ORIGINAL ARTICLE

Application of Biometric Technology in Financial Shared Service Center

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Abstract: With the development of the times, financial shared service center has become more and more diversified and complex and the traditional financial system cannot meet the needs of enterprises. Only by providing services anytime and anywhere can we be invincible. In order to reduce costs and improve efficiency, financial institutions deploy biometric technology in various service channels to ensure user authentication and improve the security and timeliness of business processing. Therefore, this article puts forward the application of biometrics in financial shared service center. In order to verify the advantages of biometric technology, this paper analyzes the efficiency and management cost of biometric technology after it is put into use, and tests the cost change of an enterprise for four consecutive years and the change of personnel age for three consecutive years. Through this analysis, it is concluded that the input of biometric technology is conducive to the control of enterprise cost and the adjustment of personnel structure. In order to further the feasibility of biometric technology, this paper compares the data before and after the reform of enterprise financial system. The results show that the efficiency of financial business processing has increased from 5.8 days to 0.41 days, and the efficiency has increased by 14.15 times, which is in the international high level, and the financial shared service center is more intelligent and efficient. Through the analysis, the research in this paper has achieved ideal results and made a contribution to the application of biometric technology in financial shared service center.

Keywords: Biometric Technology; Financial Shared Service Center; Information Technology

1. Introduction

Biometric identification technology mainly refers to the identification technology which can directly measure or automatically identify and verify some characteristics of human organism by instruments. As extracted biological characteristics, they are usually unique, different from other organisms with genetic or lifelong invariable characteristics[1-3]. The core of biometric identification technology is how to accurately extract the required biometric technology, convert the extracted feature information into information that can be used by the computer, and then store it in the computer to complete the identification and authentication process of the principal identity through a reliable matching algorithm[4-6].

Predecessor of financial shared service center model is a shared service mode, and it is essentially a process of resource reallocation[7-8]. To a certain extent, the formation of shared service center mode is due to the cost-effectiveness advantage. Based on the traditional mode, some changes have been made. Financial shared service center mode is a kind of financial accounting and management information, and uses information technology for centralized operation of a new independent entity. It can be in different websites with high repeatability, and is easy to simplify and stand-

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ardize the financial glass subsidiaries. It will unify the accounting and share the corresponding output information according to the needs[9-10]. By comparing the financial shared service center mode with the traditional financial mode, it can be concluded that the main feature of the financial shared service center mode is to realize the integration of financial accounting, enterprise finance and business, and ensure the unified enterprise management with the help of information technology.

This article analyzes the actual situation of using biometric technology in financial shared service center, and finds that there are still some deficiencies in technology research and promotion with developed countries. Therefore, this paper establishes the research on the application of biometric technology in financial shared service center. In this research, in the view of actual situation of financial shared service center, the introduction of biometric technology, the combination of the two can bring cost advantages, ensure the unity of enterprise management, and improve the core competitiveness of enterprises. Through the analysis of the survey results, this article believes that the use of biometric technology can optimize the financial shared service center system and achieve good results.

2. Biometric technology and performance optimization of financial shared service center

2.1 Biometric technology

Biometric identification technology is a kind of technology to identify people according to the inherent physiological and behavioral characteristics of the human body. Through the principles of computer and optics, acoustics, biostatistics and other high-tech means, personal characteristics are combined into digital symbols and personal characteristics recorded in the template, which are used to identify the template. The physiological characteristics include iris, face, fingerprint, palmprint and so on. The behavioral characteristics include signature, voice print, gait, etc. Compared with traditional authentication, biometric authentication has the characteristics of easy to carry, unique, accepted by most users and widely used. Compared with traditional token authentication and password authentication, biometric authentication has more advantages.

2.2 Performance optimization of financial shared service center

In the process of performance evaluation of K-means, it depends on financial data and leader's scoring method to a great extent. This method is not comprehensive or subjective and not conducive to the development of K-means. Therefore, through the evaluation of K-means performance evaluation data, it is required that help K-means continue to play its advantages, improve its shortcomings, and promote the sustainable development of K-means. K-means algorithm is a data mining algorithm based on big data. In the face of massive and disordered data, K-means algorithm clusters the data according to its own characteristics, so that the disordered data gradually show common characteristics and more scientific classification of performance data, so as to provide more valuable information for enterprises.

