

# Collaborative Application of Artificial Intelligence in Supply Chain Management and Industry-financial Integration

Yunqi Lin, Jingxue Yuan, Liurong Lu, Kaiting Zeng

Guangzhou Institute of Technology, Guangzhou, Guangdong 510800, China

## Abstract

Since the 21st century, with the continuous development of information technology and computer technology such as big data, cloud computing, the Internet, and the Internet of Things, it has also promoted the rapid popularization of artificial intelligence in various fields. Artificial intelligence has become an important part of technological innovation in the new era. Lead. As an important branch of computer technology, artificial intelligence is increasingly playing a more important role in supply chain management and corporate business and financial integration. Taking the development of artificial intelligence as the background, this article explores the problems and reasons in the development of artificial intelligence, supply chain management, and industry-financial integration at this stage, and proposes targeted suggestions to help enterprises realize artificial intelligence in their management work. The collaborative application of supply chain management and Industry-finance integration lays the foundation.

## Keywords

Artificial Intelligence; Supply Chain Management; Industry-financial Integration; Collaborative Application.

## 1. The Development Status of Artificial Intelligence

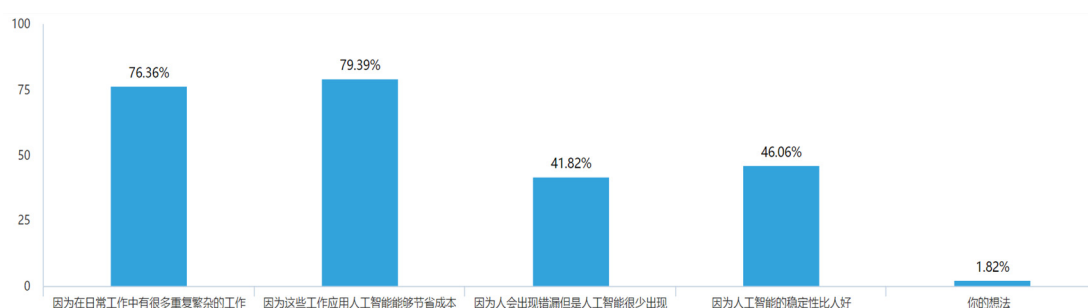
Artificial Intelligence (Artificial Intelligence), the English abbreviation is AI. Since it was proposed in 1956, it has continued to have an impact on the world. Artificial intelligence is a product of social development and technological innovation, and an important technological form that promotes human progress. So far, the development of artificial intelligence has become the core driving force of a new round of technological revolution and industrial transformation, and it is having an extremely profound impact on the world economy, social progress, and people's lives. In 2020, the overall expenditure of the global robot and drone market reached 124.57 billion U.S. dollars, a year-on-year increase of 13.4% compared to 2019. Among them, China is the world's largest market for robots (including drones). The country has continuously introduced various policies to promote the development of artificial intelligence, including logistics, medical, catering, enterprises, drones, automobiles, finance, services and other industries. With the continuous development of Internet technology, promoting the integration of industry and finance has gradually become a major trend in today's social development. At present, 76.83% of people believe that artificial intelligence can be applied to many repetitive and complicated tasks, and 79.27% of people believe that artificial intelligence is Application can save costs, 41.46% of people think that artificial intelligence is highly accurate and rarely makes mistakes. Artificial intelligence technology plays an important role in the realization and optimization of corporate business and financial integration. It can shape a shared database, realize dynamic accounting information processing, and form an information chain operation between business and finance, which is convenient for corporate management and development. At present, my country's computer and Internet technologies are booming, and the degree of opening up to the outside world is also increasing. New technologies such as "Internet+", big data, and artificial intelligence are developing rapidly. In

the future, the collaborative application of artificial intelligence in supply chain management and the integration of industry and finance will form real-time monitoring of information on the financial and business of enterprises, thereby reducing enterprise costs and achieving comprehensive process control and risk management. Eventually, the collaborative development of artificial intelligence and humans can be realized.

## 2. Analysis of the Status Quo of Artificial Intelligence in the Collaborative Application of Supply Chain Management and Industry-finance Integration

At this stage, the application of artificial intelligence has involved many different aspects, and the application of supply chain management and business-finance integration is also particularly prominent. Supply chain management is the use of information technology and management technology to integrate the business processes of business partners in the supply chain, so as to effectively manage the entire process from raw material procurement, product manufacturing, distribution to delivery to end users. Business-to-finance integration is the abbreviation for combining business experience and financial management, which is particularly important for improving the economic efficiency of enterprises.

