Research on the Application of New Technology in Enterprise Financial Management in the Age of Abstract Intelligence

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Abstract: Enterprise financial management technology(FM) is the economic lifeblood of the survival and development of enterprises. The scientific management of enterprise FM is a major way to ensure the economic benefits of enterprises. In the traditional enterprise FM model, it is subject to a variety of limiting factors and influencing factors, which may cause the weakening of the efficiency and quality of enterprise FM. The wide application of information technology has brought great changes to the way of enterprise management, especially the impact on FM, from the original manual processing to complete computer processing. Compared with other business departments, the pace of FM reform is relatively slow, but with the deepening of the reform and the change of the overall management environment, the requirements of enterprises on FM are constantly improving. Not only the timeliness, accuracy and effectiveness of financial information have higher requirements, but also the value created by FM for enterprises. This paper makes a detailed and systematic analysis of derivative financial instruments, discusses the application status of derivative financial instruments in enterprise FM, and puts forward some improvement measures to promote the application of derivative financial instruments in enterprise FM.

1. Introduction

In the era of lack of information, enterprise management relies more on personal experience and wisdom to manage and make decisions. With the wide application of modern information technologies such as computer technology and Internet technology in enterprise management, the efficiency of enterprise management and labor productivity have been greatly improved [1]. At the beginning, artificial intelligence(AI) research was a collection of several scientific research achievements. It developed from the late 1930s to the early 1950s. Although seemingly independent research was secretly surrounding a common topic, that is, the feasibility of building an electronic brain. In the field of information, Claude, the founder of information theory Shannon laid the theoretical foundation of digital circuit [2]. Turing, regarded as the father of computer, mentioned in Turing principle that any physical process can be simulated with an abstract general computer [3]. Accounting has a long history. It began to record economic events in the early period of human civilization. However, it is generally believed that the symbol of the formation of modern accounting is the transition from single accounting to double accounting. Modern accounting came into being in the 1950s. With the intensification of competition among enterprises, the scientific management in the 1930s and the management science in the 1950s promoted enterprises to attach importance to cost management and control, operation and investment decision-making, responsibility control, and comprehensive budget, and management accounting began to be separated from financial accounting [4].

In order to better adapt and meet the individualized needs of clients, it is necessary to reconstruct with new methods based on the understanding of the nature of accounting, combined with new technologies. Accounting information came into being in such an environment. By cooperating with management, it standardized and informationized the accounting business, enabling enterprises to understand the market dynamics, grasp the relationship between supply and demand, and occupy the market advantage with the help of accounting information [5]. For example, there are many arbitrage opportunities in the current financial market, and some enterprises will carry out arbitrage

investment. However, in the process of investment, they will face great risks, and enterprises can improve their profits through some small financial instruments. At the same time, in the actual management process, some managers will seize higher benefits based on some incomplete information, which to some extent damages the rights and interests of business owners [6]. In the field of financial accounting, AI(AI) technology can provide reliable and powerful technical support in data identification and collection, big data processing, decision-making assistance, etc., thus greatly improving the accounting information quality and overall work efficiency of state-owned enterprises and helping state-owned enterprise managers make decisions more scientifically and efficiently. In the future, AI will completely change the pattern of FM and trigger a technological revolution [7]. Domestic large and medium-sized enterprises have a lot of demands for building and implementing intelligent finance in enterprises, but the foundation of the construction is relatively weak. This paper, combined with cases, describes in detail the methods of applying AI technology in enterprise FM, which has certain theoretical and practical significance.