In the K-means algorithm, when calculating the distance between samples, we should ensure that every variable in the performance evaluation has the same influence on the sample distance. In order to reduce the occurrence of this situation, the collected data should be preprocessed, and the collected data should be standardized by using formula (1):

$$x_i = \frac{x_i - x_{\min}}{x_{\max} - x_{\min}} \tag{1}$$

Then, the distance between each data and the centroid are calculated, and each data is assigned to the nearest corresponding species to form a cluster group. The formula is as follows:

$$d_{euc}\left(x_i, x_j\right) = \sqrt{\sum_{l=1}^{m}\left(x_{il} - x_{jl}\right)^2} \tag{2}$$

Update the centroid of each cluster. The centroid calculation formula of group I is:

$$c_i = \frac{1}{ni}\sum^{x}_{x \in ci} \tag{3}$$

So far, a complete K-means algorithm is completed. The K-means algorithm is based on the data and carries on the reasonable clustering to the data, which reflects the characteristics of the high value of the data. At the same time, K-means algorithm software can be used to assist performance data clustering, which greatly improves the time and accuracy of performance evaluation.

3. Analysis of application results of biometric technology in financial shared service center

Financial shared service center is a new management mode based on financial management mode and upgraded with the help of technology platform. Compared with the traditional mode, the working mode of functional departments has changed greatly. It relies on fine and reasonable division of labor, standardized process and rapid development of information technology. As an innovative management mode, financial shared service center is also constantly developing and improving, and the service object and mode are also constantly optimized. Although these objects show differences in various development stages, the overall characteristics of financial shared service are consistent from a macro perspective. In order to verify the effect of financial shared service center application, this paper compares and analyzes the financial data of an enterprise.

Biometric financial shared service center model was introduced into an enterprise. During these time periods, the financial processing efficiency and financial personnel of the group have changed greatly. As can be seen from **Table 1**, after the change of financial mode, the basic financial processing personnel will be reduced by nearly half, thus the salary paid to the staff will also be reduced correspondingly, which is RMB 14.38 million yuan before the establishment of the financial shared service center to RMB 7.92 million yuan after its establishment. The number of days of financial business processing is from 5.8 days to 0.41 days, which saves 5.39 days and improves the efficiency by 14.15 times. The improvement of efficiency is mainly due to the new financial processing mode under biometric technology, which unifies and standardizes the previous repeated financial business saves a lot of manpower and financial resources.

Time	**Total cost (10000 yuan)**	**Basic business processing personnel**	**Financial business processing efficiency (days)**
Before the financial sharing of biometric technology was established	1438	164	5.8
After the financial sharing of biometric technology was established	792	86	0.41
Change number	646	78	5.39

Table 1. Basic data statistics of financial processing of an enterprise

4. Data sources

The data in this article comes from the historical record data of a Chinese enterprise group. According to the requirements of the enterprise, this article failed to disclose the name of the enterprise. The human resources data are for 2017, 2018 and 2019.

5. Discussion

5.1 Application of financial shared service center

This article summarizes the application status of financial shared services center from the following aspects by studying the survey report on the construction of financial shared service center of large enterprise groups in China.

The application of financial shared service center is roughly as follows.

5.1.1 The correlation between the size of the company and the implementation of financial shared service center

Basically, consistent with the global survey results, the larger the enterprise group is, the higher the proportion of financial shared service center is used. On the contrary, the smaller the enterprise scale, the less likely it is to implement financial shared service center. The basic reason may be that small enterprises have no strong desire to establish financial shared service center based on the consideration of scale economy.

5.1.2 Service scope of financial shared service center

From the practical application of enterprise groups, large enterprises are more willing to build financial shared service center. Based on the actual situation, it is feasible for small and medium-sized enterprise groups to implement financial shared service center. According to the research data, 57% of the FSSCs serve at least 51 subsidiaries, 30% serve 35-55 units, and only 20% serve less than 25 subsidiaries. In this scheme, the number of more than 60 FSSCs may reach about 70% of all FSSCs.

5.1.3 Number of staff in financial shared service center

From the perspective of population distribution, the number of employees in the financial shared service center is a watershed, but the overall distribution is characterized by polarization. The proportion of 40 people and below is 30%, and that of 150 people and above is 20%. The distribution of the number of employees should be positively correlated with the actual number of employees and the business volume of the company. Other factors can also have a subtle effect on the number of employees.

