

ROLE OF AI IN BUSINESS DECISION MAKING

Dr. A. Hilary Joseph

Assistant Professor,
The American College, Madurai
hilaryjoseph@americancollege.edu.in

Dr. A. Sathyalekha

Assistant Professor,
The American College, Madurai
sathyalekha@americancollege.edu.in

DOI: <https://doi.org/10.34293/ICAICM-25.ch018>

Abstract

Artificial intelligence (AI) is a key instrument in business that is revolutionizing customer engagement and marketing strategies. It is not just a fad. Our study indicates that almost 90% of corporate executives are preparing to increase their spending on artificial intelligence (AI) and machine learning (ML), particularly in the field of marketing. Numerous business processes, such as marketing plans, product development, sales effectiveness, customer service, human resources, operations, and security, have been transformed by AI. AI is used by business executives and marketers to improve campaigns, make more informed decisions, and expedite processes. AI is redefining business excellence and altering the rules of the game. This paper explores how Artificial Intelligence (AI) is transforming strategic business decision-making, providing a nuanced view of how AI is changing the corporate landscape.

Keywords: Artificial Intelligence, Business, Decision making

Introduction

Artificial intelligence is the term used to describe machines that mimic human cognitive abilities. It encompasses a broad spectrum of technologies that let machines to carry out operations like reasoning, problem-solving, decision-making, and experience-based learning that have historically required human intelligence.

Today, artificial intelligence (AI) is a catch-all term for a number of related disciplines, including machine learning, deep learning, and natural language processing. Numerous applications, such as chatbots, virtual personal assistants (like Siri and Alexa), recommendation engines, driverless cars, and medical diagnostic systems, have been made possible by the advancement of AI. These applications show how AI may be used in real-world settings to carry out particular activities with a high degree of efficiency and precision.

In the modern economy, data is altering how firms view one other. In the contemporary corporate environment, humans and AI are collaborating to enhance human capabilities for value creation. Experts are often trying to forecast how Artificial Intelligence (AI) will be used on a big scale and how important it will be for the world economy. While automating routine work with AI can be a wise decision, it also needs to provide experts ample room to focus on more complicated and creative jobs.

The conversation should center on how AI and people can collaborate to develop significant and practical commercial solutions, rather than on whether AI will eventually replace humans. Together, these two may build a long-lasting, mutually beneficial partnership that enhances people's lives on both a personal and professional level while also adding value to enterprises. AI, for example, can simplify administrative work in the education sector, freeing up teachers to focus more on developing creative student-centered lessons and recognizing human potential where a machine would falter. The best outcomes for pupils will probably come from a human-machine combination.

In the corporate sector, the use of AI in strategic business choices is a significant breakthrough. It propels the development of new business models, calls for a reevaluation of conventional strategic planning procedures, and offers enormous potential for value generation. As businesses maneuver through this AI-driven environment, their attention turns to maximizing AI's capacity to strengthen corporate performance, facilitate better decision-making, and guarantee long-term commercial growth in a world going more and more digital.

How artificial intelligence helps in business functions

Numerous business processes, such as marketing plans, product development, sales effectiveness, customer service, human resources, operations, and security, have been transformed by AI. AI is used by business executives and marketers to improve campaigns, make more informed decisions, and expedite processes. AI is redefining business excellence and altering the rules of the game.

Artificial intelligence in marketing

AI in marketing changes how companies engage with their clients in a number of ways, providing observable advantages that have a direct bearing on a business's profitability.

Social listening

AI-enabled social media management platforms, such as Sprout Social, use artificial intelligence (AI) into social listening to assist with social media conversation analysis, converting massive volumes of data into useful insights. In the end, this fosters deeper customer relationships and brand loyalty by enabling you to monitor brand health, assess customer opinion in real time, and react quickly to market developments.

Content personalization

AI uses consumer behavior, preferences, and demographics to tailor information. For instance, Netflix leverages AI to offer viewers personalized suggestions for movies and TV shows, improving user experience and audience engagement.

Review of Literature

Tejeda et al. (2022) examine the cognitive elements of decision-making supported by

AI. Their study aims to comprehend how humans depend on AI in situations involving cooperative decision-making. They gain insights into how AI affects human decision-making processes by creating a cognitive model that infers human latent reliance strategies on AI support. The study shows that even while AI support is becoming common in applications for decision-making, it is still important to comprehend and control the dynamics of human-AI cooperation. Businesses must grasp this in order to use AI efficiently without compromising human judgment and intuition.

Delbufalo, Di Bernardo, and Risso (2022) Examine how human and machine intelligence interact in the setting of cutting-edge, competitive business. They underline how crucial it is to balance artificial and human intellect when making decisions. Their research emphasizes how companies must modify their responsibilities and business models to meet the intelligent change facilitated by technology advancements. Maintaining competitiveness and assuring sustainable strategies and policies depend on this adaption.

