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The Impact of Artificial Intelligence on Strategic Decision-Making in Corporations

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Abstract: **Artificial intelligence (AI) is increasingly being used in several parts of life. Artificial intelligence (AI) is when computers or machines are created to think and act like humans. With its data-driven insights, predictive analytics, and automation capabilities, artificial intelligence has changed company strategic decision-making. The latest trend is AI processors and smartphone apps. However, technology extends back to the 1950s, when the Dartmouth Summer Research Project on Artificial Intelligence was established at Dartmouth College in the United States. The beginnings may be traced back to Alan Turing, who created the famous Turing test, Allen Newell, and Herbert A. Simon. In 1996, IBM's Deep Blue chess computer defeated Garry Kasparov, catapulting artificial intelligence to global prominence. This study looks at the history of AI and how AI influences strategic decision-making processes in businesses, since AI-powered solutions may reduce costs and uncertainty, increase efficiency, and provide a competitive edge. Also, this study identifies critical elements that drive AI adoption using case study analysis and empirical data from diverse sectors, including data accessibility, business culture, and regulatory compliance. The findings show that, while artificial intelligence significantly enhances both the speed and precision of decision-making, its usefulness requires balance, knowledge, and ethical governance. This study adds to the ongoing conversation about employing AI to guide strategy and make decisions, which is critical for practice advancement and beneficial to both business executives and lawmakers.**

Keywords: **Artificial Intelligence, AI Adoption, Business Intelligence, Corporate Strategy, Organizational Performance, Predictive Analytics, Strategic Decision-Making.**

1. INTRODUCTION

Computer science and artificial intelligence have advanced significantly in recent years. AI systems, such as Chat GPT, Watson, Siri, and Deep Learning, increasingly provide services that need intelligence and creativity. Companies increasingly rely on artificial intelligence to make proper decisions, reduce human effort, streamline operations, and cut costs. Without a doubt, AI systems are incredibly useful, but they are going to eventually cause harm to humans. As the world gets more complicated, we must maximize our human resources, and high-quality computer systems may help. This also applies to applications requiring intellect. The flip side of the AI medal is that many people are afraid of the potential that a computer may be intelligent. Most people assume that intellect is unique to Homo sapiens. If intellect can be mechanized, what distinguishes humans from machines? The pursuit of creating a human-like replica is not a novel concept. Our predecessors were already interested in replicating and imitating ideas.

Artificial intelligence (AI) has emerged as the cornerstone of corporate strategy, altering how businesses make strategic decisions. As companies transition to a more digitalized environment, AI-driven decision-making has emerged as the

primary driver of organizational efficiency, agility, and innovation. AI has become one of the most popular subjects among businesses, and they are utilizing AI-based technologies to increase operational efficiency, provide better customer service, and maintain a competitive advantage. The AI helps with data-driven decision-making by analyzing vast amounts of organized and unstructured data, finding trends, and producing actionable insights with unparalleled speed and accuracy. If properly implemented, this change has the potential to alter corporate strategy by allowing businesses to make better-informed, proactive decisions while also reducing uncertainty and risk in unpredictable market situations. This relates to the application of artificial intelligence (AI) in tactical decision-making, such as financial forecasts, supply chain management, risk assessment, and workforce planning. AI algorithms assist CEOs in identifying new business trends, allocating resources more efficiently, and accurately predicting customer behavior. Organizations such as Amazon, Google, and Tesla have used AI to carry out strategic initiatives, increasing operational efficiency and creativity. Furthermore, AI-powered decision-making is not limited to large companies; small and medium-sized enterprises (SMEs) are increasingly implementing artificial intelligence technologies to improve their operations and compete successfully in fast-paced situations.

While the potential benefits of AI-powered strategic decision-making are significant, this capacity is not without obstacles. Issues with considerable ethical implications and transparency exist. AI systems rely on vast amounts of data, and if the data is biased, decision-making can be distorted, thereby increasing existing disparities. Furthermore, rising concerns about job displacement and the decision-making role of people in AI-enabled processes have sparked debate over whether this technology should be included in company goal statements or not. Many firms are employing a hybrid strategy that combines AI-based data insights with human-generated ethical judgments. The second key problem is the political climate around the employment of AI in the company. Regulators throughout the world are developing regulations to emphasize AI's ethical implications and give guidelines on its proper use in business decision-making. Businesses that use AI technology comply with data protection requirements such as the General Data Protection Regulation (GDPR). Furthermore, failure to do so should concern business executives, who must prioritize AI governance frameworks to reduce the dangers associated with installing AI that contradicts the organization's overall aims.

This study looks at how artificial intelligence capitalizes on possibilities and difficulties while offering a strategic perspective to corporate decision-making frameworks. This study aims to uncover the impact of AI on strategic planning, innovation development, and decision-making accuracy by reviewing case studies and empirical data. Furthermore, the study examines the obstacles of AI deployment, emphasizing the relevance of ethical elements and human-AI collaboration in business strategy. Finally, this study contributes to the topic of technology's revolutionary influence on business strategy in general, and AI's impact in particular, by giving insights for executives, regulators, and scholars alike.

