Digital Transformation and Development of Enterprises Under the Background of Artificial Intelligence

Shijie Wu

Department of Business Administration, University of California, Irvine, CA 92697, USA

`shijiew6@uci.edu`

Abstract. Artificial Intelligence (AI) becomes popular in recent years, and it is a new technology that might change people's lifestyles. AI can bring many benefits to people and companies, and most companies are trying to apply AI to their business. This change is related to digital transformation, which adopts AI and other digital technologies to drive intelligent workflows by using data to help managers make faster and smarter decisions. Competition in the AI market is fierce, to survive, companies have to make changes and adapt to AI and digital transformation. Under the background of AI and digital transformation, this article is going to analyze the development of enterprises and the prospects and challenges that enterprises will face. This paper argues that in the context of digitalization, enterprises should fully recognize the necessity of enterprise digital transformation and vigorously promote the advantages of artificial intelligence. Companies need to make effective use of information, such as big data, to develop transformation strategies. At the same time, it is necessary to pay attention to cultivating the information technology ability of technical personnel to meet the development needs of enterprises.

Keywords: Artificial intelligence; digital transformation; enterprises

1   INTRODUCTION

AI technology has been a hot topic in the market in recent times, similar to the disruptive changes brought about by the Internet and phones, this new technology has the potential to alter people's lifestyles. AI has a lot of benefits to offer both individuals and businesses, and the majority of them are attempting to integrate it into their operations. This shift is associated with digital transformation, which uses AI and other digital technologies to power intelligent workflows and use data to support managers in making quicker and more informed decisions. The AI market is highly competitive, and businesses must evolve and adapt to digital transformation and AI to thrive. During the process of evolving and adapting, enterprises might get some benefits, like improving work efficiency and productivity, enhancing customer satisfaction, and providing new ideas for the companies after applying AI automation machines and virtual assistants. However, there are also some potential challenges that companies might encounter, and some of the challenges are difficult to overcome. For example, companies might face

currency, technical, and suitable issues when they utilize AI. Moreover, privacy, security, employment, and validity issues are all possible challenges that companies will encounter. Based on these problems, this paper did some research on them, and it provides some possible solutions to help the companies overcome these problems to to achieve better development.

2   PROSPECTS AND CHALLENGES OF ENTERPRISES DEVELOPMENT

Technology has changed people's lifestyles completely different from the past, and the newly advanced creation and application of technology, like the Internet, has further promoted the development of today's society. Phones, computers, Wi-Fi, and many other things that were born under the development of technology have brought so much convenience for human beings, for the current generation. Today, almost everyone owns a cell phone or a computer, with Wi-Fi inside the home. However, when these advanced and beneficial products first came out, nearly no one chose to buy them, only a few people bought them. Unaffordable price, unknown about the new stuff, fear of the unknown, unwillingness to make changes, surrounding people did not buy it, were all factors, as well as challenges, why people did not buy the first iPhone. Right now, AI has been created, and it is a new technology that faces the same situation and challenges as the first iPhone. To improve the society and make people's lives much more convenient, enterprises have to apply the use of AI to help them improve. Once everyone starts using AI, in other words, when AI becomes a part of people's lives, like phones and computers, their lifestyle will be changed again, although there are still many challenges.

2.1   Prospects and Benefits

The future of AI is promising, and it has great development potential. There are so many benefits that AI can bring to people and the companies, and once starts using AI, the benefits would last for a long time, even permanently.

Manufacturing Automation. By using AI technology, companies can achieve the goal of manufacturing automation, which improves production efficiency significantly. They can replace most of the manufacturers with machines that apply AI, and the machines can run by themselves day and night without any rest. Companies would save a lot of money from hiring assembly line employees, and they don't have to wait when the employees are sleeping and resting on weekends, since machines can work almost all the time. Furthermore, machines tend to have a lower chance of making a flawed product, they will follow the setup for the majority of the time, while human workers depend on their status, if they feel bad, they probably will make mistakes. As a result, AI can improve the work efficiency and productivity of companies [1].

Enhance Customer Experience. AI can enhance the customer experience in a multi-channel environment. The application contains recommendation system, virtual assistant, chatbot, and voice bot. Recommendation system uses AI and Big Data to help

analyze the preference of customers, and then delivers the relevant information or products to them, which provides a better experience for them and attracts more customers. Virtual assistants, chatbots, and voice bots can deal with a large number of clients at the same time, especially when they receive repeated questions or regular tasks, which improves customer satisfaction [1].