Kitsios and Kamariotou (2021) provide a comprehensive overview of this evolution, highlighting the significant advances in machine learning techniques and their integration into business strategies. Their research underscores the potential of AI in solving complex business challenges, while also acknowledging the difficulties in its practical implementation. The lack of expertise in strategically utilizing AI for business value creation is a notable challenge. They propose a theoretical model based on their systematic literature review, which discusses the alignment of AI tools with organizational strategy, knowledge management, decision-making processes, and service innovation.

Mithas, Murugesan, and Seetharaman (2020) delve into the strategic considerations that organizations must make in the age of AI. They pose critical questions about how firms should integrate AI into their digital and information technology strategies. Their work suggests that while AI may not entirely steer a firm's strategic decisions, its role in modifying the architecture of resources and qualifications within firms is undeniable. This new architecture necessitates an internal reorganization for effective deployment in business process strategies. The authors argue that given the nature of decisions automated by AI, it is imperative for firms to establish governance bodies to define the doctrine for using such technology.

El-Namaki (2016) examines the use of AI in company strategy development, highlighting the transition from human-centric to AI-driven strategic procedures. Product and marketing tactics have been completely transformed by AI's capacity to scan through enormous information and spot patterns that are invisible to the human eye. The report shows how AI is influencing strategy and changing the way company strategies are conceptualized and implemented by presenting a number of case studies from various industries. In order to position AI as a tool and a crucial element of strategy formation, the article suggests a conceptual framework for its implementation in business.

Scope of the Study

The scope of the study is especially designed to investigate how AI technologies are

being incorporated into different business models and industries, emphasizing both the opportunities for transformation and the difficulties that come with doing so. This includes a look at how AI affects market analysis, customer interaction, and data-driven decision-making. The primary focus of the analysis is on the use of AI in business strategy, with a particular emphasis on how it affects competitive advantage, operational efficiency, and decision-making processes.

Objectives of the study

1. To explore the challenges in business decision making.
2. To solve the problem of decision making with AI.
3. To find out the role of AI

Methodology

Data were collected from both primary and secondary sources. The primary data were collected from various business people and entrepreneurs through structural questionnaire. Secondary data have been collected from published sources like books, Journals, research dissertations, documents.

Sampling Design

A questionnaire was prepared and distributed among 100 respondents in business sector and others. The researcher describes them about AI through a common example. Also the questionnaire was set for some common people as they do not know about AI. Convenient sampling method has been used to collect the data.

Tools for Analysis

Data are analyzed by using SPSS package. It was used for quantifiable variables. Then the tables were prepared by using statistical techniques such as visualization percentage analysis, Chi Garrett Ranking and level of satisfaction.

Data Analysis and Interpretation

Table 1: Gender Wise Classification of the Respondents

Gender	No. of. Respondents	Percentage
Male	65	65
Female	35	35
Total	100	100

Source: Primary data

From the Table 1 inferred that, 65 percentage of the respondents are male and 35 percentage of the respondents are Female.

Table 2: Age Wise Classification of the Respondents

Age	No. of. Respondents	Percentage
Below 25	26	26

25 – 35	47	47
Above 35	27	27
Total	100	100

Source: Primary data

Table 2 inferred that, 47 percentage of the respondents are age group of 25 - 35, 27 percentage of the respondents are age group of Above 35 and remaining 26 percentage of the respondents are age group of below 25.

Table 3: Occupation of the Respondents

Occupation	No. of. Respondents	Percentage
Related with Business Sectors	58	58
Others	42	42
Total	100	100

Source: Primary data

From the Table 3 inferred that, 58 percentage of the respondents are Related with business sectors and remaining 42 percentage of the respondents are others.

Table 4: Functions of Artificial Intelligence

Functions	No. of. Respondents	Percentage
Faster decision making	44	44
Late decision making	30	30
No directly decision making	26	26
Total	100	100

Source: Primary data

From the Table 4 inferred that, 44 percentage of the respondents are say that Faster decision making and 30 percentage of respondents are late decision making and remaining 26 percent of respondents are say AI is not directly involve in decision making.

Table 5: Benefits of Artificial Intelligence

Benefits	No. of. Respondents	Percentage
AI in everyday life	22	22
AI in Business opportunities	38	38
AI in Business decision making	28	28
All of the above	12	12
Total	100	100

Source: Primary data

From the Table 5 inferred that, 38 percentage of the respondents are say that AI in Business Opportunities and 28 percentage of respondents are AI in Business decision making and 22 percent of respondents are say AI is used in everyday life.

Table 6 Factors Influencing in AI

Factors	Mean score	Average	Rank
Business Model	11480	57.4	I
Business Compatibility	10971	54.85	II
Self efficacy	10653	53.26	III
Performance Expectancy	9702	48.51	IV
Technical support	9404	47.02	V

Source: Primary data

From the Table 6 inferred that, Main Factors influencing in AI is Business model and Business compatibility, self efficacy and Performance efficacy is second, third and fourth place. Technical support is in fifth place.

