Role of Artificial Intelligence in Business

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ABSTRACT

The purpose of this paper is to analyze how the development of artificial intelligence (AI) is causing shifts in today's business processes. Today's business environment is characterized by remarkable technological changes which have brought to the fore a new dimension of artificial intelligence (AI) as a crucial factor of innovation and competition in every industry (Haan, 2023). This paper also reviews the level of advancement of current AI technology the extent to which this technology is being utilized and its consequences in businesses around the world (McGinnis, 2020).

Keywords: *Artificial Intelligence in Business, Challenges, Advantages, Transformation, Industry*

1. INTRODUCTION

The impact of artificial intelligence in business, according to Accenture, has the potential to increase productivity by 40 per cent or more (Guenole, 2021). According to World Economic Forum statistics on the impact of AI, over 75 million human jobs will be replaced by AI, creating 133 million jobs, dispelling the myth that AI adoption will result in more job losses (Thormundsson, 2023). Although the acceptance of AI in modern society is recent, the idea is not. The term 'artificial intelligence' was initially coined in the year 1956, the present area of artificial intelligence (AI). It has been recognized that it takes decades of effort towards the goal of constructing an automotive or self-thought system or achieving technological reality at least (Eliacik, 2022). Artificial intelligence is used in several ways in an organization for its growth and expansion. Many of us are interacting with AI more than often yet without realizing the interaction (Burrows, 2021). To stay competitive, companies are increasingly relying on AI technologies (Fares, 2022). This paper deals with the adoption of AI technologies by various businesses, their contribution towards enhancing decision-making and operational activities as well as relationships with customers, and the overall strategic positioning of companies in modern realities with the accompanying obstacles and prospects for development (Mehra, 2021).

"Within a nearer era, appropriately used, AI might boost the output capital over 40% for the simple reason that people management brings many inefficiencies."(Guenole, 2021)" 75 million worth of jobs will be lost by AI, yet there will be 133 million that would be newly created." (Thormundsson, 2023) "AI is now crucial for firms to remain relevant in competition. "AI is and will continue changing, for the better, how firms make decisions, execute business processes, and relate with their customers." (Mehra 2021)

2. LITERATURE REVIEW

The historical background of Artificial Intelligence in business is an interesting story, which has revolved over the years and is characterized by great events and transformations (Cremer, 2021). The work of computer theorist Alan Turing was what led to the creation of many-sorted artificial intelligence in the mid-twentieth century (Edmondson, 2020). Nevertheless, it was not until the 1950s and 1960s that successful AI research began, simply because man wanted to build machines to think like humans (Trotta, 2023). Up to the last decades of the nineteenth and even the beginning of the twentieth century progress in AI was slow, mainly because of the general inability to advance the sphere of machine learning technology still evolving through the 1990s and 2000s (Eliacik, 2022). "In the tech industry, the KPMG report finds that 73% of respondents believe their organizations should be more proactive in AI investment and implementation" (Thormundsson, 2023).

Retailers like Target and Walmart have gained a significant financial edge through AI's early adoption (Mehra, 2021). AI is now needed for tasks like financial forecasting and supply chain management (Haan, 2023).