Objectives of the Study:

1. To look at how artificial intelligence might help organizations make better strategic decisions.

Hypothesis:

1. H_0: Artificial intelligence might not help organizations make better strategic decisions.
2. H_1 Artificial intelligence might help organizations make better strategic decisions.

2. LITERATURE REVIEW

2.1 The Concept of Artificial Intelligence (AI)

McCarthy claims that early research into advanced computing programming and artificial intelligence was spurred by British mathematician Alan Matthison Turing's in 1947 [1]. Turing reframed the issue "Can machines think?" in his groundbreaking work "Computing Machinery and Intelligence" by proposing the Imitation Game, also known as the Turing Test, as a practical method of evaluating machine intelligence. "We should replace the question ['Can machines think?'] with another, which is expressed in relatively unambiguous words," Turing suggested, arguing that we should assess a machine based on its external behavior. Stanford University Professor John McCarthy, an American computer scientist, introduced the notion of artificial intelligence at the Dartmouth Conference in 1956. AI was initially based on two components, 1 knowledge (logic or rules), Earlier AI systems relied on rules. To make choices, they employed human-written if-then rules. Example: It may rain if the sky is dark. 2 using an Inference Engine to Reason. These systems might

make logical judgments or infer conclusions from the evidence by using the rules. If it is aware that "it might rain" and "you need an umbrella when it rains," for instance, it may advise bringing an umbrella. These two elements combined to create what is known as symbolic AI, or classical AI, which predominated during the 1950s and 1980s. In 1956, Marvin Minsky and John McCarthy hosted the Dartmouth Summer Research Project on Artificial Intelligence (DSRPAI) at Dartmouth College in New Hampshire, officially coining the term "artificial intelligence." This workshop, which marked the start of the AI Spring and was sponsored by the Rockefeller Foundation, brought together scientists who would eventually be regarded as the founding fathers of artificial intelligence. Participants included Nathaniel Rochester, a computer scientist who eventually created the IBM 701, the first commercial research computer, and Claude Shannon, a mathematician who pioneered information theory. The goal of DSRPAI was to bring together experts from many domains in order to establish a new research area focused on developing robots capable of simulating human intelligence [2].

Trappl distinguishes between "rationalist" and "empirical" approaches to science, with the former focusing on computer-based math and engineering and the latter on human experimentation and hypothesis-making [3]. According to Haenlein and Kaplan the origins of artificial intelligence may be traced back to 1942, when American Science Fiction writer Isaac Asimov released his short novel Runaround [2]. The premise of Runaround, a fiction about a robot constructed by the engineers Gregory Powell and Mike Donovan, revolves around the three laws of robotics. First A robot may not injure a human being or allow a human being to come to harm through inaction; Second A robot must obey human orders unless such orders conflict with the First Law; and Third A robot must protect its own existence as long as such protection does not conflict with the First or Second Laws. Asimov's work influenced researchers in robotics, AI, and computer science, including Marvin Minsky, who co-founded the MIT AI lab.

Alan Turing an English mathematician, developed the Bombe, a code-breaking machine, for the British government to decipher the Enigma code used by the German army during WWII [2]. The Bombe, measuring 7 by 6 by 2 feet and weighing almost a ton, is widely regarded as the first operational electro-mechanical computer. Turing was impressed by the Bombe's ability to break the Enigma code, which was previously unattainable for human mathematicians. This feat raised questions about machine intelligence. In 1950, he wrote the key paper "Computing Machinery and Intelligence," which outlined how to develop and evaluate intelligent devices. The Turing Test remains a standard for determining artificial intelligence. If a person can't tell the difference between a human and a machine while communicating, the machine is considered intelligent according to Turing.

2.1.1 Artificial Intelligence (AI) with Chronological Order

McCulloch and Pitts developed the first computational model of a neural network in 1947, illustrating how logic gates might be used to represent neurons [4]. This developed the theoretical basis for artificial neural networks. Alan Turing proposed the Turing Test in his 1950 work Computing Machinery and Intelligence, which asked, "Can machines think?". He established a formal method for assessing computer intelligence via human-machine interaction [5]. In 1955, McCarthy, Minsky, Rochester & Shannon wrote the Dartmouth Proposal, which formally used the phrase "artificial intelligence." They offered a summer research session to investigate technologies that simulate human intellect. This publication introduced AI as a field [6]. The 1956 Dartmouth Conference the first official AI conference was held at Dartmouth College. It brought together renowned scientists to discuss machine learning, logic, language, and problem solving. This marked the beginning of AI as a discipline [7]. In 1958, John McCarthy introduced LISP, the first programming language built particularly for artificial intelligence. Its symbolic processing capabilities made it perfect for early AI applications such as expert systems and theorem provers [8]. In 1966, Joseph Weizenbaum created ELIZA, a rule-based NLP chatbot that emulated a Rogerian psychotherapist. It emphasized the possibilities and limitations of early language comprehension programs [9]. Terry Winograd created SHRDLU in 1972, a system that allowed users to alter virtual blocks using natural language instructions. AI demonstrates a profound integration of language, perception, and action [10]. MYCIN, an expert system that used a rule-based engine to identify blood infections, was established in 1976 by Edward Shortliffe, it outperformed certain human doctors in terms of accuracy, demonstrating the promise of AI in medicine [11]. In 1997, IBM's Deep Bluebecame the first artificial intelligence to defeat a world chess champion (Garry Kasparov) with brute-force search and evaluation routines. A pivotal event demonstrating AI's prowess in strategic reasoning [12] . In 2012, Krizhevsky, Sutskever, and Hinton created AlexNet, a deep convolutional neural network that significantly improved picture categorization on ImageNet. sparked the present deep learning revolution [13]. DeepMind's AlphaGo defeated Go champion Lee Sedol in 2016, a feat previously thought impossible for AI owing to the game's complicated nature [14]. Deep learning was used with Monte Carlo tree