Table 7 Role of AI in Business decision making

				Total
	Low	Medium	High	
Speed decision making	5	17	8	32
Supercharge productivity	9	11	10	28
Improve accuracy	5	6	4	15
Increase efficiency	4	5	3	12
Create consistency	3	5	5	13
Total	26	44	30	100

Source: Primary data

From the Table 7, it is inferred that among sample respondents who have low level opinion of increased efficiency 12 respondents are social media increased my product or service sales/demand, 15 respondents are improved accuracy of medium level of satisfaction, 32 respondents are speed decision making High level of satisfaction of respondents.

Findings

- 65 percentage of the respondents are male and 35 percentage of the respondents are Female.
- 47 percentage of the respondents are age group of 25 - 35, 27 percentage of the respondents are age group of Above 35 and remaining 26 percentage of the respondents are age group of below 25
- 58 percentage of the respondents are Related with business sectors and remaining

42 percentage of the respondents are others.

- 44 percentage of the respondents are say that Faster decision making and 30 percentage of respondents are late decision making and remaining 26 percent of respondents are say AI is not directly involve in decision making.
- 38 percentage of the respondents are say that AI in Business Opportunities and 28 percentage of respondents are AI in Business decision making and 22 percent of respondents are say AI is used in everyday life.
- Main Factors influencing in AI is Business model and Business compatibility, self efficacy and Performance efficacy is second, third and fourth place. Technical support is in fifth place.
- who have low level opinion of increased efficiency 12 respondents are social media increased my product or service sales/demand, 15 respondents are improved accuracy of medium level of satisfaction, 32 respondents are speed decision making High level of satisfaction of respondents.

Conclusion

The effects of AI on company transformation and value go beyond appearances. AI is a catalyst that transforms businesses and opens up new avenues for growth. It emphasizes that in order to create a symphony of innovation, value creation, and competitive advantage, firms must proactively connect their business goals with AI capabilities rather than just adopting AI as a technological novelty. With the development of AI, the threat of ambiguity in decision-making takes on a new dimension. As our investigation has shown, it is critical to manage unpredictability and preserve sustainability in AI decision-making. It emphasizes that companies need to set up procedures for handling uncertainty and a strategy for the long-term, sustainable use of AI in addition to ensuring responsibility and openness in AI decision-making.

The development of a welcoming and trustworthy environment is essential to the success of AI-human synergy, as AI is more than simply a tool; it is a complex interaction of perception, experience, and trust. There are difficulties and a need for methodological advancements in the field of AI-enabled decision-making research. Improving research techniques and procedures is essential to the adoption trajectory of artificial intelligence. In addition, the democratization of AI—especially with the help of frameworks like automated machine learning (AutoML)—becomes imperative for businesses in order to solve the skills gap and guarantee that AI systems are understandable and accessible.

To sum up, artificial intelligence (AI) is recognized as a critical component in the development of company strategies because it presents unmatched chances for efficiency and creativity. The process of incorporating AI into business operations is intricate and requires strategic alignment with goals and core values. The study's recommendations support a well-rounded strategy in which artificial intelligence (AI) is welcomed as a catalyst for sustainable growth and development as well as a technological advancement. Future developments indicate that AI's influence on business decision-making will likely

continue to have a significant and long-lasting impact on the dynamics of the corporate world.

Reference:

1. Arenas-Torres, F., Bustamante-Ubilla, M. and Campos-Troncoso, R., 2021. The incidence of social responsibility in the adoption of business practices. *Sustainability*, 13(5), p.2794. <https://dx.doi.org/10.3390/SU13052794>
2. Belhadi, A., Kamble, S., Fosso Wamba, S. and Queiroz, M.M., 2022. Building supply-chain resilience: an artificial intelligence-based technique and decision-making framework. *International Journal of Production Research*, 60(14), pp.4487-4507. DOI: 10.1080/00207543.2021.1950935
3. Fenwick, M., Vermeulen, E.P. and Corrales, M., 2018. Business and regulatory responses to artificial intelligence: Dynamic regulation, innovation ecosystems and the strategic management of disruptive technology. In *Robotics, AI and the Future of Law*(pp. 81-103). Singapore: Springer Singapore. DOI: 1007/978-981-13-2874-9_4
4. Isensee, C., Griesse, K.M. and Teuteberg, F., 2021. Sustainable artificial intelligence: A corporate culture perspective. In *Sustainability Management Forum | Nachhaltigkeits Management Forum* (Vol. 29, No. 3-4, pp. 217-230). Berlin/Heidelberg: Springer Berlin Heidelberg. DOI: 10.1007/s00550-021-00524-6
5. Ilieva, R., Ivanova, M., Peycheva, T. and Nikolov, Y., 2021. Modelling in support of decision making in business intelligence. In *Integration Challenges for Analytics, Business Intelligence, and Data Mining*(pp. 115-144). IGI Global. DOI: 4018/978-1-7998-5781-5.ch006
6. Rajagopal, N.K., Qureshi, N.I., Durga, S., Ramirez Asis, E.H., Huerta Soto, R.M., Gupta, S.K. and Deepak, S., 2022. Future of business culture: an artificial intelligence-driven digital framework for organization decision-making process. *Complexity*, 2022, pp.1-14. DOI: 10.1155/2022/7796507