IMPACT OF AI IN FOSTERING IMPROVED DECISION MAKING IN AN ORGANISATION

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ABSTRACT

Purpose – Machines can help humans get over complexity through an analytical approach through well-computed computations to combine massive data otherwise, which is difficult for humans. The primary purpose of this research work is to understand the role of AI in fostering improved decision making. The paper also includes the limitations faced by AI in decision making. The main argument here is if AI should completely replace humans in the organization's decision-making process and, if yes, its pros and cons.

Research Methodology – The methodology adopted for this research paper is the Doctrinal research method. The author has obtained all statistics and findings from published research papers by experts. The author will also try to determine the impact of AI on the decision making of the organization via credible journals, and websites.No preliminary study was done in this research paper.

Findings –The findings of this research paper established that AI does have a significant role in fostering improved decision making. The findings also show that AI should be used to augment humans in the decision-making process instead of replacing them. Even though all complex decisions in which AI has a better advantage require some uncertainty involving human involvement. Therefore human-AI collaboration will be required to solve almost all complex decisions.

Research Implications- This research work provides a preliminary understanding of the role of AI in fostering improved decision making. This research work also provides a brief theory about the importance of Human-AI collaboration in decision making along with the challenges faced. Future research should use alternative methods and survey the topic.

Originality/Value –This research work describes how AI has helped foster improved decision-making in an organization and the challenges faced and its impact on the organization. This research paper also makes a unique contribution in recognizing the importance of Human-AI symbiosis in the decision making of an organizational setting.

Keywords- Artificial Intelligence ,uncertainty ,complex decisions, AI symbiosis

INTRODUCTION

The whole concept of business planning is based upon the art of decision making. The famous words of Peter Ducker quote, "Whatever a manager does, he does through making decisions ".These words stay true till this century. In an organization, situations are never constant. Conditions constantly change, and old operations and rules pave the way for new processes. Anyhow, these changed situations require people to make different decisions. Various essential decisions are undertaken by organizations every day, such as pricing a product or advertisement costs or taking care of employee issues. These decisions can change the course of the business. In short Decision making can be defined as the procedure of selecting a right and practical method of action from two or more alternatives for the sole purpose of achieving the desired result. Decision making remains one of the essential concepts in an organization. In recent times, AI (Artificial Intelligence) has been utilized to make crucial decisions for the organization. Organization AI means computer-based systems that execute, enhance or alter business activities by simulating human behaviour, to improve the organization's efficiency or effectiveness.AI is so powerful because it has the unique ability of constantly teaching itself. The more data it collects organizes, and the more data-driven decisions it makes, the more it learns.AI gathers information over a long period and then uses this data to form models that become good at making predictions and assortment over this data. Then these models can be used in real-time, allowing the businesses to make significant commercial decisions.

RESEARCH OBJECTIVES

1. To analyze the effect of Human-AI collaboration in the decision making of an organization

2. To study what impact AI has on the decision-making process of an organization

3. To understand the limitations experienced in using AI for the decisions of an organization

RESEARCH QUESTION

Does AI play an influential role in enhancing   decision making in an organization?

RESEARCH METHODOLOGY

The methodology adopted for this research paper is the Doctrinal method of research. The author has obtained all statistics and findings from published research papers by experts. The author will also try to determine the impact of AI on the decision making of the organization via credible journals and websites. All research was primarily collected through research databases. No preliminary study was done in this research.

REVIEW OF LITERATURE

1. Jarrahi (2018)[1]

The primary purpose of this research paper is to compare the different styles of decision makings by both AI and Humans and how they can complement each other to strengthen the organization's decision-making process. Almost all the decisions of an organization are based on three characteristics "Complexity, Uncertainty and Equivocality".. Machines can help humans get over complexity through an analytical approach through well-computed computations to combine massive data otherwise, which is difficult for humans. On the other hand, humans can use their prior practices, imagination, creativity, and rumination to decide upon uncertain or equivocality decisions. The findings of this research paper call for a human-machine working where machines can complete the more tedious work while humans can focus upon the creative works.

2. Tarafdar (2019)[2](case study)

The primary purpose of this review was to understand the outcome of Enterprise Cognitive Computing, which runs around the main idea of inserting AI into business applications to enhance operations. An EGC call centre would allow an organization to have its call centre running 24x7. It also allows the customer call problems to be addressed in the first call itself. The more complex problems are then transferred to actual humans without the customers knowing they were interacting with a machine all along. The same research also concluded by saying that a better business operation makes more to the point information ready for decisions and hence increases the overall decision making.