2. Strategic significance of business intelligence technology applied to enterprise FM

2.1. Current situation of enterprise Financial management technology

As the core work of enterprise development, enterprise FM reflects the operation and economic benefits of enterprises. As enterprise FM involves a wide range and requires the joint action of many links, it is bound to be influenced by many factors. However, the effective development of enterprise FM can not be ignored. With the social changes and the changes of the times, enterprise FM is constantly adapting to the social needs and actual conditions, and the FM system, process, means and content are updated and optimized. At present, there are still the following problems in the FM of some enterprises, which may affect the effectiveness of the FM of enterprises. Due to the large stock of assets, backward management mode, unreasonable asset allocation and difficult management of state-owned enterprises in China, the introduction of AI technology can strengthen the asset management, cost management and cash flow management of state-owned enterprises [9]. The accounting robot can analyze the data from horizontal and deep angles. According to the rules preset by professionals and different theoretical models and data models, it can use its powerful calculation and processing ability to form a variety of different and refined investment and financing schemes and cost operation schemes, display the cash flow and operating results under different schemes, and select the best scheme for managers to make decisions, so as to achieve the optimal allocation of resources and realize the cost-benefit principle [10]. The construction of FM informatization can promote the level of enterprise FM, improve the management mode to meet the requirements of financial informatization, and business intelligence technology can realize the deep level description and indicator analysis of FM data, excavate the deep level information in financial data, find the problems existing in the enterprise, and make effective use of financial data. The level of informatization is from MRP, MRPII, ERP to CRM. Every change has greatly promoted the upgrading of enterprise informatization and the improvement of enterprise management. After the organization implements the financial informatization, the accurate, reliable and true internal financial data of the organization are stored in the relevant documents in electronic form. These data can not only be used for data processing, but also have the characteristics of data unity, integrity and security.

As enterprise FM needs to complete the overall management of enterprise finance, involving many financial contents and heavy workload of financial accounting, it requires financial managers to spend more time and energy in financial accounting, which causes great labor pressure for enterprise financial managers and also affects the improvement of their professional ability. At present, in some enterprises, the financial analysis of enterprises is only predicted by the data such as the analysis report submitted by the FM personnel, while the accuracy of the financial analysis of enterprises that is done manually may have some deficiencies, which will result in poor results of financial analysis of enterprises. Once it deviates from the development trend and market environment of enterprises, it may affect the overall development benefit of enterprises. Therefore,

there may be some cross-management among multiple systems in enterprise FM, which affects the order of enterprise FM, and also leads to the decline of the quality and efficiency of enterprise FM. Especially in the enterprise financial information management system, relying on manual management may be influenced by subjective factors, resulting in various problems in enterprise financial information management and affecting the actual effect of enterprise FM.

2.2. Problems existing in the application of enterprise Financial management technology

Enterprise FM has been upgraded and optimized in the new era, but there are still some disadvantages in the enterprise FM under the artificial environment. The improvement of these problems should rely on the characteristics of the new era and technical characteristics. The optimization of enterprise FM with AI technology can greatly improve the impact of various factors in human management, Improve the scientificity and accuracy of enterprise FM. The development of derivative financial instruments in foreign financial markets is relatively perfect, especially in developed countries. Driven by mature foreign systems, derivative financial instruments have a wide range of applications and are flexible, so there are many successful experiences for enterprises to refer to. On the contrary, in the domestic financial market, derivative financial instruments are still a new thing. Compared with foreign countries, their development still has a huge gap, and there is still a long development process to go through. From the perspective of transaction mode, due to the influence of financial institutions, their existence form is relatively simple, which will inevitably lead to enterprises or financial institutions will limit the role of derivative financial instruments and cannot play the autonomy of derivative financial instruments. The main function of the Information Office is to be responsible for formulating the general plan of the company's information construction and development, building the enterprise information service system according to the plan and ensuring the stable operation of the information system, formulating the information maintenance system and management methods, and maintaining, upgrading and managing the information service system.

The technical support department includes research institutes, technical centers and hardware centers under the company, which are responsible for the planning, research and development of the company's core technologies, providing core technical support for the company's product research and development, and also responsible for the cooperation with other research institutions and educational institutions to ensure and enhance the leading position of the company's core technologies in the industry. The improvement of the supervision mechanism is the most important task at present. Only a scientific and effective supervision mechanism can ensure that derivative financial instruments give full play to their own advantages and avoid or transfer the risks of enterprises. At the same time, it is necessary to optimize the financial system of enterprises and enhance the benefits of enterprises. There are some problems in the process, such as the distribution method and unscientific process, which leads to the low work efficiency of the relevant staff; At present, the information system includes ERP, OA, fund management, taxation and other relatively independent systems, which are too scattered, resulting in users' difficulty in using, poor experience and error-prone. At present, there is room for further improvement in the structure of financial personnel in the operation and management mechanism. It is necessary to further optimize and clarify the responsibilities of management accounting, financial accounting and FM. At the same time, the career development channel of financial personnel is unclear, and there is a lack of systematic training mechanism; Without systematic performance management mechanism, it is difficult to effectively track and manage the work of financial personnel and make efficiency statistics.