Identifying trends and challenges in AI integration within businesses is paramount to navigating the digital landscape. One prominent trend is the increased adoption of AI-powered automation (Pahuja, 2021). Businesses, on the other hand, face challenges in data privacy and security, necessitating strong safeguards (Perucica, 2022).
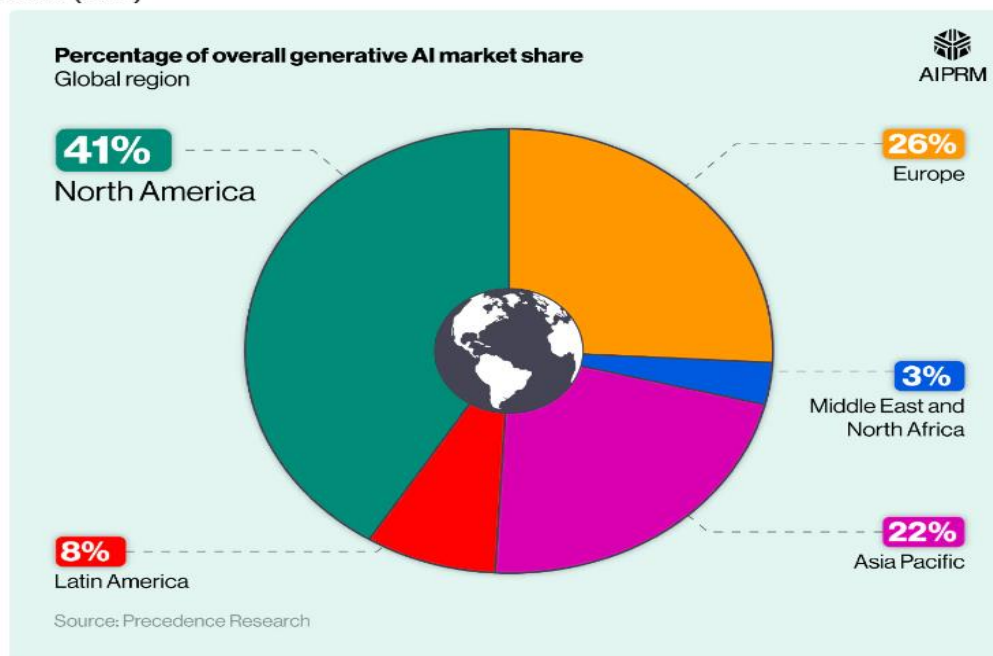
As observed in the literature, AI is reshaping the business landscape in profound ways. The technology's potential to enhance decision-making, operational efficiency, and customer engagement is well-documented. (Borges et al., 2021).

3. DISCUSSION

The use of AI in business operations has revolutionized decision-making, manager efficiency, and customer interaction within an organization. Productivity levels have increased significantly owing to intelligent automation, leaving people with time to concentrate on tasks which achieve higher value.

Nevertheless, there is the danger of business under-culture when AI is utilized as well. Some of the issues which need to be resolved by an organization in order to implement AI include guaranteeing the privacy and security of collected data, sources of ethical dilemmas created by management actions based on AI technology, and potential disruption in employment opportunities.

A breakdown of the regions with the highest percentage of the global generative AI market share (2022)

Percentage of overall generative AI market share
Global region
AIPRM

41% North America
26% Europe
3% Middle East and North Africa
22% Asia Pacific
8% Latin America

Source: Precedence Research

4. METHODOLOGY

This paper will review previous case studies and published articles to further understand the relevance and impact of AI in the business field (Fares, 2022). AI start-ups worldwide are categorized into 22 different fields, including autonomous vehicles, business intelligence, and healthcare (Cremer, 2021).

In a knowledge-based society, start-ups are considered the innovation and growth drivers of the economy (Pahuja, 2021). The top global AI start-ups are located in only 6.6% of the countries, with the U.S. leading this revolution (McGinnis, 2020).

5. THE IMPACT OF AI ON BUSINESSES

a) Enhanced Efficiency and Productivity

The automated use of AI is on the rise in business, and that is one of the most immediate effects of AI on business (Haan, 2023). In manufacturing, for instance, AI technology enables robots to perform even intricate assembly operations thus minimizing time and the chances of errors (Mehra, 2021).AI automation is not only reengineering very operational aspects of the business but also its processes of making critical business decisions. Owing to huge data processing and pattern-recognition capabilities, AI models are instrumental in business decision-making.

b) Data-Driven Decision Making

AI enables businesses to make data-driven decisions with unprecedented accuracy (Guenole, 2021). AI algorithms can identify patterns, trends, and insights that humans may overlook (Cremer, 2021).

c) Improved Customer Experience

Chatbots and virtual assistants provide 24/7 customer support, reducing response times and improving customer satisfaction (McGinnis, 2020). AI-powered recommendation engines also analyze customer behavior to offer personalized product recommendations (Haan, 2023).