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[1] Jarrahi, Mohammad Hossein (2018). Artificial intelligence and the future of work: Human-AI symbiosis in organizational decision making. Business Horizons

[2] Tarafdar, M., Beath, C., & Ross, J. (2019). Using AI to Enhance Business Operations:MIT Sloan Review

3. Duan (2019)[3]

This research work aims to provide the challenges faced, opportunities and understand the use of AI in business decision-making. The author also has mentioned the history of decision making with the help of AI, issues about the implementation and interaction of AI on assisting or replacing human decision making. The author researches AI behavioural issues. The researcher mentions that the various decision-makers vary with their point of view and actions on implementing the decisions suggested by AI. Hence this may create a problem because AI has a long way to go to understand the attitudes of decision-makers and make a decision according to their needs. Adding to the point, different levels of management may have different views on AI and suggests that mounting AI towards different levels of decision-makers may be an effective way of engaging and changing their views on new technology.AI makes segregating BIG DATA easy with the help of cognitive computing. However, the complete interpretation of a massive amount of data by humans can be an extremely long and tiring job. The author concludes by mentioning that though AI has been handy in data analysis and has made the work much more manageable, it is not yet fully ready to take over humans over decision making

4. Cao (2021)[4]

Different levels of management have different attitudes and. This research also stresses having an effective system to assuage managers' concerns and consider both the advantages and drawbacks of utilizing AI in a balanced manner. The findings of this research work show that some managers take AI as a threat to their current jobs. They feel that AI can process extensive data and make more intelligent decisions than managers. The research paper also found out that some managers accept AI as it helps burden huge data tasks. Overall, there was a mixed response about managers' acceptance and attitude towards AI decision making.

5. Bader(2019)

The aim of the following research paper was the contribution of AI in the decisions of an organization. The authors examine how managers might get detached from or remain active in decision-making using a case study on the adoption and usage of cognitive software in a telecoms corporation. The findings demonstrate that people are becoming increasingly physically and temporally distanced from decision-making, logical distancing, and cognitive displacement. At the same time, people stay committed to decision-making due to inadvertent and infrastructural closeness, coercion, and emotional adhesion.[5]

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[3] Duan, Y., Edwards, J. & Dwivedi, Y. (2019). Artificial intelligence for decision making in the era of Big Data – evolution, challenges and research agenda

[4] Cao, G., Duan, Y., Edwards, J. S., & Dwivedi, Y. K. (2021). *Understanding managers' attitudes and behavioral intentions towards using artificial intelligence for organizational decision-making*
[5] Bader, V., & Kaiser, S. (2019). Algorithmic decision-making? The user interface and its role for human involvement in decisions supported by artificial intelligence.

FINDINGS

Human-AI Symbiosis

One of the most important uses of AI has been decision making in the entire AI history. In any case, AI can be used in two ways for decision making. A support role or a complete replacement to humans. (Mohammad Hossein Jarrahi, 2018)

While working on a support role, AI may assist non-experts or experts. In this case, AI will make the job easier for humans to decide but will not replace them.

Nevertheless, expert systems may replace experts or "non-experts" working with experts(Edwards Et al., 2000). However, while working on a replacement role, the system would make the final decision and not by any human. This does not mean that humans will be left without a job if these expert systems can make the final decision. It merely means that a "lower-skill" human would do the job.

(Edwards Et al., 2000) conducted detailed research on AI used for business decision making at different levels and positions in an organization. Three organizational decision-making levels were used in the research: strategic, tactical, and operational decisions. The findings were as follows;-

1. At the operational and tactical levels, expert systems are effective in the replacement role, but there are AI has some limitations in the strategic role
2. In the support role, AI help the users make effective decisions on all three levels
3. In the support role, AI does not always help the user reduce the time the work takes but in the replacement role; the decision making becomes quite effective
4. The expert system users did not believe that they learned something from using the machines.

This detailed research concluded with the researcher stating that AI can replace human decision-makers with more structured or half structured decisions. However, it would be better as a support role in more of the unstructured decisions at the organization's strategic level.

