Artificial Intelligence and Its Impact to the Operations of Enterprises: Basis for Strategic Plan

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Abstract. Artificial intelligence has had a profound impact on the production and operation management of enterprises, including human resource management, financial management, production management, and decision-making assistance. Artificial intelligence can improve production and management efficiency, and reduce costs. It can improve the quality and specialization level of financial information processing, achieve intelligent financial management, and improve the efficiency and accuracy of financial management. The development of artificial intelligence may have an impact and crowding out effect on jobs with primary repetitive standardized processes, leading to a reduction and adjustment of some positions, while also providing new employment opportunities. The application of artificial intelligence in production and operation management can strengthen enterprise supply chain management, improve quality inspection efficiency, reduce operating costs, improve production efficiency, enhance the scientificity of enterprise management, thereby improving management efficiency and economic benefits, and promoting enterprise development and competitiveness. At the same time, it is necessary to pay attention to data security management and privacy protection, reduce the cost of using and maintaining artificial intelligence, continuously improve and perfect artificial intelligence tools, effectively enhance the use of artificial intelligence in accordance with regulations, and pay attention to the risk of personnel unemployment caused by the application of artificial intelligence.

Therefore, it is suggested that senior leaders of enterprises should attach great importance to the application of artificial intelligence, increase funding, provide budget support and resource investment, strengthen data quality management and customized analysis capabilities, reduce usage and maintenance costs, promote human-machine cooperation, strengthen the application of artificial intelligence in business management, attach importance to employee training and transformation support, and pay attention to technological development trends, optimize and expand

application scenarios, Actively explore and apply artificial intelligence tools to enhance the competitiveness of enterprises.

The government should formulate relevant policies and regulations, strengthen education and training support, promote the development of the artificial intelligence industry, strengthen international cooperation and exchanges, formulate policies to promote employment and social security systems, encourage innovation and entrepreneurship, strengthen supervision and regulation, and promote the comprehensive application of artificial intelligence in enterprise management.

Keywords: Artificial Intelligence; Enterprise Management; Employment.

1. Introduction

In 2016, Google Go's artificial intelligence "AlphaGo" defeated world Go champion Li Shishi 4-1, marking a new milestone in the history of artificial intelligence. AlphaGo won the Go game with an overwhelming advantage, and we can see that artificial intelligence has shown an absolute advantage in the Go field (Nanmo, 2023). Although artificial intelligence currently only works according to human programmed procedures, it has been applied in many fields, including computer science, information theory, cybernetics, automation, biomimetics, biology, psychology, mathematical logic, linguistics, medicine, and philosophy. In the future, some tasks with high mechanical and repetitive capabilities may be replaced by artificial intelligence. For example, autonomous vehicles are expected to emerge in the coming years, replacing the job of drivers. In today's life, we can see that artificial intelligence has shown advantages in industries such as industry and information technology. Many workers on assembly lines have been replaced by artificial intelligence robots. Compared to the high salaries, social security, and vacation requirements that humans require, artificial intelligence provides lower costs and brings higher work efficiency (Fengxingzhe, 2021).

Modern technology is constantly developing and advancing. In recent years, especially the emergence of ChatGPT, a typical representative of generative AI, has had a profound impact on the modern labor and employment environment. It not only makes many jobs more convenient and efficient, but also has a significant impact on some professions. Artificial intelligence AI has gradually replaced some simple and repetitive tasks with automation or AI. For example, the following work areas:

Manufacturing: The emergence of artificial intelligence has had a significant impact on the traditional mechanized production industry. The application of automation and robotics technology in the manufacturing industry is becoming increasingly widespread, and more and more manufacturing enterprises are adopting automated production lines, which puts many workers at risk of unemployment and may lead to a reduction in the positions of some production line workers, assemblers, and quality inspectors.

Logistics and warehousing: Automated logistics and warehousing systems can quickly and accurately complete goods handling, sorting, and other tasks, which may affect warehouse workers, logistics delivery personnel, and other positions.

Customer service: AI customer service robots and intelligent voice assistants can handle a large number of customer inquiries and questions, which may affect positions such as customer service representatives and telephone operators.

The catering service industry: Artificial intelligence has also had a significant impact on the service industry. In service-oriented enterprises such as restaurants and cafes, many tasks have been replaced by automation technology, such as automatic ordering, automatic coffee machines, and so on.

