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# Construction of Management Information System for Small and Medium-Sized Enterprises under Cloud Computing Environment

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***ABSTRACT.****In China, with the continuous advance of cloud computing technologies such as virtualization technology and big data processing technology, small and medium-sized enterprises are constantly updating and improving their management information system. In recent years, computer network technology and information technology have been gradually applied to enterprise management. With the development of enterprises, a large number of heterogeneous software services deployed on different servers are accumulated in enterprises. Cloud computing can not only reduce the cost of informatization construction of small and medium-sized enterprises, strengthen the integration of information resources, promote resource sharing, but also promote enterprise management and service innovation. In view of the development of social economy and the advance of the industry, if the enterprise wants to be better based on the market, it must realize the scientific management mode, and constantly improve the efficiency and quality of work. Through the cloud* computing model, this paper introduces the system construction of the management information system for small and medium-sized enterprises in the cloud computing environment and the implementation scheme of enterprises in the cloud computing environment.

**Keywords:** Enterprise management, Cloud computing, Information resources

## 1. Introduction

In recent years, computer network technology and information technology are gradually applied to enterprise management. Due to the continuous advance of computer technology and network communication technology, the operating environment and business model of enterprises have been affected to a certain extent [1]. At present, the problems of the rigidity and low efficiency of the operation and management mechanism of state-owned enterprises in China are still quite common. The maladjustment between the operation and management ability of enterprises and the socialist market economy system is a major reason for the operation loss of state-

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owned enterprises in China [2]. To change this situation, we must rely on internal and external reforms. In the current environment of global economic integration, enterprises should be prepared to meet challenges while facing opportunities [3]. The enterprise will purchase the management software according to its information needs of different periods, and deploy the purchased software on different servers in the enterprise [4]. With the development of enterprises, a large number of heterogeneous software services deployed on different servers are often accumulated in enterprises. Cloud computing is one of the computer technologies, which uses the transmission capacity of the modern Internet to move the data processing process from the computer to the centralized area of the Internet [5]. In order to enable the production and management efficiency of SMEs to be significantly improved, relevant staff can properly integrate cloud computing technology in the current enterprise management system, and in this way, enterprises can have more advanced management methods [6].

Management information system, as an aggregator of enterprises using information technology for production, management and decision-making, how to improve themselves to adapt to the changes in the living environment and competition rules brought about by the development of new technologies has become an urgent problem to be considered in the construction of enterprise management information systems [7]. Cloud computing can not only reduce the cost of informatization construction, strengthen the integration of information resources and promote resource sharing, but also promote enterprise management and service innovation. The starting point of strategic management is the analysis of the external environment, focusing on the decision-making, decomposition and adjustment of strategic objectives, and the difficulty is the implementation and dynamic control of strategic plans [8]. With the acceleration and popularization of enterprise informatization, a rising number of enterprises have accelerated the response speed of enterprises through the construction of informatization and improved the competitiveness of enterprises [9]. In response to the development of the social economy and the development and changes in the industry, enterprises must achieve a scientific management model and continuously improve the efficiency and quality of their work if they want to gain a better foothold in the market [10]. Based on cloud computing, this article uses cloud computing distributed computing, virtualization and resource pool technology to integrate and migrate resources of small and medium-sized enterprise information systems through cloud computing platforms to better improve the sharing and interactivity of enterprise data information. Increase the utilization rate of data to further enhance the economic efficiency and innovation ability of enterprises.

## 2. The Role of Cloud Computing in the Information Management System for Small and Medium-Sized Enterprises

For small and medium-sized enterprises, using cloud computing technology makes their information management system get better progress. With the support of cloud computing technology, small and medium-sized enterprises are not required to

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purchase certain hardware equipment, or apply for software licenses, or upgrade and update various software on time. As long as there is a network, cloud computing can provide computing power in the form of service resources. The use of service resources can be monitored and measured, and reports can be provided to suppliers and users, so that service resources can be quantitatively controlled. Although enterprise information management has made significant progress, on the whole, the informationization of small and medium-sized enterprises in China is still not perfect in its current form, and there are still some problems in the process of enterprise construction. The enterprise management information system under the cloud computing environment can not only assist the efficient management of enterprise personnel, but also greatly reduce the management cost of enterprises. This feature of cloud computing can not only significantly reduce the cost invested by enterprises in construction, but also obtain more profits from it. On this basis, more optimization can be accomplished when allocating resources.

