Data Mining Analysis Research on Intelligent Application of Cloud Accounting—Taking Cloud Accounting and Financial Sharing Center as an Example

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Abstract. This paper takes the cloud accounting and financial sharing center as the research object. It firstly expounds and analyzes the current status of cloud accounting and financial sharing, its operation management, and data mining intelligence, and provides necessary theoretical support for subsequent optimization. Secondly, through field research, interviews and collection of relevant materials, the current status of cloud accounting and financial sharing center operation management is described and the problems are analyzed. During the description of the current status, problems that can be optimized based on the intelligent perspective of data mining are found. Including performance management, risk management and process management modules. It enriches the method and technical system of cloud accounting and financial sharing centre’s operation management optimization, contributes to the intelligence and automation of cloud accounting and financial sharing centre’s operation management, effectively reduces the cost of operation management of cloud accounting and financial sharing center, and improves the operational management quality.

Keywords: Data mining analysis, cloud accounting, financial sharing, intelligent application

1. Introduction

The concepts and theories of internal services and internal customers provide a basis for the presentation and application of shared service theories. Because the traditional concept of service believes that the service is implemented by the marketing department through the marketing process, and the customers are from outside the organization, the organization must work through the marketing department to serve these external customers in a way that they like and are satisfied [1, 2]. However, there is also a relationship between users and service providers within the organization and its network partners. If an enterprise attempts to provide quality services to external customers, when the external customers contact employees or departments, they must obtain internal [3]. With the assistance and support of other employees and departments, the recipient of internal services is the "internal customer". Only if internal customers provide satisfactory services to each other like service market customers, can the management performance of the enterprise be improve [4].

The definition of cloud accounting studied in this article is: under the combination of cloud
computing technology and accounting technology, an enterprise or branch transmits information to a resource pool through the network, processes the information according to user needs in the resource pool, and then feeds back to the An enterprise's pay-as-you-go accounting processing model mainly includes renting outsourced software services and establishing a financial shared service center [5]. A subsidiary or a single enterprise renting a cloud service platform can allocate resources such as physical objects, space, and services in a timely manner according to the requirements of the enterprise and comply with the requirements of different units for financial information processing.

2. Cloud accounting financial sharing center operation management optimization construction

2.1 Intelligent construction of cloud accounting

In addition to its financial accounting functions, the financial sharing center should also assume functions such as risk control and decision support. The financial sharing center will centrally process the financial accounting and management of the enterprise, and it will be very convenient to use and schedule the data in a unified manner. At the same time, the use of big data technology can also obtain external data of the enterprise, and the internal and external data of the financial sharing center [6]. The combined analysis will provide a lot of useful information for the enterprise's business decision.

The risk control of enterprises in the traditional sense is more based on financial and operating data for post-event analysis or improvement in the event, and more is based on human experience and subjective knowledge, and the risk assessment will inevitably lead to errors, which will cause huge loss. Using big data mining technology, through the establishment of intelligent analysis models, the company's huge and complex historical data is fully excavated, developed and analyzed to achieve the effect of risk identification and prediction, so that companies can take countermeasures in advance.

The goal of the establishment of the enterprise is to maximize the value. With the continuous rise of labor costs, the operating cost of the enterprise financial sharing center has been increased. Using process automation technology, through the deployment of intelligent robots in the financial sharing center, the basic, repetitive, and regular tasks of making friends with the financial robot will be processed to achieve the intelligence of the financial sharing center while reducing costs and improving efficiency [7].

![Cloud accounting financial sharing center operation management optimization framework](image-url)
In the process of optimizing the operation and management of the financial sharing center, it should emphasize the participation of all members of the financial sharing center, and take the financial staff as the main body to mobilize the enthusiasm and initiative of all the personnel of the financial sharing center, and encourage everyone to propose based on their respective departments or various job positions. Based on his existing insights and suggestions, he promotes the subsequent optimization and improvement of the operation and management of the financial sharing center, and brings more inspiration to the optimization. The operation management optimization of cloud accounting and financial sharing center based on big data intelligence is shown in Figure 1.

2.2 Data mining model construction

In the K-means algorithm, distance is used to measure the distance of the sample, so in the calculation of distance, the weight of each variable in the distance should be kept consistent [8]. When variables with different orders of magnitude are calculated together, the variables with larger orders of magnitude will have a greater impact on the results. In order to reduce the adverse effects caused by the order of magnitude, the data should be standardized, such as the four variables of per-hour invoice verification per capita in the above table, the number of valid customer complaints, the timeliness of customer complaint processing and the average payment cycle, using the following formula for standardization deal with.

\[ H_i = \frac{h_i - h_{\min}}{h_{\max} - h_{\min}} \]  

The first step is data acquisition. The enterprise obtains accounting big data through Internet of Things technology or Internet platform, that is, business data and decision-making analysis data, which include both structured data and unstructured data.

\[ H = \{h_i \mid h_i = (h_{i1}, h_{i2}, \ldots, h_{ik}), i = (1, 2, \ldots, k)\} \]  

The second step is data processing and storage. After acquiring big data, structured data and unstructured data should be processed separately. After unstructured data are preliminaries processed, extracted and indexed to form metadata, the set rules are used to perform accounting processing on the obtained structured data and the sorted metadata, and all processed data and original data are stored in the cloud storage center.

\[ G = \{g_i \mid g_i = (g_{i1}, g_{i2}, \ldots, g_{ik}), i = (1, 2, \ldots, k)\} \]  