In order to analyze the influence of financial shared service center on the age of enterprise personnel, this paper selects three consecutive years of financial personnel age samples of an enterprise for comparative analysis. The analysis results are shown in **Figure 1.** The analysis in **Figure 1** shows that the acceptance degree of financial shared service center is also related to the age distribution of personnel. Generally speaking, the speed of accepting new things for younger people is faster than that of older people. Therefore, after the financial shared service center is launched, the use and understanding of the system can also determine the effect of the financial shared service center, and the employees tend to be younger.

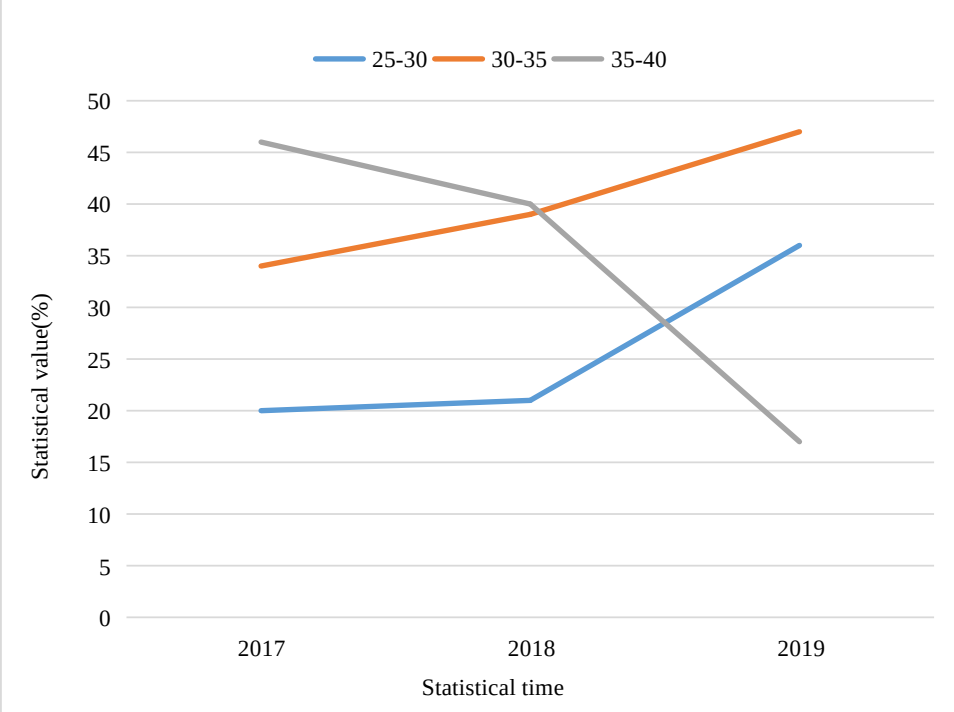

Figure 1. Age development trend of financial practitioners in recent three years.

