlighted, including transparency, employees' lack of trust in AI, reliance on analog procedures, and misconceptions about AI. Furthermore, we will provide a more comprehensive elucidation of how these obstacles and dangers can be effectively alleviated by implementing the roadmap that we have offered. The visual representation illustrates the connections between the four-step roadmap and the identified problems.

4.1. Understand AI and Organizational Capabilities Needed for Digital Transformation

A comprehensive comprehension of the properties of artificial intelligence will serve as the fundamental basis for the development and execution of the approaching implementation strategy. The first phase of this process will mostly involve senior executives, as its objective is to develop a theoretical framework for the implementation of

artificial intelligence and assess the organization's capacities. It is vital to inquire whether there is a necessity to enhance or optimize existing skills. Is there a necessity to cultivate novel capabilities? The research emphasizes that the acquisition of data and the establishment of a robust infrastructure are fundamental elements for the effective deployment of artificial intelligence. Therefore, we propose the assessment of potential avenues for digitizing analog procedures, thereby facilitating extensive data acquisition. These efforts will effectively reduce the risks connected with the garbage in-waste out phenomenon. In addition, the challenge of transparency, also referred to as the black-box dilemma, is identified as one of the primary obstacles associated with artificial intelligence (Wortham, R.H.; *et al.*, 2016)^[14]. Conducting market research and engaging in research and development (R&D) inquiries can be quite beneficial for evaluating the potential hazards linked with artificial intelligence (AI). The establishment of clear definitions for risks and challenges will serve as a basis for making commitments that are intended to reduce the impact of identified hazards.

4.2. Understand Current BM, Potential for BMI, and Business Ecosystem

The concept of "role" refers to the position or function that an individual or entity assumes. Prior to the initiation of BMI, it is imperative to gain a comprehensive understanding of the existing processes involved in value creation, capture, and delivery. How is technology employed to enhance services and surpass client expectations? Technical uncertainty arises from the level of technological development and comprehension, while also being influenced by external market conditions (Chesbrough, 2002)^[19]. Therefore, the initial phase involves examining the existing state of customer connections and the mechanisms via which value is generated, acquired, and generated in order to gain a deeper comprehension of how technology progressions can enhance consumer contentment. However, it is inadequate to just comprehend the manner in which the focal organization establishes connections with its clients. According to Parida (2019)^[18], digital transformations typically rely on networks of collaborating companies rather than individual firms. Hence, it is imperative for the organization to comprehend its place within the ecosystem and ascertain its contribution to the ultimate product or service. This also encompasses the ways in which neighboring enterprises enhance the focus firm by leveraging certain talents and capabilities. The dissemination of findings should occur once senior management has attained a comprehensive comprehension of the prevailing business model, the possibility for business model innovation, and the position of the company within the ecosystem. This can consequently provide clarification regarding the applications and implications of AI, thereby mitigating potential misconceptions surrounding the technology. A strategic framework for the development of an artificial intelligence (AI) business model. Gaining a comprehensive understanding of artificial intelligence (AI) and the requisite organizational capabilities necessary for successful digital transformation. A comprehensive comprehension of the properties of artificial intelligence will serve as the fundamental basis for the subsequent formulation of the implementation strategy. The initial phase of this process will mostly involve senior executives,