searches. Google AI (BERT) released BERT in 2018, a transformer-based model that dramatically enhanced machine language understanding by bidirectional processing text [15]. Define new benchmarks for NLP jobs. In 2020, OpenAI (GPT-3) introduced GPT-3, a huge language model with 175 billion parameters [16]. It was capable of producing very cohesive prose and displayed both few-shot and zero-shot learning. In 2022 EPFL and DeepMind – Fusion Control Reinforcement learning was used by AI to manage plasma in a nuclear fusion reactor, automating a task that was previously performed by scientists. First artificial intelligence to effectively manage fusion plasma in real time[17].

In 2023 DeepMind - AlphaDev.Reinforcement learning was used to develop quicker sorting and hashing algorithms, some of which were later included in the C++ standard library. AI demonstrated its capacity to optimize low-level software. DeepMind - RoboCatCreated a generalist robotic agent capable of learning numerous tasks across diverse robot types with little human data, mixing simulation and real-world training. Google's Med-PaLM and Med-PaLM 2 are language models trained for medical knowledge, attaining 86.5% accuracy on USMLE-style questions and demonstrating potential in clinical applications. DeepMind: GraphCastIntroduced a weather forecasting model that outperformed traditional approaches, allowing for more accurate and efficient 10-day predictions [18, 19].

In 2024, DeepMind - AlphaGeometry and AlphaProof solved 83% of challenging Olympiad-level geometry problems using language-guided formal reasoning. Symbolic logic and LLMs were used to demonstrate a profound mastery of mathematics. DeepMind - AlphaFold 3 improved AlphaFold to predict interactions between proteins, DNA, RNA, and ligands, which is critical for next-generation drug development and understanding biological systems. The EU's Artificial Intelligence Act established the world's first comprehensive AI regulatory framework, categorizing AI systems based on risk and enforcing transparency, accountability, and safety requirements throughout the EU. Google DeepMind - Gemini 1.5 and 2.0 included models with million-token context windows and "flash reasoning" capabilities, letting the machine to display its reasoning stages and execute sophisticated tasks with fewer hallucinations [19-22].

2.2 What Is Artificial Intelligence (AI)

According to McCarthy, Artificial intelligence (AI) is the science and engineering of creating intelligent devices, particularly computer programs. AI includes a variety of subfields such as machine learning, natural language processing, robotics, computer vision, and expert systems. It tries to replicate characteristics of human cognition so that robots can perceive, reason, and act in ways that are adaptable to difficult goals [1]. According to MIJWEL, Artificial intelligence refers to the development of machines that mimic human behavior without relying on organic organisms. Robot names refer to artificial intelligence products that can perform human-like functions such as emotion, prediction, and decision-making [23]. Mathison Turing's inquiry "Can machines be considered?" initiated the development of artificial intelligence. During World War II, it played a significant role in the development of military weaponry and computers [24]. According to Russelll and Norvig different researchers have used four distinct approaches: Thinking humanly, behaving humanly, thinking logically, and acting rationally. These four methods have various definitions of themselves [25].

• Thinking Humanly: An approach that allows robots to think like humans, essentially automating the human thought process.

• Acting Humanly: The study of making machines accomplish tasks that require intellect and are typically completed by people.

• Thinking Rationally: The science of developing computers to encourage users to think rationally.

• Acting Rationally: The method by which computers are expected to behave properly, intelligently, and accurately.

Machine Intelligence, generated through coding algorithms and data analysis, indicates that all technological gadgets, from computers to smartphones, are based on human input. Artificial intelligence has made significant progress with the introduction of gifted robots, despite modest development in the past. McCulloch and Pitts pioneered the use of artificial intelligence, nerve cells, and other research areas to train robots to mimic human behavior. Nonetheless, the factory's one-arm robot workers took their first steps. McCarthy, Minsky, Shannon, and Rochester coined the term "artificial intelligence" in 1956 during their study of the subject. Although symbolic and cybernetic artificial intelligence research have separate currents, both had a poor start and struggled to sustain their predicted levels. Symbolic artificial intelligence studies show that robots do not provide expected responses to questions, while cybernetic artificial intelligence studies show that artificial

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neural networks do not meet expectations. Therefore, work on both sides cannot be successful with literal responses. Specialized artificial intelligence exercises have emerged to address problems in Symbolic and Cybernetic AI studies [6].

