AI and Leadership

New Changes of Leadership Under the Development of Artificial Intelligence

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Abstract. Leaders are important for developing and implementing new strategic plans, as well as for interacting with and motivating employees to improve their commitment to the company's goals. Maintaining leadership skill development is critical to keeping on the right path. Enlightened corporate leaders recognize the problems of employees and put new progress of leadership theory into practice to create a more successful working environment. Meanwhile, artificial intelligence (AI), as a new technology, allows machines to perform difficult tasks that ordinarily need human intelligence. AI will increase the productivity of leaders by taking over some automated, mechanical, and administrative activities. It is difficult for artificial intelligence to replace human care, human thinking, and human interaction with human factors. Future leaders may need to adjust their attention to place more emphasis on these elements.

Keywords: AI · Leadership · Administrative works · decision-making · Human care

1 Introduction

Artificial intelligence and machine learning techniques provide a new perspective for business applications in the twenty-first century. Most people expect artificial intelligence (AI) to play a key role in company management [1]. As a result, some people claim that AI could endanger human leadership in the workplace. The reality is that AI is a potent force that will redefine, not replace, workplace leadership. Technology changes and organizational leadership should follow suit. Therefore, leaders must adjust to these changes more swiftly. AI is changing the way that leaders make decisions. In other words, leaders will use AI to simplify and enhance the decision-making process by reducing the cognitive processing of facts and information.

However, the use of artificial intelligence also poses some challenges for the management of leaders, such as data security and ethical and moral issues. Therefore, leaders need to change their leadership styles and philosophies with the times to meet these challenges. In addition, to improve operational efficiency and boost the bottom line of the firm, leaders need to pay more attention to human factors, such as personality and behavior. Although the application of artificial intelligence is developing quickly, no

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machine or robot could ever replace the special qualities of people, such as their humility, personalities, and vision. A good leader should pay more attention to soft skills in the future [2].

2 AI in Leadership

2.1 Advantages of AI in Leadership

AI has dramatically changed the definition of human leadership, and it will become more common in the workplace.

1. Automating internal procedures and tasks. Organizations should begin to consider how to automate the internal operations and processes required by the business related to the third-party platform. Leaders should treat AI as a teamwork and create ways to achieve this goal. Machine learning technology, especially computer vision and Natural Language Processing, could be used to create self-service platforms that provide cognitive workflow automation, allowing leaders and staff to deal with complex multistage procedures more effectively. Furthermore, machine learning systems can visualize many operations. In this way, leaders could visually compare each simulated strategy and select the most suitable strategy for their organization. Adopting machine learning technologies can save time and money for leaders, employees, and enterprises.
2. Improving leaders' outcomes and processes. AI could be applied rapidly and effectively by utilizing already-existing software tools or algorithms. In addition, AI develops a research strategy for your business to find and evaluate these tools. Companies employ them and evaluate them against current practices or competitive tools. Leaders can gain more knowledge by comparing the results and make more wise judgments. AI will help executives categorize and analyze a large amount of information, including data, images, and language. Human resources management will make extensive use of this. The staff review is a significant and intricate process that requires justification and appropriateness.
3. Enhancing human expertise: AI can improve the ability of leaders by providing them with real-time data insights, encourage social contacts among people, and connect them with robots and other machines that cooperate with people. These robots or machines can work alongside humans to increase work efficiency and precision [3].
4. The advent of the era of artificial intelligence will effectively improve the level of human resource management. Big data could assist company leaders in collecting, organizing, and digitally evaluating all HR management data. This can maximize the understanding of the existing state of human resources and optimize the value of employees' potential. Thus, the organization can continuously conduct in-depth analysis and improvement of each human resources management module to make more informed judgments regarding the work of each module. Artificial intelligence and big data technology enable human resource management to make judgments based on data instead of human experience and intuition [5].

2.2 The Risks and Limitations of AI in Leadership

First, with the increase of the quantity and quality of data in AI technology, decision-makers will face the difficulty of information overload. Furthermore, the allocation of

decision rights between AI and leaders is unclear. In other words, there is a difficult trade-off between when leaders should delegate decision-making power to AI tools and how much decision-making power leaders are prepared to delegate to AI tools [3]. Additionally, businesses that rely too much on AI systems also face the risk of collapse. AI is designed to assist managers in making better judgments. Overreliance on AI will lead to rigid management of leaders. Since artificial intelligence is a machine, it has the potential of malfunction. Although the probability of failure is very low, excessive reliance on it will hinder the organization from effectively handling emergency preparedness. Finally, contemporary artificial intelligence is not fully integrated into the social environment. It costs money to adapt various AI tools for various scenarios.