A. The development of artificial intelligence and supply chain management. The new crown epidemic has promoted the accelerated development of intelligent supply chain management in 2021. The application of artificial intelligence to supply chain management also has a certain impact on its related logistics, information flow, and cash flow. According to survey data, people believe that the reason why artificial intelligence can be applied to logistics, information flow and cash flow has many advantages. Different factors. (See Figure 1 for details)



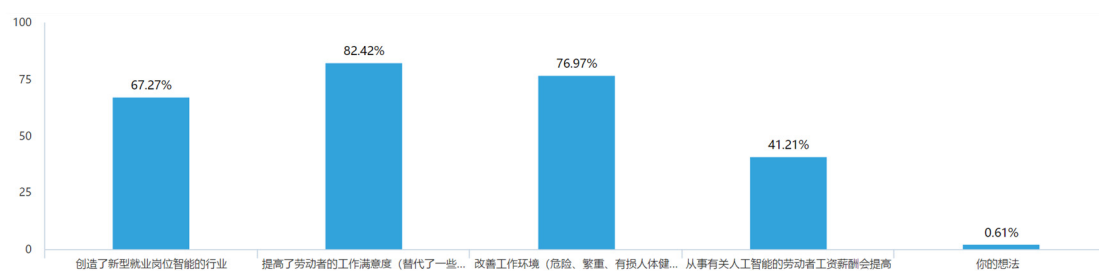
**Figure 1.** Reason analysis of the application of artificial intelligence in logistics, information flow, and cash flow

Although the supply chain industry used to view intelligent transformation from the perspective of efficiency and cost, it is now more concerned with agility and flexibility. Companies can customize and flexibly adjust their supply chains according to market needs to better play the role of their ecosystem partners, and artificial intelligence will be the key to real-time supply and demand matching. In 2021, supply chain managers will accelerate the adoption of artificial intelligence, so that employees have a better experience, provide intelligent insights for changing market conditions, and enable them to accurately predict supply and demand in real time.

B. The integrated development of artificial intelligence and industry finances. The development of artificial intelligence in the context of new infrastructure has brought changes and challenges to corporate financial management. In the era of intelligence, it is also required that corporate financial management should not be limited to financial accounting, but should be transformed into management accounting and strengthen cooperation with business departments. The

communication and integration of enterprises will accelerate the pace of industry-financial integration, and give better play to the value of financial management to the enterprise. The development of artificial intelligence has brought many positive effects on the integration of business and finances, which is of great significance.

C. The coordinated development of artificial intelligence in supply chain management and Industry-finance integration. Judging from the current industrial application of artificial intelligence technology, the field of artificial intelligence has a good development prospect in supply chain management and Industry-finance integration. At the same time, the integration of industry and finance under the background of artificial intelligence can effectively realize the sharing and integration of supply chain information, thereby optimizing supply chain management. In the future, the collaborative application of artificial intelligence in supply chain management and business-finance integration will bring creative effects.



**Figure 2.** The effects that artificial intelligence can create in supply chain management and industry-financial integration

### 3. The Predicament of the Coordinated Development of "Intelligence", "Supply Chain" and "Industry Finance"

In the development of the era of science and technology, networks are interconnected, which is more conducive to the integration of network management environment, cost and efficiency. However, because of the one-sided pursuit of the integration of artificial intelligence and other fields of work, the problems in development are ignored. According to the results of the survey report, the development dilemma of artificial intelligence in the collaborative application of supply chain management and industry-financial integration is mainly reflected in the following four aspects:

A. The measures to keep information confidential are not strong enough. 54.55% of the people in the questionnaire believe that artificial intelligence will cause some information leakage. The large amount of personal and corporate data that artificial intelligence technology is exposed to in the application process, supply chain production, and transportation environment will be remembered and stored by artificial intelligence. At the core of the artificial intelligence system, and applied to different fields.

B. Artificial intelligence and human labor compete with each other. While the field of artificial intelligence opens a large number of new jobs, it will inevitably lead to unemployment in some banking, accounting, service and other industries due to the large-scale application of artificial intelligence technology, which will affect the country's economic development; in the integration of intelligence and supply chain development, Comprehensive talents are needed, which will lead to the survival of the fittest. 78.18% of people hope that artificial intelligence and human cooperation will improve together, and 64.24% believe that artificial intelligence has a strong learning ability, which will cause unemployment in highly repetitive services, accounting and other industries.

C. Small and medium-sized enterprises lack a comprehensive plan for the funding budget for the use of artificial intelligence. 66.67% of people think that artificial intelligence is relatively expensive for some small and medium-sized enterprises. Artificial intelligence technology has not been completely perfected and popularized. The technical requirements for chips and the high cost have caused some companies to fall behind. In addition, the financial department of the enterprise has insufficient strength and depth in budgeting and execution, which leads to deviations between the actual execution results and the budget, and the system cannot be used to coordinate supply chain members in the process of supply chain management to minimize the cost of the entire supply chain.

D. The enterprise cannot discover the artificial intelligence problem in time and cause losses. 63.03% of people believe that if there is a problem with artificial intelligence, it will cause greater losses to the enterprise if it is not detected in time. Artificial intelligence and science and technology develop together. During the development of universal use of artificial intelligence, failure to find problems such as artificial intelligence failures in time will reduce work efficiency, cause huge losses to enterprises, and reduce economic effects.

#### **4. Reasons for the Predicament of Coordinated Development of "Intelligence", "Supply Chain" and "Industry and Finance"**

In the current big data environment, "artificial intelligence is a strategic technology leading this round of technological revolution and industrial transformation, and it has a "head goose" effect with a strong spillover and driving force." The rapid development of science and technology has not only created social wealth, but also brought many difficulties. These difficulties hinder our further development, but at the same time it also brings us enlightenment on how to avoid difficulties and develop "intelligence" more effectively. The integration of "supply chain" and "industry and finance" is worthy of our thinking.