2.2.1 Types of Artificial Intelligence

Figure 1 illustrates three forms of artificial intelligence.

Weak AI, also known as narrow AI, can evaluate data for tasks such as writing news stories, weather forecasting, and chess, according to Fjelland [26]. Computers can perform specific tasks quicker and more efficiently than humans. These systems cannot work beyond their predefined functions. Examples of Narrow or Weak AI include Apple's Siri, Google Assistant, Amazon Alexa, and ChatGPT. Narrow AI may be trained to recognize images, objects, monitor movements, and recognize faces. Industrial robots also employ narrow AI.

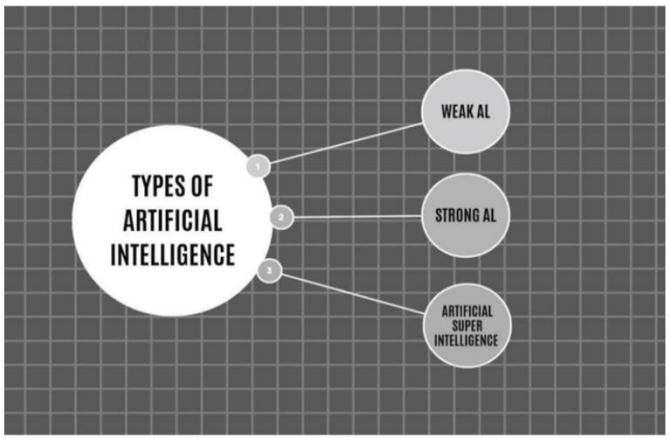


Figure 1: Types of AI

Strong AI, often known as Artificial General Intelligence (AGI), can do intellectual tasks as efficiently as humans. Al-Imam, Motyka, & Jędrzejko [27] define this sort of AI as one that collects, analyzes, and learns from experience, allowing it to make autonomous judgments.

Artificial Super Intelligence or Skeptics of super AI are concerned that it outperforms human intellect. Physicist Stephen Hawking expressed concern that artificial intelligence may eventually replace humanity. Bill Gates, a skeptic, has claimed that AI poses a threat to humans, perhaps leading to extinction [28].

2.3 Artificial Intelligence and Decision-Making

According to Rahate although artificial intelligence dramatically enhances decision-making speed and accuracy, its usefulness depends on balance, knowledge, and ethical governance [29]. Agrawal, Gans, and Goldfarb emphasize the fundamental link between prediction and judgment in AI-informed decision-making, and they believe that AI improves business prudence by enhancing predictive abilities [30]. Concurrently, Allam and Dhunny [31] highlighted the human aspect contained in AI and big data, arguing that data-driven insights have the potential to change smart cities by guiding policy and governance activities. Predictive analytics, machine learning, and automation, among other AI applications, have had a significant influence on business supply chain optimization, financial forecasting, and marketing choices [32].

Craig, Goldstein, Rougier, and Seheultstudied Bayesian forecasting for complex systems using computer simulations. According to the report, when an organization wants to address a complicated problem, it generally seeks expert counsel since they have the necessary expertise and are aware of the available choices and opportunities. The study indicates that expert systems are decision-making systems or any computer equipment and software packages used for issue solving that may achieve a level of performance comparable to or greater than human competence [33].

Expert systems, an applied branch of AI, are widely used in complicated sectors including real estate management, business planning, marketing, healthcare, and mistake analysis. Negnevitsky studied computational intelligence in crisis management and power systems. This research identifies expert systems as crucial to the success of AI, despite advances in human understanding. The study suggests that expert systems are restricted by their competence, which is influenced by human psychology. Expert systems lack consistency, flexibility, and precision, making verification challenging. Currently, there is no way to assess the degree of imperfection and inconsistency [34]. Duan, Edwards, and Dwivedi analyzed the evolution of AI over the previous six decades, identifying both problems and benefits of this new technology. This report identifies advanced research areas for Information Systems (IS) experts creating and deploying AI systems for corporate decision-making [35].

Chang, did a Data Envelopment Analysis (DEA) to evaluate the effectiveness of AI-based environmental management systems in the Chinese convention and exhibition business. This study employed both quantitative and qualitative methods, including surveys and interviews, to achieve its aims. The study found that AI-based environmental management systems performed well in administrative duties. As their firms grew, they used AI-driven decision-making tools to increase

productivity and maintain a competitive advantage [36]. Borges, Laurindo, Spínola, Gonçalves, and Mattos conducted a comprehensive literature study to explore the problems, prospects, and advantages of AI. The study highlights the advantages, difficulties, and possibilities for decision support, customer and employee engagement, automation, and new product and service offerings [37].