(Jarrahi,2018) talks about the Human-AI symbiosis for decision making in fine detail. The researcher mentions the two styles of filtering down data and coming down to a final decision: Intuitive or Analytical. While in the analytical method, decisions can be taken in a much more methodical, information gathering and analysis style. Analyzing all the information and logically deliberating it counts towards the analytical approach.AI systems like expert systems deliberate vast masses of data that help analyze and evaluate different decisions. Since AI specializes in problem-solving ability, its style focuses more on the Analytical method. Nevertheless, many of the decision-making process decisions are not only a cause of gathering and analyzing information but also of intuition. Intuition means the ability to understand something without logical information or rational thought. Through intuition, decision-makers use their past experiences and judgments to conclude without a conscious

understanding. While the analytical method depends on information, the intuitive approach deals with an abstract and holistic perspective.

With the capability of AI to gather and analyze information at super speed and humans' practical judgment and experiences, decision-making can be effective.

1. Humans and AI technology can work together to solve problems in decision-making. AI is anticipated to be well suited to dealing with complexity difficulties (using analytical approaches). Humans can use more innovative and intuitive techniques to deal with uncertainty and ambiguity.

2. Even the most complicated decisions—where AI has a competitive advantage—are likely to contain components of uncertainty and ambiguity, necessitating human intervention. As a result, humans and AI will collaborate in practically all complicated decision-making situations.

LIMITATIONS FACED BY AI

AI has proved to be very useful in the organization's decision-making process, but its problems arise.

TRUST: Various levels of management do not trust the decisions taken up by AI. They worry about the remote nature of AI and how it comes up with the decision. For them, understanding how a specific collection of inputs might design a solution for many types of issues is challenging. Furthermore, AI has the power to learn and change its code in ways that are difficult to comprehend. The AI user must trust it because of its complexity and unpredictability, transforming the user-system interaction into a partnership.

DATA ACQUISITION: Data capture and storage is one of the most difficult Artificial Intelligence challenges.AI requires sensor data to make decisions for the business. Sensor data is hard to achieve, and AI requires a vast amount to make effective decisions. Sensor data takes up much storage, and irrelevant, noisy data becomes hard to store.AI based. Decisions are only effective when there is a surplus of high-quality data to perform the algorithms on. A slight change in the quality of data could affect the accuracy of the decisions. Hence this proves the need for AI to be more stable and accurate. Also, large amounts of high-quality data are not available for every business sector, making it harder to use AI-based decision making in those industries.

BIAS: Artificial intelligence Bias is an inconsistency in AI calculations. These could be because of the biased suppositions made during the calculation improvement cycle or biases in the preparation. The decisions will be made upon the type of data fed to the machine and its self-learning ability. Amazon eliminated an AI system made for recruitment in 2018 when they found out the system was biased against women. (Duan,2019) The system observed resume patterns over the ten years, and since most of the candidates were men, it made the system believe that men were preferred over women

LEGAL ISSUES: Legal issues are another problem with AI. If AI is working over sensitive data, it may go against the state laws even if the data does not harm but is sensitive when computed together. If the data collected by the organization is taken as data privacy by the public legal issues may arise.

DISCUSSION

The primary aim of the research work was to understand the impact of AI on the decision making of organizations.AI that can process a large amount of data at once. Machines are far superior to humans when collecting information from various sources and processing multiple elements simultaneously. This is due to their ability to analyze large amounts of data at once to make complicated judgments and provide a forecast or recommendation. Studies show that when people are required to make many decisions in a short period, the quality of the decisions keeps deciding. Machines can be fed many data, and the quality of the decisions will be the same because the fatigue factor does not come into play. This helps for a quicker decision-making process which is very vital in organizations. Also, with the help of AI, managers and leaders can notice patterns that may not be possible with the help of human analysis. Artificial intelligence (AI) modelling and simulation tools use vital information about your customer personas. By incorporating these techniques into the decision-making process, businesses may boost brand loyalty by anticipating consumer behaviour. AI systems may aid in real-time decision making via a decision support system that also helps with forecasting, data mining, and helpful trend analysis.

The advantages that AI and humans have over each other would aid decision-making. Machines may assist people in overcoming complexity by using an analytical approach and well-computed calculations to extensive aggregate data, which is impossible for humans to do otherwise. On the other hand, humans can use their prior practices, imagination, creativity, and rumination to decide upon uncertain or equivocality decisions. Also, the limitations faced by AI in the decision-making process have been mentioned in the research work. In the end, the research gap noticed in all the research papers focused only on AI as the replacement for humans but not analyzing the Human-AI symbiosis in the decision-making process.

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