The third step is the output of data. After processing and storage of accounting big data, the cloud accounting system can adjust the content and form of the output information in time according to the need of users. Users can obtain it through search engine technology anytime and anywhere according to their need. The last step is data analysis. On the cloud platform, information providers, users, and accountants tap the value of data in a credulously manner.

\[ B_{\text{disc}}(h_i, h_j) = \sqrt{\sum_{k=1}^{m}(h_{ik} - h_{jk})^2} \]  

With data information and numerous data analysis models on the platform, we have reached the implementation stage of enterprise data value mining. We know that due to the limitations of professional knowledge skills and thought value attributes, people's understanding and thinking of problems often reflect a certain kind of the degree of limitation, and "groups can make up for the limitations of individual thinking, so as to make a comprehensive analysis", deepening the breadth and depth of problem thinking and data analysis, groundsheet has increased the opportunity to discover the value of information embedded.

In the process of data processing and value mining, groundsheet also reflects the characteristics of diversity and personalization. Since everyone can extract the data information in the accounting process and make their own analysis, we can get a lot of personalized information by removing a small amount of repetitive parts. Because everyone has different information rights and concerns, we will not only get a variety of personalization, but also a lot of valuable viewpoint value differences. After
everyone generates their own financial reports and opinions input to the cloud platform, we can integrate these different reports and opinions through the platform and evaluate the information as a whole. In this way, a large amount of data analysis results with wide coverage and concentrated value can be generated by the system, so as to achieve the effect of using the wisdom of the group to mine the internal information value of the enterprise.

3. Results analysis

3.1 Model analysis

The purpose of enterprise application cloud services is to improve the efficiency of enterprises, achieve office work anytime, anywhere, and reduce enterprise costs. For most enterprises, especially small and medium-sized enterprises, they will choose a standardized cloud accounting service platform, which cannot meet the individual needs of enterprises. This may lead to inefficiency. For large group enterprises, due to the large number of organizations, the implementation of cloud accounting in the context of a private cloud platform must complete the comprehensive transformation from personnel, organization to process, and the implementation must inevitably involve a large amount of capital. If it fails, it will inevitably generate a large amount of sinking costs. It will cause the outflow of excellent talents and bring losses to the enterprise. Relatively speaking, the last risk consequence is not too serious, because the low service quality is due to the fact that most enterprises have just started to use cloud accounting, and it is unskilled or management personnel who are not very clear about the location of the information provided on the cloud platform. The increase in use frequency will be improved, and it will not directly cause losses to the enterprise. Therefore, the service quality problem is relatively small compared to the previous problems. The results of data mining analysis are shown in Figure 2.

![Figure 2. Data mining analysis results](image)

According to the analysis of the occupation of the personnel, as showed in Figure 3, 46.84% of enterprises believe that the risk is moderate, and among the scientific research and education personnel, the risk is moderate, accounting for 59.87%. Therefore, the overall risk level of the enterprise is moderate, but in practice, enterprise personnel may still have concerns because of the change in the location of information storage, so the degree of risk is exaggerated.
3.2 Intelligent analysis

The cloud accounting platform of the financial shared service center under big data allows financial business executive to expand from the horizontal to vertical development of business expansion, that is, to the transformation of management accounting services. Fund managers should use cloud accounting platform capital management on the basis of high-level information technology capabilities. Support of services is more involved in deep-level fund management such as fund report evaluation, budget analysis, and fund cost control. For example, in the project investment process, the fund management personnel can allow the market investigator to collect the traffic data and peak consumption data to the financial sharing service center, and the cloud accounting platform will automatically intelligently carry out investment risks, Profitability analysis and preparation of feasibility reports, and this feasibility report generated by artificial intelligence provides a powerful reference for managers to make project investment decisions.

Under the big data, the financial sharing service collects massive fund data to the financial sharing service center based on the distributed financial data bus. Fund managers need to use data mining technology to describe the regularity of the existing fund data and predict the relevant future fund data. First, use heterogeneous analysis to filter out the non-representative fund data generated under abnormal circumstances, and classify the fund data according to common characteristics and unique characteristics according to various feature values. For hard-to-categorize fund data, continuous numerical values can be used to predict; Then on this basis, use simple, time series and causal data association methods to mine the degree of association and association rules between certain funds data; then, for some funds data that cannot be analyzed using known data rules, such as financial The relationship between the frequency of drinking water and the capital turnover rate of employees of the shared service center can be obtained by using clustering algorithms such as KM algorithm and gravity search algorithm; finally, the discovery of these known and unknown fund data laws provides decision-making for fund management stand by.

4. Conclusion

As the key factor for efficient and stable operation of the financial sharing center, cloud accounting and financial sharing center operation and management optimization has also attracted more and more attention from enterprises. At present, in order to unify the financial system of the unit and carry out unified accounting and control, more and more units have established a cloud accounting and financial sharing center. Through cloud accounting and financial sharing center, centralized management and control of data is realized, which facilitates data collection. Accounting and financial sharing center provide data foundation for intelligent optimization of data mining. With the development and
application of big data intelligent technology, the operation management optimization of the enterprise cloud accounting and financial sharing center has also undergone great changes. The intelligent operation management optimization based on data mining is to operate information technology into specific business scenarios. Reflect the operation business from the perspective of data, optimize the problems in operation management.

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