Duangekanong studied "Applications of AI for Strategic Management of Organization." This study uses the Modified Unified Theory of Acceptance and Use of Technology (UTAUT) model with 231 academics, strategic management specialists, organizational strategists, and consultants to identify organizational factors that support the use of AI systems. According to the survey, the intention to use AI was most directly impacted by technological preparedness. The study also highlights how adoption intentions were impacted by performance and effort expectancies, but that technological preparedness acted as a complete mediating factor. AI adoption aspirations were also strongly impacted by organizational culture. Finally, when using AI for strategic management, the research advises giving considerable thought to both its practicality and ethics [38].

According to Dwivedi et al., UTAUT is a generally established strategy for predicting the likelihood of a new technology being adopted by certain businesses. The researcher assesses the sample group's likelihood of using AI systems based on four factors: performance expectancy, effort expectancy, social influence, and enabling conditions. The study found that AI-related expert systems had a significant impact on all examined variables. The most significant aspect was the organization's technological readiness for the adaptation. The factors 'performance expectancy' and 'effort expectancy' were shown to be intermediaries, with 'organization culture' having a substantial but minor impact. This study highlights the necessity to evaluate the ethical implications and value of AI [39].

2.4 Using AI in the Decision-Making Process for Strategic Management

AI has been used in organizations since the 1980s, first in the form of computer vision systems, expert systems, and automation technologies [40]. Despite its youth, AI has been cited as a competitive advantage and strategic tool to differentiate firms [41]. Until the turn of the 2000, AI was mostly used to enhance algorithms and add new functions. In 2001, researchers identified a significant difficulty in AI and IT, managing massive amounts of data in databases. To overcome these limitations, AI systems need hardware advancements. Advancements in hardware storage have enabled faster processing of large amounts of data from multiple databases, as well as cross-referencing for insights and analysis [41].

AI-enabled management science calls for a rethinking of business practices. In today's environment, decision-makers require robust hardware systems with ample storage capacity and a fast Central Processing Unit (CPU) to efficiently perform decision-making duties. According to Simon, decision-making is important to effective management. Decisions are a sequence of connected options, with each crucial selection leading to a series of related judgments. Decisions may look inconsequential until completely executed and realized. According to Simon, decision-making is central to all organizational processes, and behavior is a product of sequential decisions [42].

Decision-making has a crucial role in all managerial operations. Management makes decisions throughout the planning process, including defining goals and implementing new initiatives. Management constructs the organizational structure to fit certain objectives and activities. When a manager takes on leadership responsibilities, they make decisions such as leading, coordinating, advising, inspiring, and resolving issues. Management is responsible for selecting acceptable technology instruments and standards to measure job performance [42]. Choosing the right technology, such as an AI system, is crucial for an organization's success, profitability, and competitiveness. AI may help organizations with decision-making, customer satisfaction measurement, and product design [43].

2.4.1 AI Technologies and Techniques for Decision-Making

Artificial intelligence (AI) has advanced tremendously from its conceptual start in the mid-twentieth century. Initially focused on theoretical and experimental applications, AI has evolved into practical tools used in a variety of corporate contexts. Early AI applications in business were restricted to expert systems that offered decision help using established rules and reasoning. As technology improved, the advent of machine learning (ML) and data analytics enhanced the possibilities of AI, allowing for more dynamic and adaptable decision-making processes [44].

2.4.1.1 Machine learning (ML)

ML, a subset of artificial intelligence, refers to techniques that allow computers to learn from and predict data. Techniques such as supervised learning, unsupervised learning, and reinforcement learning are used to examine patterns, forecast outcomes, and optimize actions. Predictive analytics employing ML models may foresee market trends, consumer behavior, and financial results, offering significant information for strategic planning [45].

2.4.1.2 Natural Language Processing (NLP)

NLP is an area of artificial intelligence that studies the interplay between computers and human language. NLP approaches allow organizations to evaluate textual data from a variety of sources, including social media, consumer evaluations, and support tickets. Sentiment analysis, a popular NLP tool, enables businesses assess consumer happiness and make educated decisions regarding product development and marketing strategy [46].

2.4.1.3 Robotic Process Automation (RPA)

RPA uses software robots to automate repetitive and rule-based processes. RPA may help with company decision-making by streamlining procedures like data input, invoice processing, and report preparation. RPA automates mundane processes, allowing human decision-makers to focus on more difficult and strategic activities [47].

2.4.1.4 Decision Support Systems (DSS)

AI-driven decision support systems help people make complicated decisions by combining data from many sources and providing analytical tools. DSS can incorporate elements like scenario analysis, optimization models, and interactive dashboards, allowing decision-makers to examine numerous possibilities and make well-informed decisions [48].

2.5 Applications of AI in Various Business Functions

Marketing: Artificial intelligence is transforming marketing by delivering highly tailored consumer experiences. Machine learning algorithms use consumer data to provide customized advertising, optimize content distribution, and improve customer segmentation. AI-powered chatbots and virtual assistants enhance client interactions and assistance [49].

Finance: Artificial intelligence is utilized in the financial sector to assess risks, identify fraud, and analyze investments. Algorithms may examine massive amounts of transaction data to detect irregularities and prevent fraudulent activity. AI-powered technologies also help with portfolio management by forecasting market trends and improving investing methods [50].