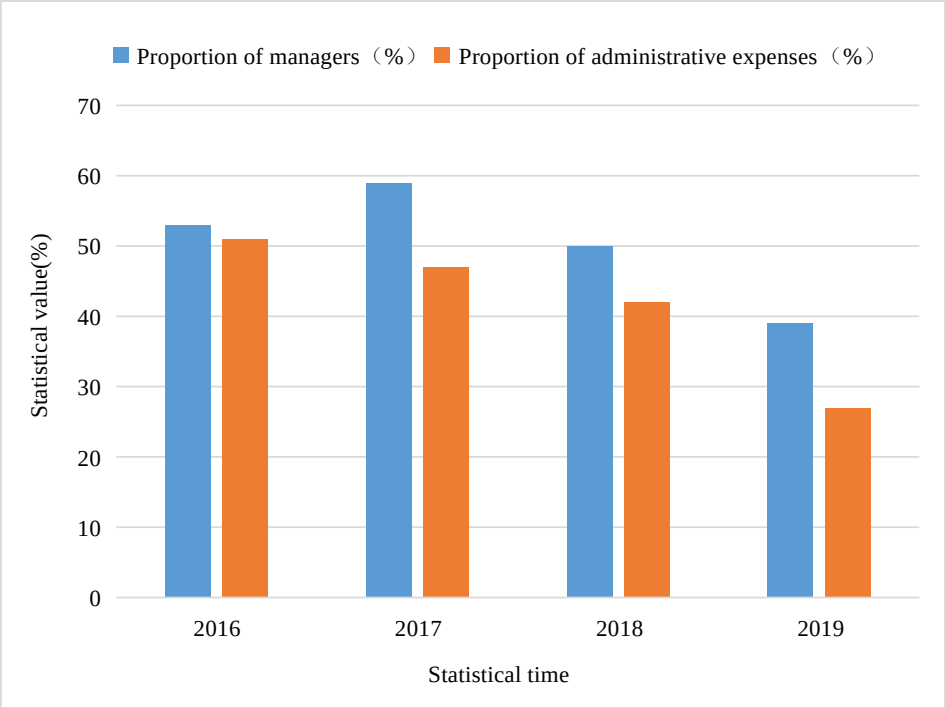

Figure 2. Development comparison of financial management personnel and management expenses after financial shared service center is used**.**

In addition, this article further analyzes the management personnel and the proportion of expenses after financial shared service center is used. The calculation results are shown in **Figure 2.** As can be seen from Figure 2, both the growth rate of management personnel and the growth rate of administrative expenses are in a downward trend, among which there are some factors affecting the implementation of financial shared service center. From year 2018 to 2019, both of them show a downward trend. Although the growth rate of management personnel has increased in 2017, the overall trend from 2016 to 2019 has decreased significantly.

5.2 An innovation strategy of using biometric technology in financial shared service center

5.2.1 Attention to the construction of information system

When using biometric technology to introduce financial shared service center to enterprises, we should increase the investment in information system. Financial shared service center is based on remote network construction and information system to establish a financial business and financial resources in the software processing technology. Therefore, the security requirements of information technology and financial data sharing platform are high. We must actively establish and improve the information technology platform and information processing, financial issues of centralization and information sharing advantages. By doing so, it can achieve financial data sharing, optimize and improve the construction of technical platform, provide efficient and comprehensive high-quality information services, realize the organic integration of the system, and create more value for enterprises.

5.2.2 Strengthening the construction of organizational structure

As the pioneer and successful practitioner of financial shared service center in China, it points out that the implementation of financial shared service center is equivalent to a strong internal process reform, and the most important thing is to strengthen the construction of organizational structure. Internally, although successful financial processes and systems are clear, looking around the world, it is not very clear that the process and system are unified and improved. There are notes and standards in their personal financial processes. This organization is not unified, which will make it difficult for the group to measure and evaluate.

5.2.3 Attention to the safety of biostatistics

With the help of biometrics, the financial department improves the efficiency of data use and the system management, and simplifies the work flow of employees. However, with the continuous progress of technology, it also brings a

lot of risks to enterprises. As the saying goes, "risk and income are the same", we need to strengthen risk control to prevent the company from being affected by the risk in the future work process.

5.2.4 Strengthening the personnel management of financial shared service center

Financial shared service center of personnel management is optimized through institutionalization, standardization and routing. When there is no increase in the total number of company finance, fewer people are working in the basic work. In this way, more people will participate in management and other related issues such as strategic decisions related to management. Finance will be infiltrated into all aspects of products, R & D and sales, so as to realize the responsibility of financial management and separate accounting to make the financial transformation more thorough.

6. Conclusion

In the research of financial shared service center, this paper takes the introduction of biometrics as the main line of the research. Through different data tests and the research of financial performance optimization based on K-means, this article optimizes and improves the influencing factors of financial shared service center performance, so as to gradually show the common characteristics of disordered data and classify the performance data more scientifically to provide more valuable information for enterprises. At the end of this study, a systematic test is carried out. In the test, a number of experiments, including the changes of financial sharing data and the development of financial management personnel and management expenses after the introduction of biometric technology were carried out. Through the analysis of test data, it can be seen that the financial shared service center combined with biometric technology has a great impact on both work efficiency and operation cost. With the increase of investment and attention of enterprises, the work efficiency of enterprises has been significantly improved, and its level has reached a higher level in the same industry. Compared with the traditional methods, the financial shared service center with biometric technology improves the comprehensive performance and robustness. This study has achieved ideal results and provided technical support for the application of biometric technology in financial shared service center.

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