as its objective is to develop a theoretical framework for the implementation of artificial intelligence and assess the organization's capacities. It is vital to inquire whether there is a necessity to enhance or optimize existing skills. Is there a necessity to cultivate novel capacities? According to Antonescu (2018) ^[19], the fundamental elements for achieving successful deployment of artificial intelligence (AI) are data collecting and infrastructure. Therefore, we propose the assessment of potential avenues for digitizing analog procedures, thereby facilitating the acquisition of comprehensive data. These efforts will effectively reduce the risks connected with the garbage in-waste out phenomenon. Moreover, the challenge of transparency, commonly referred to as the black-box dilemma, is identified as one of the primary obstacles associated with artificial intelligence (Hengstler, M.; 2016) ^[15]. Consequently, conducting market research and engaging in research and development (R&D) inquiries can prove to be advantageous for evaluating the potential hazards linked with artificial intelligence (AI). The establishment of clear definitions for risks and difficulties will serve as a fundamental basis for making promises that seek to minimize identified hazards. This analysis aims to comprehend the present state of business models (BM), explore the potential of business model innovation (BMI), and examine the role of business ecosystems in facilitating such innovation. Prior to the initiation of BMI, it is imperative to have a comprehensive understanding of the existing mechanisms via which value is generated, acquired, and distributed. How is technology employed to enhance offerings and surpass customer expectations? Technical uncertainty arises from the level of technological development and comprehension, while also being influenced by external market factors (Chesbrough & Rosenbloom, 2002) ^[19]. Therefore, the initial phase entails examining existing customer connections and the processes involved in delivering, capturing, and creating value in order to gain a deeper comprehension of how technological improvements might enhance customer satisfaction. However, it is inadequate to simply comprehend the manner in which the central organization establishes connections with its clients. According to Parida (2019) ^[18], digital transformations are typically not reliant on individual organizations, but rather on networks of companies that engage in collaborative efforts with a shared objective. Hence, it is imperative for the organization to comprehend its place within the ecosystem and ascertain its contribution to the ultimate product or service. This also encompasses the ways in which neighboring enterprises enhance the focus firm's operations through specific expertise and capabilities. The dissemination of findings should be carried out once senior management has attained a comprehensive comprehension of the prevailing business model, the possibility for business model innovation, and the involvement of the ecosystem. This can facilitate a comprehensive knowledge of the applications and implications of AI, hence mitigating potential misconceptions surrounding its usage.

The significance of feedback loops and consumer behavior evaluation becomes particularly evident when targeting new client categories or developing new services using AI applications. The firm's lack of experience in technology, the consumer sector, and the solution given should be taken into account, as it may result in increased risks. Therefore, it

is imperative to have ongoing communication in order to reduce ambiguity and acquire comprehension of the unfamiliar surroundings. Feedback loops will play a crucial role in the mitigation of hazards arising from misunderstandings of artificial intelligence (AI) in the foreseeable future.

4.3 Business Implications

This study examined the influence of artificial intelligence (AI) on organizational processes and management, thereby uncovering noteworthy business implications. Scholarly articles pertaining to this subject elucidate the methodologies employed in data-driven decision making, process mining, and automation. The utilization of artificial intelligence (AI) has been employed in the execution of Decision Support Systems (DSS) for several decades, as evidenced by Turban's work in 1988. This application of AI has demonstrated its efficacy in facilitating the generation of knowledge through the conversion of unprocessed data into practical and actionable information. According to Davenport (2018) ^[30], artificial intelligence (AI) has the potential to bring about positive changes within organizations through three primary avenues. Firstly, AI can automate administrative, financial, and bureaucratic tasks by employing Robotic Process Automation. Secondly, it can uncover latent patterns within data and assist managers in deciphering their significance. Lastly, AI can enhance emotional engagement among employees or customers by leveraging chat-boxes and other human-like interactions. From this viewpoint, artificial intelligence (AI) assumes the role of facilitating the collaboration between humans and machines. This enables researchers to provide instructions to sophisticated machines by utilizing AI to articulate judgments that demand complex cognitive abilities, which were previously deemed unattainable (Mahroof, 2019) ^[35]. However, it is not unusual to witness instances where the responsibility of decision making is delegated to highly capable artificial intelligence systems, which have been extensively trained and do not require final authorization from humans. One further business effect resulting from the utilization of artificial intelligence (AI) is the capacity to implement Expert Systems (ES). These systems possess the capability to replicate human reasoning and elucidate the underlying criteria employed to arrive at specific findings. Furthermore, an additional business implication that has been addressed in the existing literature on this subject pertains to the increasing significance of process mining. Process mining refers to the utilization of artificial intelligence (AI) to deduce valuable trends, patterns, and opportunities for enhancing the efficiency of business processes by analyzing log data (Zhang *et al.*, 2020) ^[41].