3. Construction scheme of financial affairs of new intelligent technology enterprises

3.1. The construction goal and thinking of intelligent financial center

In the informatization development strategy, AI+FM is the first stage task. The goal is to complete the organizational structure optimization, business process reconstruction and system

optimization by building an intelligent financial center. Therefore, the focus at this stage is to build an intelligent financial center, that is, to achieve human-computer interaction and human-computer collaboration in the financial system by combining AI technology with IT system. The AI technology applied mainly involves voice recognition, image OCR, natural language understanding, deep learning and intelligent hardware. In terms of information systems, it will comprehensively cover most businesses of FM, such as reimbursement, financial budget, accounting, statement management, asset management, taxation, decision-making, etc. The accounting development has gone through the accounting information period of full manual bookkeeping mode, accounting computerization, using professional information systems CRM, ERP, etc., and has also entered the intelligent era. On the one hand, the development of these technologies has promoted the reform of the accounting industry on the road of informatization, on the other hand, it has also promoted the application of management accounting in enterprises. Intelligent FM is based on financial information management. It is objective and scientific. It can conduct rapid and comprehensive analysis, share the information easily, form a clear FM model, and predict the future reliably.

Intelligent FM can make use of business knowledge and information technology to analyze and integrate information, the past behavior of enterprises and the development situation of enterprises (instead of simple statistics and summary), dig out potential laws and turn information into useful knowledge. This is the key to the superiority of intelligent FM. For example, in the development and popularization of financial software, through the sale of networked electronic invoices, the workload of financial personnel in purchasing invoices and accounting invoices can be reduced. Furthermore, the introduction of electronic accounting documents with AI technology in enterprise FM can play the same role as paper documents, and reduce the workload of manually printing and filling in accounting vouchers in the traditional mode. Therefore, in order to make management accounting play a greater role, it is necessary to effectively integrate it with traditional finance, play its role in the development strategy of enterprises and the decision support of management, and then continue to serve the value creation of enterprises.

3.2. Application value evaluation of AI in FM of state-owned enterprises

The OCR technologies used in the enterprise reimbursement robot are invoice OCR (invoice information digitization) and contract data OCR (contract information digitization). It is applied to intelligent form filling, automatic formation of electronic invoice library, automatic verification and duplication of invoices, automatic authentication of invoices, automatic comparison of invoice objects and images, automatic formation of purchase contract payment account data, etc. Verify whether invoices are duplicate (especially for electronic invoices) to avoid repeated reimbursement; Verify the authenticity of the VAT invoice to eliminate the false invoice reimbursement; The automatic authentication is triggered according to the recognition results, which greatly reduces the workload of manual authentication; Automatically compare the physical invoice with the electronic invoice, reducing the risk of financial receipt; Upload the printed contract to form contract account data, query the purchase contract payment progress online, control the payment amount not to exceed the contract amount, and collaborate to improve the automation rate of document review.. For example, through the application of voice technology, you can voice input the reimbursement content, reduce the workload of manual operations, understand the reimbursement policies such as employee reimbursement subsidies and reimbursement processes in real time, and optimize the employee experience; Employees can also book hotels, tickets/air tickets via voice to improve efficiency and optimize employee experience. Business leaders of companies can assist in business approval by configuring supplementary approval rules. The intelligent document approval engine supports the following auxiliary approvals: automatic prompt of employee credit rating; Automatically prompt budget balance; Historical reimbursement records can be brought out; Automatically prompt contract payment terms and contract payment history; And special matters will be automatically forwarded to leaders for special approval and special tips. The pre evaluation of the effect before and after the process optimization shows that the application of the intelligent document audit engine can effectively replace the manual work, improve the work efficiency, and

reduce the control risk. As shown in Table 1.