Generate New Relevant Information. Through studying, AI can generate new information related to the companies and the market, or it can develop new business models for the companies. Better data analytics will make companies think in a different and more creative way, and with the new information generated by AI, workers can reduce their time spent on the daily tasks, decreasing human errors. In this case, companies can focus on the customers, so that they can know more about the customers to think about the new products and new market strategies [1].

2.2   Challenges

Despite the future of AI looks bright, the challenges and problems still exist, and some of them require a large number of effort to solve and overcome. Enterprises might take a long time to figure out how to overcome the challenges.

Capital, Technical, and Adaptive Challenges. When companies decide to transform themselves from a traditional type into digitalized model that relies on AI, they have to spend an enormous amount of money to purchase the AI technique and relevant equipment. Most companies find it difficult to collect enough money to purchase the AI technique and equipment, and they have to give up. Once the companies have enough money, they have to know well about the AI, otherwise, they will find it hard to replace the human employees with the AI. The problem is that not many people know well about AI, and this is known as a technical issue. One of the reasons that caused this problem is because some companies lack first-hand information, they lack enough references, and some of the data are secured. Furthermore, the companies that have information about AI are unwilling to share the information, which makes the problem more serious [2]. Over time, this problem will be difficult to solve, and in the end, only a few companies can master AI technology. When companies have enough money and information about AI, they can change from traditional machines and employees to AI-dominated machines and technology. However, a new issue arises, which is the adaptive issue. Some companies spend a lot of money and effort applying AI technology, but soon they might find that the production capacity does not meet their expectations or even produce less or worse goods than before.

Privacy and Security Issues. AI has made customers worried about their privacy, because AI has already been applied in some apps, like Amazon, for virtual assistants and recommendation systems, and customers worried that their privacy would be stolen and sold to others. More importantly, these worries will create chain reactions, and these reactions will influence and spread to the enterprise level, like the reputation of the companies, and the relationship between the companies and the customers [3]. Additionally, the chain reactions will spread to the social level, for example, apps might be seen as monitored tools of the companies, and this might cause the customers to lose confidence in the companies and their apps [3].

Employment Issues. With the development of AI, many jobs will be replaced with automated machines and AI, and a tremendous number of people will lose their jobs. The employment rates will drastically decrease, but the number of unemployed will increase, and this will cause a problem that many people can't find a job. Current employees, for sure, do not want to lose their jobs, and they might resist or be against the development of AI. Although AI can't replace every job, it can replace most of the jobs, and the companies will have fewer human employees, which changes the whole company, including traditional culture, like team building activities and communication [4]. Another thing that employees will be reluctant to adopt AI is because lack of motivation, they can't receive any benefits or advantages from AI, and what they will get is losing their jobs, in this case, none of them would agree with the application of AI [4].

Validity Issues. Although AI can collect users' data and analyze their preferences of to recommend related information or products, the accuracy of the recommendation is not promising. Users might receive information or goods that they are not interested in, and they probably will continue to receive irrelevant content. Moreover, virtual assistants and chatbots can deal with a lot of clients simultaneously and respond to the questions, but the validity of the response is a problem, in other words, the response may not help anything with the clients. AI technology, in this case, is still facing some problems that are hard to solve.

3   MEASURES

Problems and solutions exist together, and although there seem to be many challenges, many methods and ways are still feasible to solve them. First of all, what is digital transformation. The goal of digital transformation is to enhance societal welfare, productivity, and value generation by implementing disruptive technology [5]. Digital transformation adopts AI, automation, hybrid cloud and other digital technologies to use data to drive intelligent workflows and help managers make decisions faster and smarter. In the past few years, firms have faced growing pressure to adapt due to globalization [6]. For organizations to succeed in highly competitive environments, they must effectively integrate, and only digital processes and collaboration technologies can lead to efficient integration [6]. In light of this, digital transformation's significance has grown.

3.1   Popularization, Support, and Strategy

The general way to achieve better development through digital transformation is to broadly popularize the benefits of digital transformation and AI and vigorously promote them in order to make more people and companies understand and know the benefits of digital transformation and AI. Another way is for the government to support and issue corresponding policies and subsidies to attract more people and companies towards digital transformation. Furthermore, implementing digital transformation requires a clear strategy, promising the upper management with change, active employee engagement processes, and a focus on changes in customer needs and interests [7].