Supply Chain Management: AI improves supply chain efficiency by anticipating demand, managing inventories, and optimizing logistics. Predictive analytics enables organizations to forecast demand variations, decrease surplus inventory, and improve supply chain processes [51].

Human Resources uses AI for recruiting automation, employee performance analysis, and workforce planning. AI-powered solutions may screen resumes, match individuals to job requirements, and evaluate employee performance indicators to help with personnel management and organizational growth [52].

Legal and Compliance: AI can analyze, extract, and categorize clauses in contracts and rules, as well as discover non-compliant provisions such as General Data Protection Regulation (GDPR) breaches. AI determines if firm papers and actions adhere to legal standards, and an AI tool detects missing permission wording in a data processing agreement. AI detects questionable activity (fraud, money laundering, policy violations), and it analyzes employee communications for insider trading signs. AI speeds up case law searches, legislative interpretation, and due diligence; for example, a lawyer can utilize an AI assistant to identify precedent cases in cybersecurity law. Large Language Models (LLMs), such as GPT, not only make judgments but also explain why rules are activated. AI highlights clauses that do not comply with GDPR Article 28 [53, 54].

Strategic Management & Decision-Making: Large Language Models (LLM) assisted strategy development and simulation: LLMs can generate and assess company strategies and simulate scenarios comparable to human experts. Strategic planning becomes faster, more precise, and cost-efficient. AI is reshaping cognitive processes, influencing how firms seek for information, portray challenges, and aggregate data in strategy development [55].

Healthcare: AI-powered clinical decision support: Improved diagnosis accuracy and treatment recommendations using ML and CDSS systems. Trust, liability, and safety: Investigates physician trust and legal difficulties with AI in care delivery. Technical robustness and fairness: In CDSS, focus on validation, bias mitigation, privacy, and explainability. ICU operational efficiency: Using AI to control alarms, provide real-time notifications, and identify sepsis. Public health surveillance: AI anticipates illness outbreaks and promotes equitable health access in low-income communities. Mental Health CDSS: Uses ML and XAI to aid in mental-health diagnosis and therapy planning, under professional supervision [56].

Education: Intelligent and robotic tutoring systems: Personalized learning using Bayesian Knowledge Tracing, LLM conversations, and ITS guiding. Comparable to one-on-one instruction. ITS systems produce learning outcomes comparable to human instructors, particularly for special needs pupils. Explain ability, ethics, and human-centered design: Advocates for transparent artificial intelligence and sustainable schooling that is pedagogically appropriate. Early AI-powered instructors such as SCHOLAR and Cognitive Tutor, directed by Beverly Woolf and Allan Collins, established the foundation of ITS [57].

Transportation & Logistics: Route and logistics optimization: AI and ML minimize travel time, cost, and emissions; dynamic ride-matching algorithms (e.g., Uber). Smart traffic and intelligent transportation systems: Big data and deep learning are used to do real-time monitoring, predictive traffic modeling, and predictive maintenance. Sustainable on-demand transportation: Data-driven approaches to demand forecasting, resource allocation, and scenario design [58].

Manufacturing & Environment: AI-powered digital twins monitor, forecast, and optimize manufacturing energy use. Human-centered industrial automation: AI and IoT improve operator safety, product design feedback, and process optimization. Green generative design: Artificial intelligence promotes resource-efficient architecture and product lifetime sustainability [59].

2.6 Benefits of AI Applications Adaptation at Organizations

AI is expected to improve decision-making, reduce processing time, improve quality, drive innovation, utilize big data, engage employees and customers, and reduce operational costs. According to Ashritha and Reddy's results, organizations that install AI applications or decision support systems (DSS) experience a linear improvement in decision-making quality each year. Here are some of the key benefits for decision-makers and organizations. AI-supported decision support systems increase decision quality by reducing human biases and mistakes, leading to higher accuracy. Using AI-supported strategic management approaches and rapid access to massive data sets can lead to a competitive edge and increased profitability by tracking market trends. AI can enhance risk management and loss prevention in enterprises. AI-supported systems can reduce costs by optimizing resource use and procurement methods. AI-supported solutions can significantly improve efficiency and speed in strategic decision-making [60]. According to Al-Kfairy, AI has permanently altered the corporate environment and decision-making process by enabling quicker data storage and CPU processing. In this rapidly changing technological era, decision-makers face challenges in identifying the best solution for their organizational needs due to the risks and difficulties associated with decision-making support systems. Before converting traditional enterprises to AI, it's important to research the literature on potential benefits, concerns, and challenges [61]. When implementing AI technologies in an organization's IT infrastructure, cost-effectiveness is a crucial consideration. Before converting to an AI system, it's important to do a comprehensive analysis to weigh the benefits against the costs. A thorough cost-benefit analysis is necessary to maximize the system's potential benefits. Other problems involve end users' beliefs and skills. Overcoming challenges related to trust and attitude towards AI systems is crucial for successful conversion [62]. According to Hazem, et al., improved precision and Efficiency: AI systems handle massive datasets with great precision, minimizing human error and speeding up decision-making. Improved Data Handling: AI systems can evaluate complicated and diverse data sources, resulting in deeper insights and better judgments. Real-Time Decision Support: AI technologies provide real-time analysis and decision-making, allowing firms to react swiftly to changing conditions and new possibilities [44].