The occupations affected by AI mentioned above mainly have a significant impact on junior workers who engage in repetitive work. Through AI, automation and intelligent management can be achieved, and many robots and software can already replace humans for the simple repetitive work positions mentioned above.

But it is not only the job positions of the above-mentioned junior workers that will be affected, AI also has a huge impact on knowledge workers and enterprise management. With the rapid development of generative large language models such as ChatGPT, knowledge workers are facing many challenges and opportunities. The application of natural language processing and ChatGPT intelligent assistant technologies in office environments makes office work more efficient and intelligent. They can process and understand human language, and perform various tasks such as speech recognition, semantic analysis, and automated replies. At the same time, writing articles may be completed through ChatGPT, such as news reports, blog articles, product descriptions, etc, Although human editing and proofreading are still needed, the number of clerical or editorial positions can be greatly reduced

(diligent Xiaoxinghua, 2023). For example, in finance and accounting positions, AI technology can have a wide range of applications in financial management and accounting, such as intelligent auditing and automatic report generation, which may reduce the number of positions such as financial analysts and accountants.

But artificial intelligence not only poses a threat and reduction to some job positions, but also brings new opportunities. Currently, the largest practitioner of artificial intelligence is not the IT department, with 67% of surveyed enterprise respondents indicating that they are using artificial intelligence automation to detect security intrusions and user issues. 32% of companies believe that artificial intelligence will mainly affect sales, marketing, or customer service. 20% of companies believe that AI will have the greatest impact on non customer oriented corporate functions, including finance, strategic planning, corporate development, and human resources. Some companies are involved in multiple industries simultaneously, including automotive, banking and financial services, energy, healthcare, life sciences, industrial manufacturing, and retail. This type of enterprise across multiple fields emphasizes that artificial intelligence will become one of the important factors affecting work methods in the coming years. For example, guiding customer service representatives to solve customer problems more quickly and predict future purchase intentions, quickly and safely recording a large number of overnight transactions at financial institutions, or managing the onboarding process for new employees to save time for human resources professionals. (Country Trade and Investment Environment Information Semimonthly, 2017)

The important impact of artificial intelligence on knowledge workers is its potential to assist decision–making. Through data analysis and machine learning algorithms, artificial intelligence can process and analyze a large amount of information, and provide decision support. This can help knowledge workers in professional fields to quickly obtain accurate data and insights, thus making smarter decisions, such as in the fields of medical diagnosis, financial investment, marketing, and other work, Therefore, artificial intelligence AI can also be a powerful assistant for knowledge workers. For example, marketing AI assistants can use AI technology to promote products in the sales and marketing fields, such as intelligent recommendations and automated advertising placement, which can help sales personnel screen and filter target customers faster and more accurately.
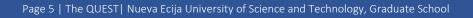
Therefore, in the context of the rapid development of artificial intelligence and its rapid integration with enterprise management and daily life, artificial intelligence technology will first have a replacement effect on frontline jobs with high repeatability, regularity, and highly streamlined operation characteristics, and even on knowledge intensive job positions. However, it will also greatly reduce labor costs and improve work efficiency, It has a significant impact on the production and management processes of enterprises, and enterprise decision-makers must pay attention to the profound impact of artificial intelligence technology on enterprise management and strategic development.

2. Methodology

This study adopts a descriptive research design to understand the impact and challenges of the application of artificial intelligence on enterprise management. McCombes (2019) believes that descriptive research accurately and systematically describes a group, situation, or phenomenon. By describing the application of artificial intelligence technology in enterprises and the production, operation, and management of enterprises, grasp the foundation of research. In descriptive research, researchers only observe the true nature of interest phenomena; Do not attempt to modify individuals, conditions, or events. Amante (2010) explained that descriptive research is related to collecting facts with appropriate explanations. Descriptive methods require more than just data collection, and should provide the true meaning of the obtained data based on the research objectives. This study followed a survey design, where data was collected through a survey questionnaire. This research method and design are suitable for determining the research needs between the application of artificial intelligence technology and enterprise management.

2.1. Sampling Procedure

This study used non random sampling techniques for purposive sampling. This is a non-probabilistic sampling strategy, where researchers select population members to participate in the study based on their own judgment (Crossman, 2018). Therefore, researchers chose a 'representative' sample to meet their goals or approach individuals with specific qualities.