3.2 Improve Information Technology Capabilities

The application of new technology is really complex and requires enough information and understanding of it to implementing it successfully. AI technology is more complex and difficult, so, it requires more effort and different competencies from the managers and experts to deal with the new technologies related to business process digitization, automation, and use of AI [7]. The different competencies that are required from the managers and the experts include computer science, big data analytics, predictive analytics, cybersecurity, co-creation, working with virtual assistants, etc [7]. People need to be knowledgeable in the above fields through studying and learning so that they can master AI technology and use it skillfully.

3.3 Use Information to Strategize

The traditional method is to use AI tools to support decisions about prioritizing organizational social responsibility programs for integration into corporate strategy [8]. Leveraging traditional AI methods to help executives make decisions about product pricing, investment in promotions, other marketing strategies, and production and distribution plans [8]. Admittedly, using AI tools through traditional methods helps enterprises and managers, but these traditional methods would quickly become outdated as time goes by, especially in this fast-paced era with so many competitors. To survive in the fiercely competitive market, companies have to combine the traditional method with the new method and use them together when applying AI tools. Before starting to implement the new AI system, managers need to collect as much data as possible from old machines and the company's past state for analysis to help with the application and development of the new system [9]. Executives also need to combine the current and past conditions of the company to formulate plans to deal with potential challenges, like technical issues and adaptive issues [9]. The combination acts as a focal point for organizing, setting priorities, and carrying out a company's digital transformation initiatives [10].

4 CONCLUSION

In conclusion, this paper states the background of AI in recent years, and it discusses the prospects and challenges that enterprises might face during the development and transformation towards AI and digitalization. It also talks about some possible solutions that can help enterprises to achieve better development through digital transformation. To better prepare for AI and digitalization, companies and people need to know more about them, like the general information and benefits, to make a clear strategy, and the government should also support AI and digitalization by issuing relevant policies and subsidies to attract more companies and people towards digital transformation. Furthermore, the managers and the experts have to be knowledgeable and master abilities in different fields, and they have to combine the traditional methods with new methods when applying AI technology to companies. Transforming from a traditional enterprise to a digital enterprise is difficult, and it has many barriers that require sufficient

expertise from the managers and experts to overcome. However, once a company successfully transforms into digital, its future benefits will be much greater than before, and these benefits will continue to exist and bring profits to the company. In the near future, AI will be widely popularized and used, and people will be inseparable from AI in their daily lives. This article hopes that the solutions mentioned in it can help enterprises transform into digital and make people's lives better and more convenient.

REFERENCES

1. Reier, F., Ricardo, F., Luis, M. G. G.: Digital transformation and artificial intelligence applied to business: Legal regulations, economic impact, and perspective. Laws 10(3), 70 (2021).
2. Götz, M., Małgorzata, B. P., Barbara, J.: International aspects and challenges of digital transformation. Gospodarka Narodowa. The Polish Journal of Economics 293(1), 87-102 (2018).
3. Schwertner, K.: Digital transformation of business. Trakia Journal of Sciences 15(1), 388-393 (2017).
4. Nambisan, S., Wright, M., Feldman, M.: The digital transformation of innovation and entrepreneurship: Progress, challenges, and key themes. Research Policy 48(8), 103773 (2019).
5. Ebert, C., Carlos H. C. D.: Digital transformation. IEEE Softw 35(4), 16-21 (2018).
6. Kraus, S., Paul, J., Norbert, K., Alexandra, W., Nuria, C. B., Norat, R. T.: Digital transformation: An overview of the current state of the art of research. Sage Open 11, 3 (2021).
7. Mavlutova, I., Tatjana, V.: Digital transformation of the financial sector and challenges for competencies development. In 2019 7th International Conference on Modeling, Development and Strategic Management of Economic System (MDSMES 2019) 161-166 (2019).
8. Kitsios, F., Maria, K.: Artificial intelligence and business strategy towards digital transformation: A research agenda. Sustainability 13(4), 2025 (2021).
9. Albukhitan, S.: Developing digital transformation strategy for manufacturing. Procedia computer science 170, 664-671 (2020).
10. Chanias, S., Thomas, H.: Understanding digital transformation strategy formation: Insights from Europe's automotive industry (2016).