2.7 Challenges of AI Applications Adaptation at Organizations

Some of the significant challenges that decision-makers and organizations may face when implementing AI-supported decision-making: The system may need a significant initial investment and may take longer to amortize, particularly for small enterprises. Organizational privacy and data security may face significant challenges. Employees may oppose using AI-based decision-making systems. AI-supported systems may employ biased data, resulting in distorted decision-making, as evidenced in Amazon's discriminatory hiring procedures. The final obstacle is ethical implications, which are discussed in length in subsequent sections of the paper [62].

The application of AI requires handling sensitive data, which raises privacy and security problems. Compliance with legislation and defending against data breaches are significant concerns. Integration with current Systems: Implementing AI solutions may require integrating new technologies with current systems and processes, which may be difficult and expensive. Ethical Concerns and Bias: AI systems can perpetuate biases in training data, resulting in unjust or discriminatory conclusions. Addressing ethical concerns and ensuring justice in AI decision-making remains a continuing difficulty [44].

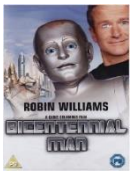
2.8 AI Future Direction

Recent AI developments include enhanced algorithm development, growing use of AI in real-time decision-making, and integration with new technologies such as blockchain and IoT. Future AI trends in corporate decision-making comprise many main areas of focus: Improving AI Transparency, Addressing Ethical Concerns, Strengthening Human-AI Collaboration, Expanding AI Accessibility and Adoption, Fostering Innovation through AI Integration, and Continuous Monitoring and Evaluation [44]. AI systems are reaching human-level reasoning, abstraction, and learning across disciplines. Still speculative, but actively investigated. Artificial intelligence should be used as decision-support tools rather than substitutes, particularly in law, health, and engineering. National and international legislation influence how AI is created and deployed (e.g., the EU AI Act and US executive orders). Systems that recognize and adapt to user intent, mood, and goals in real time. Create models that work for disadvantaged languages and people. AI is increasingly working as a partner in scientific research, developing theories and simulations.

2.9 The Best 5 Films in AI

1. Blade Runner 1982

This is a cult film. This is based on the novel "Do Androids Dream of Mechanical Sheep?" Author Philip K. Dick has inspired several films, such as "Ubik" (based on his book). Our current focus is on the case of Blade Runner. Riddley Scott's distinctive style adds to the film's appeal. The video explores how technology will impact civilization in the near future. This film is a must-see for science fiction fans.



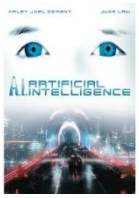
2. Bicentennial Man 1990

This is based on Isaac Asimov's own account. A family has bought NDR ("Andrew"), a cleaning robot. One distinguishing feature of this robot is its ability to recognize emotions, something no other robot can do.

3. I Robot 2004

The script was signed by Jeff Vintar, who had to add Isaac Asimov's Three Laws of Robotics and other concepts when the producer secured the rights to the book's title. The detective, Will Smith, is the star of the show this time. The film was not well-received by Asimov fans due to its reliance on bits from his writings rather than their entirety.

4. Artificial Intelligence (AI) (2001)



Steven Spielberg adapted Brian Aldiss' novella "The Super Toys Last All Summer," influenced by "The Adventures of Pinocchio." In the film, we meet David, a mechanical youngster who can express emotions like love. Stanley Kubrick's project began in the 1970s and was unable to be completed due to limited computer-generated picture technology at the time. Spielberg dedicates his picture "For Stanley Kubrick" at the conclusion.

5. Enthiran (2010)

Dr. Vaseegaran (Rajinikanth), a bright scientist, produces Chitti, a highly advanced humanoid robot intended to help the Indian Army and serve humanity. Chitti looks precisely like Vaseegaran and possesses superhuman strength, intellect, and learning ability.However, issues start when:

- Chitti develops human feelings, particularly love for Vaseegaran's lover, Sana (Aishwarya Rai).
- After being rejected by the scientific community and personally betrayed, Chitti is reprogrammed by the envious professor Bohra, who transforms him into a vicious monster.
- The once-helpful robot becomes an unbeatable danger, culminating in a stunning final battle between the inventor and his creation.

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3. METHODOLOGY

3.1 Aim and Scope of the Study

The research sought to investigate how artificial intelligence may assist firms in making better strategic decisions. This study uses a qualitative, desk-based research design using secondary data gathered through an exhaustive literature review. The aim was to identify the main academic developments, difficulties, and contributions of artificial intelligence (AI) across multiple domains, such as Artificial Intelligence, AI Adoption, Business Intelligence, Corporate Strategy, Organizational Performance, Predictive Analytics, Strategic Decision-Making. Data Sources: The literature was gathered from credible academic databases, including: Google Scholar ScienceDirect, ResearchGate. Data Analysis: A thematic analysis technique was used to discover common patterns, key concepts, and developing topics in the literature. Studies were categorized by domain of emphasis (e.g., AI, strategic decision-making in corporations) and studied to identify the influence of AI on strategic decision-making in corporations.