This study uses survey questionnaires as a tool for collecting data, selecting three typical industries that apply artificial intelligence, namely the manufacturing industry, financial services industry, and information technology industry, to prepare survey questionnaires that can cover a wide range of characteristics in these three industries.

2.2. Respondents

The focus of this study is to select 120 employees from different positions, including Soya Corporation in China's manufacturing industry, Huaxia Bank Beijing Branch in the financial services industry, and Beijing Yunke Weiye Information Technology Co., Ltd. in the information technology industry, as respondents. Based on the job content and business processes of the job position, as well as their personal education and job characteristics, Compare the impact of the application of artificial intelligence in different industries on employees in different job positions and knowledge and ability categories.

Using these three companies in their respective industries as typical representatives, different positions of personnel were selected for research. Among them, Soya Company in the production and manufacturing industry selected 40 people, Huaxia Bank Beijing Branch in the financial services industry selected 40 people, and Beijing Yunke Weiye Company in the information technology industry selected 40 people.

2.2.1 Distribution of Respondents

Questionnaire surveys and personnel interviews were conducted, including company owners, management personnel, and grassroots staff, The selection of personnel fully covers different departments and job positions of the three enterprises, and is carefully selected to ensure sufficient representativeness.

Table 1 *Personnel Selection Registration Information Form*

Industry	Sample	%
Soya Company	40	33.33
Huaxia Bank Beijing	40	33.33
Beijing Yunke Weiye	40	33.33
Total	**120**	**100**

3. Results and Discussion

The eight (8) statements in assessment correspond to how to describe the application of artificial intelligence tools in enterprise operations. These statements focus on describing data management and decision-making.

In summary, the average score of the 8 evaluation indicators for data management and decision support in the above survey was 3.24, which did not reach the highest level of recognition. This indicates that there is still a certain distance between the application effect of artificial intelligence in enterprise data management and decision support and the expected effect. Of course, the importance and effectiveness of applying artificial intelligence for data analysis in enterprise management have been widely recognized, And it is also recognized that data analysis needs to be based on a large amount of historical transaction data, so improving data quality to support decision-making, helping enterprises reduce risks, optimize business processes, and enhance the scientific nature of decision-making has also been recognized to a certain extent. However, there are still certain expectations and challenges regarding data quality, comprehensiveness of data analysis, and automatic generation of reports. Therefore, when applying data analysis, enterprises need to ensure data quality and security, and conduct customized analysis based on specific business needs and problems to achieve more accurate and reliable decision support.

4. Conclusions

Artificial intelligence tools are still in the early stages of enterprise management and need further improvement to make them more intelligent and user-friendly. At the same time, enterprises should attach importance to technical training and service support for employees, ensure the use of high-

quality data for model training, and improve the accuracy of artificial intelligence. Senior leaders of enterprises should attach great importance to the application of artificial intelligence in enterprise management, arrange dedicated budget support, encourage employees to actively participate, ensure continuous resource investment, learn from successful cases of peers in the market, and promote the comprehensive application of artificial intelligence tools in enterprise management. Enterprises should actively explore and apply artificial intelligence tools to enhance their competitiveness and ability to adapt to rapidly changing market environments. At the same time, enterprises should also pay attention to the development of artificial intelligence technology and innovation in application scenarios, keep up with the trend of technological development, continuously optimize and expand the application of artificial intelligence tools, in order to achieve higher levels of productivity and business management benefits.

Acknowledgements

References

Amante, Beatriz. (2010) *Evaluation of Methodology*. https://www.academia.edu. Annie Lowrey. The End of Poverty: The Intelligent Age, Avoiding Technological Unemployment, and Reshaping the World [M]. Beijing: CITIC Publishing House, 2019: 25–27.

Ant Doc, Impact and Suggestions on Employment Situation of Artificial Intelligence and Robots, https://www.mayiwenku.com/p-30524452.html, 2022.1

BaoDianBaPing,BaiduWenku，https://baijiahao.baidu.com/s?id=176442740624 6879910&wfr=spider&for=pc，2023.4.28

Cai Min, Current Situation and Impact on Employment of Artificial Intelligence Industry in Anhui Province, 2022.

