

Financial Management Innovation of Electric Power Enterprises Based on Robotic Process Automation

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Abstract—The innovation of financial management of electric power enterprises is an inevitable requirement for power system reform. The concept of Robotic Process Automation will be used in this paper for demonstrating the electricity market demand and will organically combine management innovation and technological innovation. And then management standardization and financial management automation will be promoted. Based on the Robotic Process Automation, the content of financial management innovation in electric power enterprise has been analyzed in this paper. Afterwards the effective measures for the financial management innovation of electric power enterprise have been proposed, which has certain reference significance. In the future, Robotic Process Automation will play a very large role in promoting the development of electric power enterprise.

Keywords—The Electric Power Enterprise; Robotic Process Automation; Financial Management; Financial Robot

I. INTRODUCTION

With the improvement of the level of global informatization, the raw materials, products or services that are supplied by enterprises are no longer tangible, and on the contrary, more and more enterprises tend to supply intangible products, such as data or information. Therefore, automation has also begun to be widely used in other industries. Taking the manufacturing industry as an example, after more than ten years of accumulation, the manufacturing automation level has been improved and perfected, which has been greatly improving the production capacity and quality level of the enterprise.

Robotic Process Automation has been created in the context of the universal application of information technology and the full era of the digital age. Robotic Process Automation is a technology based on computer coding and rule-based software that automates manual activities by performing repetitive rule-based tasks.

With the rapid development of Robotic Process Automation, electric power enterprise is facing fierce competition in the industry. Only by using Robotic Process Automation will the financial management model of electric power enterprise be innovated, and then we can further enhance market competitiveness and promote the sustainable development of electric power enterprise.

II. THEORETICAL OVERVIEW

A. Disadvantages of Financial Management in Traditional Power Enterprises

In electric power enterprises, traditional financial work is to process the after-the-fact record for the business operation, which includes the accounting of economic results, the entry of vouchers, the account book, and the accounting process of the report [1]. These basic accounting work in this process needs financial personnel to complete. The main work can be categorized into the following four aspects:

1) Accounting work.

Electric power enterprise needs a number of accountants to handle the accounting operating, and carry out the audit of the original invoice. The work is simple but the repetition rate is high.

2) Entry of documents.

Most of the accounting staff's work in electric power enterprise focuses on voucher entry, and there are a large number of repetitive, recurring voucher entries.

3) Reporting of reports.

There are many financial statements for different types of electric power enterprise, which need to do various financial statement preparations in accordance with requirements in their work. For example, a report needs to be filled out multiple times, which will consume a lot of time and effort of the accountant.

4) Organizing and storing reports.

Financial work is a kind of work which needs to be done on daily basis, such as issuing tax invoices, binding vouchers, auditing vouchers, and processing data statistics, all of which require a large amount of time for accountants.

When the financial personnel in the power enterprise engage in these highly repetitive manual operations, they will need a lot of manpower and time, which will waste the human resources of the electric power enterprise to some extent. Manually processed data is less accurate. And also, it needs to compress some time of the complex work. The above problems have created necessity for the use of financial robots in electric power enterprises.

B. Introduction to Robotic Process Automation

Robotic Process Automation is intelligent software, which can automate workflows by simulating and enhancing the interaction between humans and computers. In many industries, there are a lot of repetitive and boring works, so you need a tool or software that can operate the existing system autonomously to free employees from such work, and to do some more advanced and important work.

The process that can implement the Robotic Process Automation should have three key features: one is the same operation steps, which can be repeated; the second is template driver, the data can be processed in a repeated manner; the third is based on standard rules, allowing the decision to change dynamically and dramatically.

During financial management of electric power enterprise, there are a large number of highly repetitive manual operations, which requires the use of Robotic Process Automation. We can use the financial robots for financial data integration, storage and analysis.

C. Introduction to financial robots

Essentially, financial robot is an application of the Robotic Process Automation in the financial field [2].

In 2016, Deloitte and KiraSystems jointly launched a financial robot that can quickly process thousands of financial documents [3], acquire and construct accurate text information for financial analysis, and combine the current application phenomenon with Deloitte Financial Robot to a certain extent. It has improved the efficiency of corporate finance staff, and given financial staff more time to handle advanced financial work. It is the most common financial robot on the market. In addition, PricewaterhouseCoopers, Ernst & Young and KPMG International have launched financial robots. The application plan in enterprise financial management has been the focus in the global economic market nowadays.

D. Financial robot features

- Financial robots can replace manual operations in financial processes, especially for highly repetitive, recurring basic accounting tasks;
- Financial robots can manage and monitor various automated financial services and automatically update and maintain data in a set financial process;
- Financial robots can perform a full inspection for some of the compliance and audit work;
- Financial robots can replace manual optimization of optimization points in financial processes;
- Financial robots work more accurately than humans and can work uninterrupted throughout the whole day [4];

From the point of view of the characteristics and advantages of financial robot work, the extensive use of robots in the financial management field in electric power enterprises can improve the efficiency of work and it is an inevitable requirement for adapting to the reform of the power system.