1. Data transparency brings disadvantages. In the questionnaire we released, 54.55% of people believed that the transparency of artificial intelligence data made our information insecure. When we are going to work on data analysis technology, we will use big data, but it is easy to lose data while collecting data, and these data will be used, such as fingerprint unlocking, face recognition, voice input Wait. When collecting and storing, because the information becomes more and more transparent, it is easy to be stolen.

2. Fierce competition and increased demand. Nowadays, the population is relatively large, and the number of college graduates is increasing year by year, which intensifies the demand for positions. The survey found that 64.24% of people are worried that artificial intelligence will cause most people to lose their jobs. While artificial intelligence is being vigorously promoted and developed, some positions will be replaced by artificial intelligence, leading to intensified competition between positions. The competition of positions is no longer a competition between people, but also between people and artificial intelligence.

3. Challenges faced by SMEs. According to the survey, we found that 66.67% of people believe that artificial intelligence is costly for some small and medium-sized enterprises. Although artificial intelligence is already on the way of development, the high cost and instability in it still make some enterprises The lack of attention and application of artificial intelligence, the lack of innovative thinking and creative ability, and the lack of financial budget planning make it difficult to integrate the three of "intelligence", "supply chain" and "industry finance", which makes enterprises still walking in the old road. However, if you travel against the current, you will retreat if you don't advance. You can't walk a long way, you have to learn to find a different way. Therefore, only by actively seeking different methods and actively innovating can we effectively realize the organic integration of the supply chain, so that the integration of "intelligence", "supply chain" and "industry and finance" can be achieved.

4. The reliability of artificial intelligence is overestimated. According to the survey, 63.03% of people believe that if there is a problem with artificial intelligence, it will cause losses to the enterprise if it is not detected in time. It is not difficult to find that in life, because artificial intelligence is the result of science and technology, some people who do not have a deep understanding of science and technology will think that artificial intelligence is perfect. This will cause artificial intelligence to fail to detect and solve problems in a timely manner, which will bring serious consequences.

## **5. Effectively Integrate and Promote the Rapid Development of Artificial Intelligence in Supply Chain Management and the Integration of Industry and Finance**

The rapid development of informatization in the era of science and technology has made it possible for the development of artificial intelligence in supply chain management and Industry-finance integration and collaborative applications. How to solve or weaken the four dilemmas in the development, to promote the collaborative application of "intelligence", "supply chain", and "business finance", and promote the rapid development of artificial intelligence in the supply chain management and the collaborative application of business finance?

1. At the same time as the improvement of artificial intelligence technology, the technical level of information protection should also be improved. Some information protection measures should be adopted to protect information as much as possible to reduce data loss and misappropriation.
2. Improve the monitoring mechanism and corresponding laws and regulations for data use. For certain system vulnerabilities, it is necessary to improve technical protection methods and strengthen the maintenance of databases; improve relevant laws and regulations in terms of data leakage and data theft.
3. The competition between artificial intelligence and artificial labor will become more intense, and artificial intelligence will increase the skills and requirements of the job. To reduce the new imbalance caused by artificial intelligence, it is also necessary to focus on the cultivation of innovative talents. First, new organizational and work models can be adopted to promote the smooth transformation of the artificial labor structure and confirm that the artificial labor can continue to adapt to the labor market; second, improve the social security system to reduce new imbalances in the development of artificial intelligence; finally, the photography should be constructed reasonably the education of artificial intelligence development cultivates innovative and comprehensive talents.
4. Periodic testing of artificial intelligence technology products should be carried out regularly, and the pros and cons of artificial intelligence should be faced squarely, and problems should be dealt with and optimized in time.
5. Realize the organic integration of supply chain management and business-finance integration. It is necessary to combine internal and external support to investigate and inspect the financial management system under the integration of supply chain enterprises and industry and finance, improve the functions of the supply chain, and then effectively integrate each other. The basic collaborative cooperation model can better Realize the integration of the supply chain.

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## References

- [1] Research Report on Artificial Intelligence Industry in China [J]. Iresearch Research Institute,2019.
- [2] Wang Yajuan. Discussion on the integration of industry and finance in the intelligent Era [J]. Accounting Learning,2019 (32): 32-33.
- [3] ZHANG Ji. Discussion on the application of artificial intelligence in computer network technology [J]. Electronics World, 2018 (1) :45-46.
- [4] Chang Xuemei, WANG Keyuan. Xi Jinping: Artificial intelligence has a strong role as "head goose" [N]. People's Daily Overseas Edition.
- [5] Yang Junkai, ZHAO Hui. Research on labor supply in the era of artificial intelligence [J]. People's Forum,2019(21):46-47.
- [6] Liu Hemin. Analysis of the impact of artificial intelligence on modern enterprise management[J]. China Management Informationization. 2021(10).
- [7] Wang Xingyue. The impact of artificial intelligence on financial work and its application analysis[J]. Market modernization. 2018(21).