Chang J H, Huynh P.. Asean in Transformation the Future of Jobs at Risk of Automation [EB/OL]. https://www.ilo.org/wcmsp5/groups/public/---

ed_dialogue/---act_e-mp/documents/publication/wcms_579554.pdf ,
2016 -07 -31.

Chen Fengxian, Proactively Addressing the Impact of Artificial Intelligence on Employment. China Labor Net (2023), https://baijiahao.baidu.com/s?id=1767853925968258632&wfr=spider&for=pc

Complexity, Zhihu, opportunities and challenges brought by AI to enterprise management, https://zhuanlan.zhihu.com/p/655138611, 2023.9.23

Chen Yingying, Wang Ying, Liu Huaige, Lan Yin, Research on the Impact of Artificial Intelligence on Enterprise Management in the Chinese Market, https://www.fx361.com/page/2020/0204/6335000.shtml, 2020.2.4

Crossman, A. (2018, September 28). Retrieved from ThoughtCo: http://www.thoughtco.com/purposive-sampling-3026727

Diligent Little Apricot Flower, Baidu Wenku, https://wenku.baidu.com/view/8df6f9f58462caaedd3383c4bb4cf7ec4afeb6a3.html , 2023.7.30

Fan Changyu, Tang Binbin, Half of the Positions Are Replaceable: Beware of the Technological Unemployment Risk of "Machine Replacing Humans", Academic Forum, 2020.3

Feng Jianwei, Reflections on the Application of Information Communication and Artificial Intelligence Technology in Company Business, September 2019

Fengxingzhe, the latest artificial intelligence and college student employment,https://max.book118.com/html/2021/1110/8001055066004034.shtm November 10, 2021

Grace K, Salvatier J, Dafoe A, et al.. Viewpoint: When Will AI Exceed Human Performance? Evidence from AI Experts[J]. Journal of Artificial Intelligence Research, 2017（62）.
In the era of artificial intelligence, how to ensure digital security? https://m.thepaper.cn/baijiahao_24256509, 2023.8.16

Industry News, China's Industrial Robot Sales Reached Nearly 37,000 Units in 2013, Accounting for 1/5 of Global Sales, https://asiabearing.gymf.com.cn/news/7428, 2014.7

In a Nutshell, Preparing for the Future of Work: The Impact of Artificial Intelligence on the Job Market,

https://baijiahao.baidu.com/s?id=1763482055427765066&wfr=spider&for=pc. 2023.4

Li Kaifu, Li Kaifu Talks about Artificial Intelligence: Repetitive Work Will Be Replaced by Machines in the Future, Geek Park, https://baijiahao.baidu.com/s?id=1563268602871717&wfr=spider&for=pc, 2017.3

Liu Pei, Discussion on the Application and Influence of Artificial Intelligence in Enterprise Management, https://www.doc88.com/p-2394783797175.html, 2019.5.29

McCombes, S. (2019, May 15). Scribbr. Retrieved from https://www.scribbr.com/methodology/descriptive-research

Nanmo, standing on top of the wind again, can Microsoft continue to write a legend? https://www.sohu.com/a/646440815_121124370 2023.2.26

Ruiwen.com, Research Report on the Impact of Artificial Intelligence on Modern Enterprise Management, https://www.ruiwen.com/baogao/5938129.html，2022.10.12

PWC (PricewaterhouseCoopers). UK Economic Outlook [EB/OL]. https://www.ncsl.org/Portals/1/Documents/nalfo/USEconomicOutlook.pdf，2019-09-18.

Semimonthly publication of information on national trade and investment environment.http://trb.mofcom.gov.cn/article/zuixindt/201703/20170302544494.shtml，2017.3.31

Wang Jun, Chang Hong, Research Progress on the Impact of Artificial Intelligence on the Labor Market, 2021.8.

World Bank Group. World Development Report 2016: Digital Dividends[EB/OL.http://pubdocs.worldbank.org/en/845911452690992379/WDR2016MainMessages-CH-INESE-WebRes.pdf，2016-05-31.

Wisdom Tooth Technology, The application of artificial intelligence in the field of customer service (methods to improve customer satisfaction), https://www.sobot.com/blog/article/5991/view.html，2023.4.26

Yang Liu, Zhang Yu, The Impact of Artificial Intelligence on Employment for College Students, https://www.gwyoo.com/lunwen/jylw/dxsjylw/201905/697934.html, 2022.5