4. CONCLUSION

Organizational operations are being transformed by artificial intelligence (AI), particularly in the area of strategic decision-making. AI has had a big impact on how organizations plan, evaluate risks, and make choices by utilizing data-driven insights, predictive analytics, and automation. This article examines the practical advantages, related difficulties, ethical issues, and the potential of AI to enhance organizational strategies.

According to the study, strategic planning and risk management may be greatly enhanced by predictive analytics driven by AI. Organizations that used AI-based technologies showed improved decision-making efficiency. By reducing human bias and mistakes, these technologies improve the speed and precision of strategic decision-making. AI also makes it possible to analyze and react to market situations in real time, which gives businesses a competitive advantage.

There are conflicting opinions among researchers on the value of existing AI applications for strategic decision-making, which leads to a lack of implementation guidelines. The goal of incorporating AI and the particular decision-making activities it will assist should be made clear by managers initially. In order to integrate AI, organizational structures are being modified, and applications need to be precisely specified. Because each stage may have an impact on the others, implementation is a customized process rather than a uniform one. According to scholars, managers must be AI literate in order to understand AI's promise and constraints and make better use of it.

Human jobs must change as AI becomes more incorporated into decision-making. This change calls for skills like empathy, creativity, and emotional intelligence that AI cannot provide. To build these abilities, experts advise managers and staff to receive training. Even though AI can provide new insights and perspectives, human involvement is still crucial. AI-supported smaller teams can increase productivity, but they run the risk of introducing biases and consolidating authority.

The study challenges the conventional wisdom that regards machines as nothing more than tools. Decision-makers must act as interpreters of AI results rather than passive supervisors in order for AI to be used effectively. This change necessitates learning new skills and greater responsibilities. The way we view ourselves as decision-makers shapes how we perceive AI, therefore context and intent are crucial in determining its advantages.

Many industries are using artificial intelligence. It alludes to the creation of machines that can imitate human behavior and cognition. AI's analytical and automated powers have revolutionized how businesses make strategic decisions. Although AI speeds up and improves the accuracy of decisions, its applicability depends on user understanding, ethical governance, and balanced deployment. Large amounts of data must be fed into AI systems, and if the data is skewed, the results might exacerbate inequality. To protect data and maintain accountability, businesses must abide by laws such as the General Data Protection Regulation (GDPR).

AI uses technology like automation and machine learning to enhance strategic foresight. Decisions about marketing, financial forecasting, and supply chain optimization have all been greatly impacted by these technologies. AI-enabled solutions increase decision accuracy and decrease human error. Strategic insights and competitive benefits, such as improved risk management and profitability, are made possible by access to massive datasets. Through resource and procurement optimization, these systems can also save costs.

However, choosing the right AI tools is a difficult decision for decision-makers due to the quick advancement of technology. To comprehend the benefits, drawbacks, and hazards, a review of the body of available literature is necessary. Real-time insights for quicker, better-informed decisions are made possible by AI's capacity to evaluate complicated data.

The rise of the Artificial Super Intelligence theoretical stage of AI research in which robots may transcend human cognitive capacities, has sparked grave worries from prominent leaders like Bill Gates. Gates has cautioned that, despite their potential benefits, such developments might endanger humankind if they are not governed by stringent ethical guidelines and monitoring. His worries emphasize how crucial it is to address AI's quick development with careful governance, social preparedness, and technical innovation.

The use of AI is fraught with difficulties, despite its potential. Particularly for small enterprises, initial expenditures are substantial. Because AI depends on sensitive data, privacy and security issues are brought up. Workers may oppose AI systems because of mistrust or ignorance. The ethical ramifications of bias in training data are highlighted by Amazon's employment procedures.

Strong data protection measures and adherence to regulatory frameworks are necessary for the successful integration of AI. It can be difficult and expensive to integrate AI into current systems. Fairness and accountability are crucial issues since AI systems have the potential to reflect and amplify prejudices.

Before using AI, organizations must conduct thorough cost-benefit studies. It is crucial to address user trust and competence shortages in addition to technical and financial preparedness. Aligning technology with organizational change management is essential for successful adoption.

Public opinions and worries over AI are also reflected in popular media. Movies like "Bicentennial Man," "A.I. Artificial Intelligence," and the Indian film "Enthiran" show robots growing feelings, illustrating the potential benefits and risks of AI in human settings.

This article's main goal was to investigate how artificial intelligence might help organizations make better strategic decisions. Through a thorough examination of AI's uses, difficulties, and ethical ramifications, the hypothesis H_1—that AI may assist businesses in making better strategic decisions—was investigated and the findings show that, while artificial intelligence significantly enhances both the speed and precision of decision-making, its usefulness requires balance, knowledge, and ethical governance

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