In addition, the substitution of manual labor with machine labor results in a diminished sense of social identity. Artificial intelligence can replace part of the repetitive physical labor performed by humans because of its accuracy, availability, and relatively low cost. Machines can achieve many tasks on assembly lines, and even specific non-creative mental labor can be performed by AI [4]. This poses a considerable difficulty for company human resource planning, especially whether allocating different types of work should be given to machines or employees. Existing staff may resist accepting new AI technology if they experience such inconsistencies. Employee resistance can weaken a company's incentive to innovate.

Furthermore, the technology for artificial intelligence is updated quickly. The organization's management faces the difficulty of ensuring whether the workforce's individual capabilities and overall quality can keep up with the advancements in artificial intelligence technologies. The employees of a company are the final executors of management decisions and are accountable for propelling the company forward. Alongside the development of artificial intelligence, enterprises should also provide immediate training for managers and the corresponding professional knowledge, concepts, and beliefs. As employees themselves, they should also modify their thinking and the need to adapt to the updates of the technological revolution quickly. Additionally, they should reposition their abilities and achieve breakthroughs in the technologies that they are proficient in.

Finally, using artificial intelligence to manage human resources necessitates a significant quantity of data as the foundational component; consequently, protecting individual privacy becomes the most critical obstacle and a potential source of danger [5]. Companies monitor the content of employees' work via software programs or electronic devices to access employee data that is both more complete and more effective. The access to data may raise employee privacy concerns, especially if the data pertains to the employee's surfing history on social networking sites, shopping site records, or audio. As a result, managing the boundaries of data gathering and controlling data use becomes a challenging issue for executives.

2.3 AI and Human Leadership

There may be some overlap between AI and leadership, which has led to extensive discussion about whether AI will eventually replace human leadership in the future workplace. The function of AI is like a decision-making system, which always maintains the current state of diagnosis and a perfect one-to-one related action. However, even

employing programmed decision machines to link the present condition with action is insufficient to capture the full complexity of human decision making [6].

Leaders can influence individuals and groups within the organization and help and guide them to achieve common goals. There are two essential components of leadership: soft and hard components. The hard elements of leadership are repetitive and mechanical, whereas the soft elements are adaptable and human. Hard leadership talents typically require technical and repetitive abilities, such as data analysis, strategic planning, and design. The interpersonal field of human leadership, which may be adaptable to the changing environment, such as listening skills, team building, humanization, and adaptability, is critical to soft leadership skills. The most important work of soft elements is to enable people to analyze the function of each skill and its impact on leadership.

AI has been quickly and widely implemented in business, notably in the process of business digitization. Data analysis, graphic design, and model simulation are only a small part of the repetitive and mechanized work that AI can help leaders to complete. Nowadays, AI can perform some administrative jobs more effectively, quickly, and affordably [7]. These tasks resemble the challenging aspects of leadership. Therefore, many people worry that AI will change the workforce, especially those simple and automated jobs.

The new relationship between AI and human is the collaborative function of human-AI decision-making. The ability of AI to quickly collect, process, and analyze data and provide real-time results can improve the analysis efficiency and help educational leaders make data-driven and evidence-based decisions [8]. For human factors, leaders must also deal with social information. Situational elements, cognitive processes, and emotional processes may affect leaders' decisions [9]. AI-assisted data-driven decision-making, however, sometimes conflicts with moral judgment based on values. Therefore, leaders must strike a balance between these two styles of decision-making to succeed [10].

3 Suggestions for AI New Leadership

In the future, AI will redefine leadership and collaborate with human leadership to improve corporate management. Leaders should utilize AI to support innovation management decisions, that is, to analyze resources by using big data analysis. AI connects new management processes such as consumer analysis, platform comprehension and communication methods, which is conducive to improving the organization's ability [11].