4.4 Human Implications

Artificial intelligence (AI) has the potential to facilitate the digital transformation of Human Resource Management (HRM) within organizational settings. By influencing HRM methods and environments, AI can enhance the effectiveness and efficiency of HR activities, resulting in improved time and cost management. Moreover, AI can contribute to the overall quality of HR tasks, serving as a valuable complement to human labor (Zehir *et al.*, 2020) ^[39]. Additional potential can be recognized in the utilization of artificial intelligence (AI) for the analysis of large datasets, namely in the automation of service-desk business

procedures (Lo *et al.*, 2019). Managers are confronted with ongoing challenges in the face of the ever-evolving technology and business landscapes, necessitating their ability to generate knowledge and cultivate internal competencies (De Mauro *et al.*, 2019) ^[32]. Artificial intelligence (AI) has garnered significant recognition as a facilitator of business operations, since it enhances individuals' productivity and reduces project execution costs (Shankar, 2012) ^[36]. Furthermore, as previously emphasized in section 5.1, artificial intelligence (AI) serves as a valuable asset in managerial decision-making, aiding human judgment and facilitating strategic, planning, implementation, and operational processes. The emergence of data science and artificial intelligence (AI) as a crucial undertaking (Davenport, 2020) ^[31] has compelled organizations to reconsider their structure by incorporating new specialized roles that prioritize data, such as Data Scientists, Data Analysts, Analytics Developers, and Big Data Systems Engineers (De Mauro *et al.*, 2019) ^[32]. Numerous ethical dilemmas have emerged, mostly centered around the dynamic interpretation of Privacy and the choices that organizations may contemplate regarding the extent to which they should test the limits of data boundaries and intrude into the personal lives of individuals (Corea, 2016) ^[29].

4.5 Industrial Applications

The complete understanding and widespread implementation of artificial intelligence (AI) in industrial applications have not yet been achieved by organizations, as managers continue to face challenges in recognizing and facilitating the necessary organizational, cultural, and technological factors. Within the scope of this topic, various studies have been conducted to explore the applications of artificial intelligence (AI) in different sectors. Specifically, the medical sciences field has seen significant advancements in AI applications, including the treatment of diseases such as cardiology and radiology. Additionally, AI has been utilized in neuroscience research. In the context of preventing the spread of epidemics, AI has been employed as a tool to protect healthcare workers and control dissemination, as observed in the recent COVID-19 pandemic. The chemical industry, particularly in the field of pharmacy, has also benefited from AI applications. Furthermore, AI has found its place in social sciences, with its applications being explored in politics, marketing, and finance. Moreover, artificial intelligence (AI) facilitates prospects in the procurement procedures and supply models throughout the supply chain. It also plays a significant role in formulating pricing strategies as well as in product creation and scheduling.

Conclusion

The proliferation of technological developments and the continuous growth in the field of artificial intelligence (AI) research have generated a heightened level of interest among many sectors and organizations. However, a lack of comprehensive comprehension regarding the use of artificial intelligence (AI) applications leads to restricted economic benefits. The objective of this paper is to enhance comprehension regarding the deployment of artificial intelligence (AI) by conducting a comprehensive review of research in the fields of AI, brain-machine interfaces (BMI), and digital transformation. By drawing upon relevant

literature on AI research in the business domain, we have enhanced our comprehension of the obstacles associated with the adoption of AI. Additionally, an examination of scholarly literature pertaining to digital transformation and body mass index (BMI) is conducted with the aim of enhancing comprehension regarding the strategies employed to alleviate identified dangers. The four primary key points can be categorized as follows: (1) acquiring knowledge about artificial intelligence (AI) and the necessary organizational capacities for digital transformation; (2) comprehending the existing business models, the potential for business model innovation (BMI), and the role of the business ecosystem; (3) cultivating and improving the necessary abilities to effectively implement AI; and (4) attaining acceptance within the organization and developing internal competencies. The literature study presents four key findings that can serve as a valuable framework for assessing potential applications of artificial intelligence. There is significant variation in organizational character and desirable circumstances among organizations, resulting in distinct designs for implementation phases. However, the advent of artificial intelligence (AI) is poised to fundamentally transform the landscape of company operations, necessitating a reevaluation of traditional business models. In order to thrive in this new era, it is imperative for organizations to prioritize innovation in their business models, particularly those that are founded upon AI technologies. The paradigm described in this study is of a general nature and may be applied to a diverse variety of organizations, regardless of their specific characteristics such as their function in the business ecosystem, size, or industry affiliation. Hence, the adequacy of existing research in the field of artificial intelligence can be deemed inadequate. The aforementioned approach may be constrained in its use within certain settings, hence impacting its overall effectiveness. In order to enhance comprehension of artificial intelligence (AI) and the efficacy of AI implementations, it is important to go deeper into the subject matter.

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