III. FINANCIAL MANAGEMENT INNOVATION OF ELECTRICITY POWER ENTERPRISES BASED ON ROBOTIC PROCESS AUTOMATION

A. Robotic Process Automation's Innovation in Financial Management of Power Enterprises

1) Idea innovation

Power enterprise managers broke the shackles of the existing management model and broke through the original management theories and methods. The introduction of Robotic Process Automation technology in the eight business cycles of finance will solve manpower problems, enable financial personnel to engage in high value-added work [5], enhance the productivity of enterprise, and improve the value of social and economic benefits. The creation of this thinking is rooted in the innovation of the ideas of managers and management organizations.

2) Staff structure innovation

Financial robots can replace some of the work in the financial management in electric power enterprises, such as the accounting work with strong normative, large-volume and highly repetitive accounting work and information disclosure of external financial statements.

Except that financial robots can replace the traditional work, they will also create new jobs that still require manpower [6]. Financial robots can efficiently perform a large number of standardized accounting calculations such as voucher entry and account verification. However, financial robots cannot communicate, exchange and coordinate with managing staff, so the use of financial robots can not replace management accounting manpower. The basic financial staff will gradually be transformed into a more useful and valuable management accounting for the enterprise, and realize the innovation of the management structure.

3) Strategic innovation

The automation process in the global financial field is being accelerated, and the rapid development of information technology has brought about tremendous changes. Electric power enterprises should focus their business strategy on global competition, and focus on the Robotic Process Automation concept to achieve the company's financial management transformation and the continuous development of the company's core competitiveness. Through promoting the experimental application of financial robots, constantly exploring the point of convergence between artificial intelligence and financial process robots, and applying its technology to all aspects of financial management of electric power enterprise, the electric power enterprises can improve their productivity and competitiveness, and achieve their strategic innovation [7].

B. Robotic Process Automation promotes financial personnel in electric power enterprise

1) *Financial robots will further improve the working environment of financial personnel in electric power enterprise*

Financial robots can free financiers from the tedious work and let them do more valuable work. And thus the accounting and report preparation in the traditional financial work will be improved. From the perspective of the robot, the corresponding work needs be carried out. Because the probability of errors in the robot is low, it can realize the intelligent improvement of the whole financial work. It can reduce financial personnel's pressure in the work of checkout and reconciliation, which will create a more comfortable and easy working environment for the financial staff [8].

2) *Financial robots will promote the innovation of financial personnel training mode in electric power enterprise*

The use of financial robots will also increase the pressure on some financial staff who are not familiar with such technology and need corresponding training[9]; and the training for the financial personnel shall include financial statement analysis capabilities and financial risk control. At the same time [10], the financial staff can have the ability to fulfill the work requirements, and have more time to learn the knowledge regarding financial work, which is of great significance to promote the financial staff's business level [11].

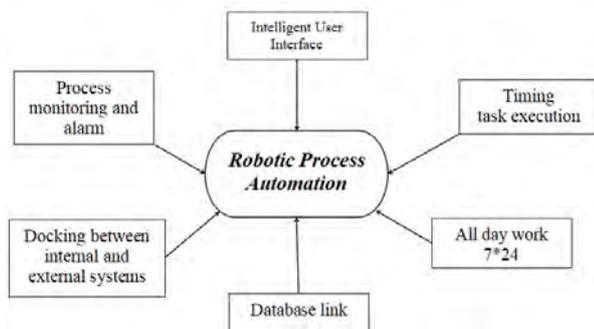


Fig. 1. Robotic Process Automation in electric power enterprise

3) *Financial robots will promote the transformation of financial personnel in electric power enterprise*

The Ministry of Finance issued the "13th Five-Year Plan for Accounting Reform and Development", which pointed out that with the rapid development of information technology, the emergence of financial sharing centers, big data applications, Internet + [12], the transformation of accounting must be started from traditional financial accounting. The standard-based accounting has changed to the management accounting fields such as cost management, budget management, performance management, investment and financing management, and the deep integration of financial management and business has promoted the wide application of management accounting and provided valuable decision-supporting information for enterprises. And it will manage risk, which will change from value participants to value creators.

The financial personnel take the management accounting as the platform, take the information technology as the carrier,

take the financial robot opportunity, and dedicate themselves to the enterprise management to create value for the enterprise, which is the only way for us to transform and upgrade.

IV. FUTURE VISION OF FINANCIAL MANAGEMENT OF ELECTRIC POWER ENTERPRISE

The financial robot perfectly combines the financial management work and artificial intelligence technology of the enterprise, and further optimizes the information construction of the electric power enterprises. The use of mobile Internet technology, cloud computing technology, big data technology [12] and artificial intelligence technology and other emerging technologies has broken through the bottleneck of corporate financial development and met the development needs of electric power enterprise.

In the future, financial robots will continue to optimize financial workflows, reduce costs, shorten project management cycles, and improve work quality.

V. CONCLUSION

This paper introduces the application of the Robotic Process Automation concept in the financial management of electric power enterprise, and briefly analyzes its advantages, its impact on the original model and its future development prospects. We have learned that financial robots, as assistants to the financial personnel of electric power enterprise, will replace transactional and basic financial work, improve the efficiency of financial management, promote the adjustment of personnel structure, and change the original management philosophy.

The electric power enterprise in the future will be the integration of artificial intelligence and new financial management models. The financial personnel of electric power enterprise will also shift their focus from accounting supervision to management decision-making, and thus have a new platform and a broader upside.

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