As suggested in previous studies, leaders should consider how to modify their leadership style to better utilize AI decision-making tools. Leaders should make full use of the advantages of AI tools in data processing, process modeling and other fields. Nevertheless, decision-making should not rely too much on AI, because it is only a tool to help leaders make better choices, not to replace them. To make effective decisions, it is necessary to evaluate not only objective data and evidence, but also social information, such as interpersonal relationships.

Therefore, leaders should use AI technologies to help them complete difficult leadership tasks to save time and improve accuracy. Leaders are working harder in the meanwhile to cope with social information and humanistic care.

3.1 Suggestions for Leaders to Change Their Leadership Style

How to Treat AI?

1. Utilizing AI in administrative tasks: A survey indicates that managers spend more than half of their time on management tasks [11]. These tasks could be performed by AI tools, which will save time and money. This is a technical relief for leaders. By automating the administrative processes, AI solutions can reduce the tedious, menial and repetitive management tasks of leaders.
2. Paying more attention to decision-making: Leaders should concentrate more on the analysis of data that AI cannot obtain and analyze and reduce the time to deal with administrative responsibilities. Managers may be familiar with and comprehend ethics, culture, and history. For strategic decision-making, managers should equip their innovative thinking with data analysis and interpretation. Therefore, in this situation, senior experience, judgment, and discretion seem to be more important characteristics of effective leaders.
3. Identifying the goal of AI: if the organization cannot clearly state the purpose of using AI, there will be conflicts between managers and AI tools. There are different types of AI. Organizations must actively pursue artificial intelligence solutions that meet their specific requirements. If the aim of the AI solution is not specified in advance, it is impossible to design the appropriate technology. To make use of the potential benefits of AI in strategic decision-making, businesses must apply AI technology to strategic decision-making. Decision-making authority will be transferred to AI, which will cause managers to lose some degree of control [12]. However, managers are usually not in a hurry to give up control [13]. Therefore, clarifying the reasons for adopting AI will ensure that each part has appropriate responsibilities.
4. Regarding AI as "staff": Managers should view AI as a partner and acknowledge that it is not necessary to "race against machines." Even if it is unlikely to automate human judgment, AI tools may significantly increase this effort by assisting decision support, data-driven simulation, and discovery tasks [14].

How Has Leadership Changed?

Learning and absorbing new information and technology: AI technology and techniques will be rapidly updated. To employ the latest technology to help them manage teams and set strategic direction, managers should continue to learn and accept new AI tools. The role of a competent manager is to introduce the technology to team members, let them use it, and help them understand how it can improve their work efficiency. Additionally, managers face difficulties in selecting new AI tools. Whether selecting customer relationship management (CRM) software or scheduling software, executives should consider the team's best interests. If leaders want to increase acceptance within the company, they should choose the most user-friendly solution [15].

Strengthening leadership's soft skills: communication, training, team building and the ability to handle social data are all leadership soft skills. This paper demonstrates the favorable relationship and influence between soft leadership abilities and individual entrepreneurial learning. Leaders with strong soft power can better manage their teams and cultivate an environment of precise teamwork to achieve their goals [16].

Paying more attention to humanistic care: AI cannot capture human emotions. The analysis results provided by AI are supported by objective data evidence. However, when leaders assess the impact of unpleasant or life-changing effects on one or more people, they will consider their emotional impact and adopt the characteristics of human empathy [17]. For instance, when AI analyzes the evaluation of team members, it solely considers attendance, performance indicators, and work accomplishment. However, AI was unable to analyze the exact reasons for poor working performance and low attendance. Employee mistakes or absences may occasionally not be their fault; Instead, they may be caused by physiological problems, or even team dynamics. These psychological issues require the sharp understanding of leaders. Leaders can use their soft skills instead of relying solely on AI tools to analyze reports generated to condemn or reward employees.

In the future, AI and human leadership will be combined to achieve a high level of leadership effectiveness and efficiency. With the development of AI, human leaders undoubtedly need to acquire new capabilities to adapt to the changing environment, but by doing so, we can optimize the beneficial impact of AI on company management.

4 Conclusion

As AI plays an ever-increasing role in all elements of the company, business managers must be prepared to adapt to the changing nature of leadership. In the future, AI will improve leadership and collaborate with leaders to achieve long-term success of the company.

However, even managers should not ignore the risks and limitations of using AI tools, they sill should regard AI as one of their employees and avoid relying on AI to draw conclusions. Leaders must consider more human and social factors when making the final choice.

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