Research on the Application of Financial Robot under the Background of Next Generation Information Technology -- Taking Sinochem International as an example

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Abstract. With the development of the times and the progress of science and technology, the computerized accounting system can no longer meet the problem between the increasing human cost of most companies and the backward high-end talent pool. The transformation of the financial work system is imminent. The emergence of financial robots is undoubtedly an opportunity for the transformation of corporate financial work systems. It has attracted the attention of enterprises due to its unique process automation advantages. To mitigate above issue, this paper analyzes the development, application, and impact of financial robots in enterprises based on a brief introduction to the meaning and development of financial robots, and proposes relevant suggestions for introducing financial robots.

1. Introduction

Nowadays, the development wave of Big Data, Cloud Computing and Artificial Intelligence (AI) is in full swing, promoting the transformation of various vertical industries to intelligent fields [1]. Catalyzed by artificial intelligence, Tencent took the lead in launching Dreamwriter in the news industry, Shenzhen Bus Group’s driverless buses were officially on the road, JD’s “Robot Family” was unveiled at the 2018 World Robot Conference... Intelligent robots are gradually sneaking into different areas of our lives. Since 2017, DTT, PwC, EY, and KPMG accountant firms with their distinctive financial robots have appeared one after another, causing a sensation in the entire financial circle. Besides, many software vendors such as technology have also launched their own financial robot solutions [2]. The application wave of financial robots is spreading throughout the financial field.

2. The significance of the emergence of financial robots

Financial robot is a kind of intelligent financial software that can automate the execution of work processes that require manual operations, namely Robotic Process Automation (RPA) [3]. Before the emergence of RPA, most companies mainly relied on ERP or ERP-like systems to handle financial business [4]. Although compared with traditional accounting methods, it has been greatly improved, but some basic accounting tasks that are too mechanized and low-skilled still occupy financial personnel. A large amount of working time is not conducive to the transformation of financial staff to management accounting. The use of financial robots can not only quickly and accurately perform time-consuming basic tasks such as bookkeeping and tax reporting, but also use and integrate artificial intelligence and other technologies to imitate human judgments and process tasks based on certain rules. At the same time, it can be used in big data analysis and sales. There is also a lot of application...
space in forecasting, risk management, and control. Besides, RPA is less intrusive. It only needs to deploy the preset program on the original system of the enterprise to achieve interaction, but there is no need to rip and replace the existing technical architecture of the enterprise so that the original time-consuming and low-tech manual work can be used automated quickly at low cost, greatly reducing the cost of enterprises. Therefore, it can be said that the popularization and application of financial robots in enterprises will be an inevitable trend.

3. The development of financial robots in Chinese enterprises

In March 2016, Deloitte and KiraSystems joined hands to introduce artificial intelligence into the financial field, ushering in the era of intelligent accounting. Soon after the launch of Deloitte's financial robot, it has been favored by dozens of large customers; subsequently, PricewaterhouseCoopers launched its financial robot solution and put it into operation in companies such as Sinochem International; Ernst & Young launched various business processes suitable for enterprises "Angel" intelligent financial robot; KPMG uses Microsoft Azure intelligent cloud and combined with artificial intelligence technology to launch an automated solution in a pilot application in banks. In addition to the "big four" financial robots appearing on the market, many Chinese companies have also invested in the development and research of financial robots. The "Accounting Robot" developed by Changsha Intelligent Manufacturing Institute has provided services to more than 50 companies. The intelligent financial robot developed by Kingdee is very popular among current companies...More and more companies have introduced financial robots to implement financial work systems transform to the intelligent field to adapt to future development trends. According to the report, China is expected to become the number one market for financial robots in Asia by 2020.

4. The construction and application of financial robots in my country's enterprises-taking Sinochem International as an example

4.1. Reasons why Forma introduced financial robots

As a large-scale enterprise in my country, Sinochem International (Holdings) Co., Ltd. has customers in more than 100 countries and regions. The wide range of business makes Sinochem International's financial work relatively scattered. After the introduction of the financial sharing center, entities that are not in the same region Accounting services can also be integrated and managed together. However, its accounting, reconciliation, taxation, and other tasks still need to spend a lot of time to process. To improve the efficiency and quality of the sharing center, Sinochem International worked with PWC to study the application of AI technology in the field of finance and taxation. In August 2017, In December, PWC financial robot was officially introduced.

4.2. The role of financial robots

Given the operational characteristics of the financial sharing center, PWC and Sinochem International Financial Management Department have completed the deployment of automated execution of a large number of, repetitive, and time-consuming basic operating procedures in accounting and taxation through one month's efforts, and provided bank reconciliation, incoming payment reminders, value-added tax account verification and verification of the authenticity of value-added tax invoices and other workflows provide better services, which have greatly promoted the financial work of Sinochem International.
Figure 1. the workflow of financial robot.

4.2.1. Improve work efficiency and effectively save costs. On the one hand, the financial robot can automatically complete the reconciliation and adjustment sheet printing tasks between the bank and the enterprise without manual intervention, so that work tasks can be processed in time, which greatly improves the work efficiency of financial personnel; on the other hand, Before the introduction of robots, financial personnel needed to spend a lot of energy on tax declaration, and robots can directly send the VAT invoices that need to be verified to the inspection platform of the State Administration of Taxation to verify the authenticity, and feedback the inspection results to the staff, While improving the taxation efficiency, it also enables the sharing center to save labor costs. Although the initial investment cost of the robot is relatively high compared to the labor cost, from a long-term perspective, the efficient work of the robot can not only save employees' salaries and benefits but also greatly reduce the time cost and management cost of the sharing center.