d) Predictive Analytics

Predictive analytics powered by AI enables a rational view into future occurrences and shifts in customer behavior which provides an opportunity for the later on market changes (Fares, 2022). "Architecting market research and employing technological advancements further grows decision making processes within market research practice use of AI in market research. Predictive analytic process should be algorithmically sustained through AI thereby enhancing performance quantity and quality." Not all studies related to the use of AI tools for predictive analytics gives the same results. Nevertheless, several key points and generalizations can be extracted from the analysis of this body of literature. "A prominent benefit of artificial intelligence is in the area of accuracy as well as any other benefits enjoyed from using regression techniques on predictive analytics. AI has the capability to manage large quantities of data, to recognize complex and intricate patterns and connections that are often not possible through the conventional approaches. "With its increased efficiency, the need for manual labour is substantially reduced and the speed of decision-making is increased. With an AI-driven, regularly updated predictive analytics model, market researchers tap into public information platforms like social networking sites (SNSs), news portals, and peer-reviewed research journals to comprehend the changes in customer preferences and brand perception". "The crucial role of Artificial Intelligence lies in automating and revolutionizing market research practices, freeing up the workforce from mundane data operations and allowing them to focus on more creative projects. AI for market research provides real-time competitor data, sorts responses based on sentiment and offers predictive insights. However, it is essential to use AI and market research ethically, respecting surveyed individuals' privacy rights. While these tools are potent aids for business development, ethical considerations are non-negotiable."

e) Cost Reduction

Through automation and optimization, AI can significantly reduce operational costs (Thormundsson, 2023). In logistics, AI-driven route optimization can minimize fuel consumption and transportation costs. "According to some researchers, pharmaceutical companies have used every traditional opportunity for drug discovery, thereby having already picked the "low-hanging fruit," while further research efforts and the formation of stable cash flows require significant investments [1]. Current pharma companies have an unpredictable drug development pipeline and outdated business models that do not contribute to value creation [10]. Therefore, AI could increase efficiency and reduce drug discovery and development costs in the pharma industry."(Kulkov 2021)
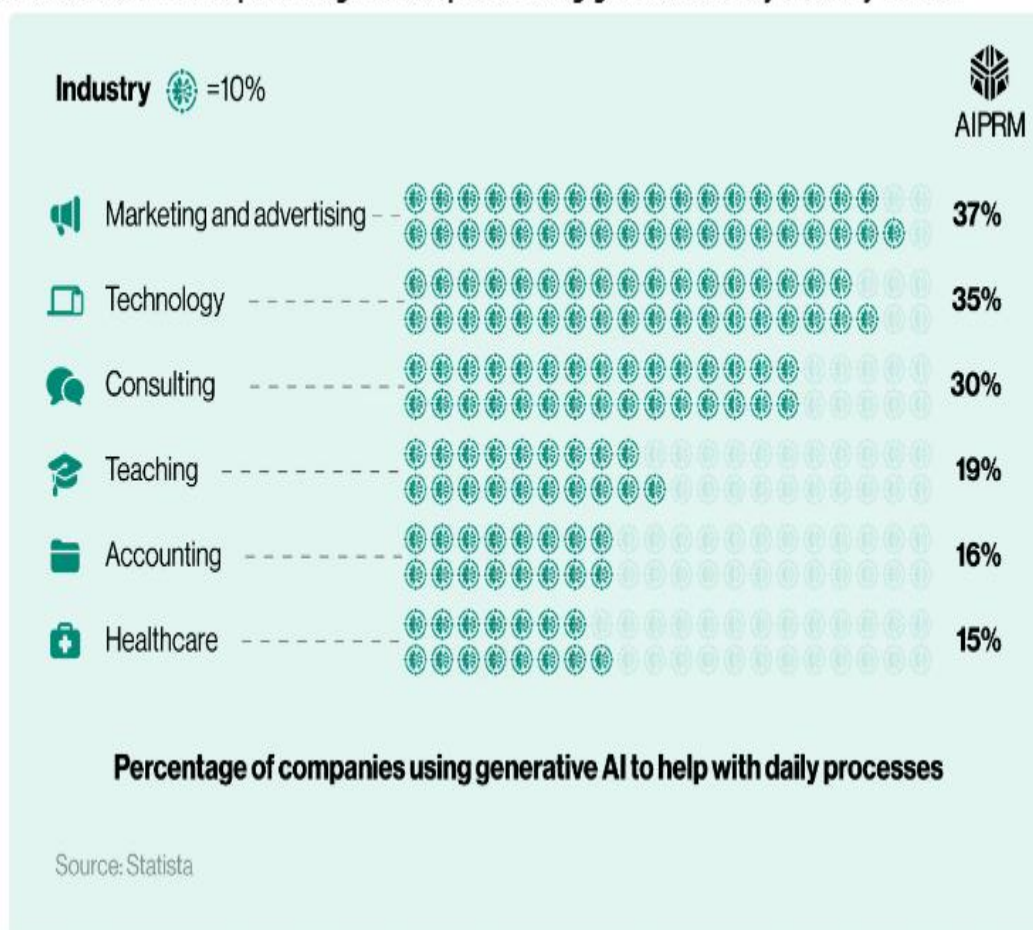
f) Enhanced Security