Table 1 Efficiency evaluation of the company's intelligent document review engine

After process optimization	Employee reimbursement	
	Quantity	Proportion
Fully automatic audit point	82	49%
Semi-automatic audit point	56	33%
Manual audit point	30	18%
Subtotal	168	100%

The research and development of the company's reimbursement robot is mainly aimed at solving various problems in financial reimbursement. The first step is to first review the management, and then consider restructuring the organization and reimbursement business process; The second step is to apply AI technology in technology. According to the idea of process reengineering and standardization, and by referring to the practice cases related to the industry, combined with the company's own technical advantages, the following restructured reimbursement process can be constructed, as shown in Figure 1.
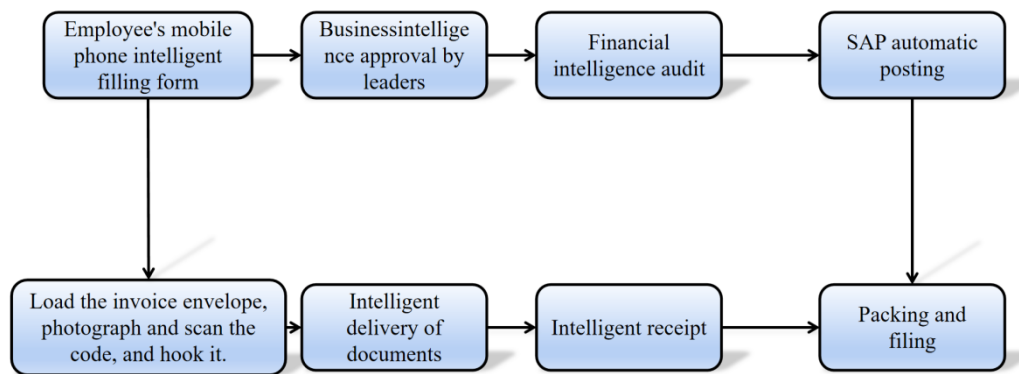

Figure 1 Workflow of enterprise reimbursement robot

As shown in the figure, the reconstructed company's intelligent reimbursement mode emphasizes the real-time collection of offline physical state by intelligent hardware, and also strengthens the cooperation of online information systems to support the improvement of the digital efficiency of the whole process of transaction management. Both online electronic circulation and offline physical logistics have introduced or applied intelligent technology, forming two closed loops of reimbursement process: intelligent reimbursement automation closed loop with data access, online electronic flow and offline physical logistics closed loop.

In order to better realize the financial transformation and adapt to the new development, the intelligent financial solution of state-owned enterprises involves the adjustment of many departments and positions, and the redefinition of the positions and responsibilities of financial and other related personnel, which all need the support of the company from management, and the related personnel adjustment and the matching performance appraisal scheme also need the strong support of the human resources department. The research and development of the new intelligent financial model requires R&D personnel to have composite technology. In addition to active learning, they should be good at analysis and know business, finance and technology. However, this kind of compound talents is extremely scarce in the current company, and the shortage of human resources will seriously affect the promotion of intelligent financial construction. Therefore, the company needs to give priority to compound talents when recruiting personnel, and give policy support to attract talents.

4. Conclusions

Artificial intelligence technology itself has great technological advantages. With the

development of the times, AI technology has also been significantly improved in technological innovation and practical ability. At present, AI technology has been able to penetrate into people's lives, playing a unique advantage to promote the intelligence of people's lives. Among them, the application of intelligent hardware makes the tracking of physical circulation smoother and more reliable, the application of OCR technology and speech recognition technology effectively solves the problem of intelligent collection, and the application of intelligent document review engine effectively solves the problem of intelligent review, so that the collected data can be effectively reviewed and then really used in the background. In short, FM is the core of the operation and management of entrepreneurial enterprises. It is not easy to do a good job in FM. In the FM of enterprises, there are many management contents, a wide range of coverage, and difficult management. In the development process of modern enterprises, we must pay attention to the FM of enterprises to solve problems in time when they encounter problems, and actively adjust the content and objectives of FM to help the sustainable and healthy development of enterprises, Only in this way can we maximize the effectiveness of FM and provide financial security for the sustainable development of enterprises.

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