4.2.2. Enhance the reliability of accounting information and the quality of financial information. The biggest feature of financial robots is that they can automatically perform the basic financial process operations of the enterprise. The standardization and automation of the process can largely avoid the phenomenon of manipulating accounting information, and make up for the loopholes in the distortion of accounting information caused by financial fraud. Conducive to enhancing the reliability of accounting information. Moreover, the robot can analyze the difference between accounting records and tax receipts from data sources such as the financial system, tax system, and tax declaration documents on time, and remind accountants to correct the deviation in time through email. Before this, financial personnel often needed to spend a lot of energy to analyze, and it was easy to cause distortion of accounting information due to mistakes. Robots can avoid this situation well. Its working speed and accuracy are close to 100%, which greatly improved the quality of accounting information.
4.2.3. **Improve the economic efficiency of enterprises and enhance their competitiveness.** The use of financial robots has greatly reduced the workload of accountants, so accountants have more time to participate in more value-added work, such as using the information and data provided by robots to comprehensively analyze the operating status of the enterprise from a financial perspective, in order to improve its operational capabilities and make recommendations, which will bring higher economic benefits to the enterprise. At the same time, financial personnel can also effectively use financial statements to analyze the factors that affect the quality of the company's financial status, and assist companies in proposing better development strategies to enhance their competitive advantages in the industry, thereby enhancing the company's core competitiveness.

4.3. **Problems in the application process**

4.3.1. **The security crisis of accounting information.** Although financial robots can improve the quality of accounting information, accounting information is mainly recorded and archived in electronic form, and information storage is relatively concentrated. If it is maliciously attacked by hackers and the company's information security protection system is not complete, it is easy to face information being compromised. Risk of leakage. Although financial robots perform relatively basic tasks, they still keep business secrets such as business data, customer information, and accounting behaviors of the company. Once leaked, it will have a serious impact on the development of the company.

4.3.2. **Financial staff transformation difficulties.** For financial managers, the emergence of financial robots has played a very important role, which can assist them in more accurate analysis of the company's operating conditions and provide better advice for the company. But at present, the financial staff of enterprises are more in financial accounting positions. They spend most of their time in basic accounting work such as accounting, and the application of financial robots will replace most of their work, so a lot of basic Accounting personnel need to be adjusted, and companies need more management financial personnel. However, it takes a long time for financial personnel to become management accounting talents to study and further study, and it is difficult to achieve transformation in a short time.

5. **Solutions direction**

5.1. **Encourage accountants to continuously improve their professionalism**

As the core department of an enterprise, the finance department can only continuously strengthen the ability and quality of accounting personnel to enable enterprises to maintain their own competitiveness in the era of artificial intelligence. Enterprises should encourage financial personnel to improve their professionalism through continuous learning and become a new type of financial personnel that meets the requirements in the new era. For junior accountants, we should focus on cultivating their analysis, management, and decision-making abilities, strengthen their learning and research on RPA, and make financial robots their own good helpers as soon as possible, so that they can become corporate management accounting talents. For middle and senior accountants, they should be encouraged to learn more about management and decision-making knowledge, and make use of the convenience brought by financial robots to make more scientific decisions for the development of enterprises, so that they can become outstanding managers with a broader vision and a larger pattern.

5.2. **Intelligence and innovate financial management mode**

Whether at home or abroad, financial robots are still a relatively new concept in the financial field. Its introduction has promoted the advancement of the accounting field to artificial intelligence. Enterprises should actively embrace financial intelligence, combine their own actual conditions and development characteristics, adjust the deficiencies in the corporate financial management mechanism, and improve financial management with the support of advanced financial robot technology, and
further improve the efficiency of financial management. Quality, actively explore new financial management models that are more suitable for enterprises.

5.3. Enhance the security protection system and improve the security of enterprise information

With the development of information technology, while enterprises use the benefits of information, their trade secrets are also unknowingly become information and networked. The application of financial robots is to promote the development of enterprise financial information, which requires enterprises to further strengthen the security protection of financial information systems. At the same time, companies should learn about the working mechanism and defects of financial robots from financial software vendors, and choose financial robots that are more suitable for enterprise development based on their characteristics. Besides, software developers should also strengthen the functions of financial software and improve its confidentiality capabilities to enhance the security of corporate financial information.

6. Conclusion and future work

As the first state-owned enterprise that dared to try, Sinochem International has greatly improved its work efficiency after introducing financial robots, bringing more benefits to the company. According to authoritative research reports, the revenue of RPA suppliers has increased sharply in the past two years. Not only are investors optimistic about RPA’s future investment returns, most companies are also very optimistic about the development prospects of RPA. Although financial robots have not yet been widely used in enterprises, it is foreseeable that in the near future, most of the accounting work will be replaced by robots, and the IT industry will be subverted. The era of financial industry reform has arrived. In summary, companies should seize the opportunity of integration with AI technology, actively explore suitable financial robots for themselves, and promote the sustainable development of enterprises.

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