AI can bolster security measures by identifying potential threats and anomalies in real-time (Edmondson, 2020). Machine learning algorithms learn from past attacks to protect businesses (Cremer, 2021).

g) Competitive Advantage

Businesses that successfully implement AI gain a competitive advantage by offering better products and services (Guenole, 2021).

A breakdown of the percentage of companies using generative AI by industry in 2023

Industry ⊛ =10%   AIPRM

Marketing and advertising	37%
Technology	35%
Consulting	30%
Teaching	19%
Accounting	16%
Healthcare	15%

Percentage of companies using generative AI to help with daily processes

Source: Statista

6. ETHICAL ISSUES AND CHALLENGES

AI systems often require vast amounts of data to function effectively, and the collection, storage, and utilization of personal information can pose significant privacy risks (Thormundsson, 2023). Many AI systems are trained on data from the real world, which can carry inherent biases (Trotta, 2023).

(Stahl et al)

AI's impact on the job market is a topic of significant debate (Eliacik, 2022). Ethical considerations include providing support and training to those affected by AI-driven job displacement (McGinnis, 2020).

The findings of the study by Stahl et al provide some important insights: They confirm that "organisations making use of AI were not only aware of the ethical issues that these technologies can cause, but that they were willing to engage with and accept responsibility for doing something about them (Macnish et al. 2019a). At the same time, the organisations made use of only a limited subset of mitigation measures and focused on only a limited set of issues. Many of the ethical issues are seen to be either beyond the organisations' expertise or lie outside their remit. This confirms that organisations can—and already do—play an important role in addressing the ethics of AI, but that they are not (nor do they see themselves as) the only stakeholder. A broader framework is hence required that covers other stakeholders to ensure a more comprehensive coverage of AI ethics. The question of what exactly lies within the remit of organisations and which issues and measures are the responsibilities of policymakers, professional bodies, and regulators needs also to be addressed."

7. FUTURE TRENDS AND OPPORTUNITIES

AI-powered predictive analytics allows businesses to harness the power of data and uncover valuable insights (Pahuja, 2021). AI will also play a pivotal role in transportation with the rise of self-driving vehicles (Haan, 2023).

8. SUMMARY AND INFERENCE

This research paper explored the transformative impact of AI on contemporary businesses, reshaping decision-making, operational efficiency, and customer engagement (Guenole, 2021). AI technologies offer promising opportunities, and businesses must address challenges like data privacy and bias (Trotta, 2023). As AI continues to evolve, organizations that strategically integrate AI into their operations will gain a significant competitive edge., the insights presented here contribute to a better understanding of how AI is perceived and how it influences the way modern societies are run. Ethical and human rights issues are important factors in assessing AI's impact. AI raises ethical concerns, some of which can be straightforwardly addressed, but in many cases, these involve fundamental trade-offs. The question about the nature of these trade-offs, and how they are perceived and dealt with is at the core of the ethics of AI debate, but it closely involves political, legal and professional discourses.

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