Using cloud computing technology in enterprises, employees can complete the transmission and acquisition of remote data, and break the previous fixed working mode, as well as greatly improve work efficiency. Relevant designers need to fully study the actual situation of small and medium-sized enterprises and integrate some existing information technology resources of enterprises, which are more conducive to the establishment of a brand-new database of enterprises. For the user's terminal hardware, the requirements of cloud computing technology are very loose. Usually, the original storage devices and operating systems of small and medium-sized enterprises can support the operation of cloud computing technology [11]. Enterprise management information systems based on modern information technologies such as cloud computing need to further enhance the management efficiency and service capability of management information systems according to the needs of society. In the process of using cloud computing technology, if enterprises want to transmit and obtain data, relevant employees can achieve it by remote means. The previous working mode has been broken, and the work efficiency has been greatly improved. On the basis of emerging information technologies such as cloud computing, when establishing enterprise management information systems, it is necessary to consider the needs of society in a more comprehensive way, so as to continuously strengthen the management efficiency and service capability of management information systems.

## 3. The Construction of Small and Medium-Sized Enterprise Information System under Cloud Computing

### *3.1 Advantages of Information System Construction of Small and Medium-Sized Enterprises under Cloud Computing*

Compared with the traditional computing mode, the advantages of cloud computing mode are obvious. The most striking feature of cloud computing technology is that storage can be distributed, and processing can be completed under the state of virtualization, without special requirements for required hardware

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facilities. It is impossible to construct all information systems of small and medium-sized enterprises at one time during their growth. The most practical and effective solution for various information systems of small and medium-sized enterprises should be unified planning and step-by-step implementation, and system design should be carried out by using a unified data platform. When cloud computing is not applied to small and medium-sized enterprises, the management system for small and medium-sized enterprises is purchased by middle and high-level managers themselves, without corresponding technical talents, all of which are independently developed or purchased. The data collection and storage of information are completed on local computers, and all departments communicate with each other in local area networks. Integration and migration of enterprise information systems are mainly based on distributed processing technology, virtual technology and resource pool of cloud computing platform to complete data exchange. The enterprise information system under cloud computing is built on a completely shared data platform. According to the confidentiality of enterprise information system, we divide its data into private data, public data and mixed data. Enterprise management information is a kind of comprehensive management using modern computer technology, database technology and other business processes and management, in order to improve the leading position of small and medium-sized enterprises in the market, to realize the sharing and utilization of information, and to maximize the economic benefits of enterprises.

### *3.2 The Architecture of Information System for Small and Medium-Sized Enterprises under Cloud Computing*

In the actual construction of the enterprise management system, it is necessary to manage all aspects of enterprise management. Data storage system, financial system and sales system all belong to the work category of enterprise basic management system, which is quite complex. Therefore, some plug-ins of classified management should be appropriately added to the design process of a management information system application layer, so as to build a more organized application layer. The development of cloud computing has solved the problems of redundant system construction and poor data sharing, and the overall planning and distributed implementation of information systems for small and medium-sized enterprises has become simple and easy. Enterprise management information system in cloud computing environment can help enterprise personnel to manage efficiently, at the same time, it can also greatly reduce the management cost of enterprises [12]. In the era when cloud computing is popular, small and medium-sized enterprises are implementing enterprise informatization construction under cloud computing environment. As users, enterprises can use cloud computing to solve the problems of talents, technical support and funds in enterprises. Before designing the cloud computing infrastructure layer, it is necessary to sort out the relevant management information of the enterprise, and establish the corresponding data center, in which the hardware resources such as storage equipment and service equipment which are connected by the network system are included. Compared with previous computing models, cloud computing has obvious advantages. The data mining process in

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financial analysis generally consists of five main stages: determining financial analysis objects, data preparation, data mining, result analysis and knowledge assimilation, as shown in Figure 1.

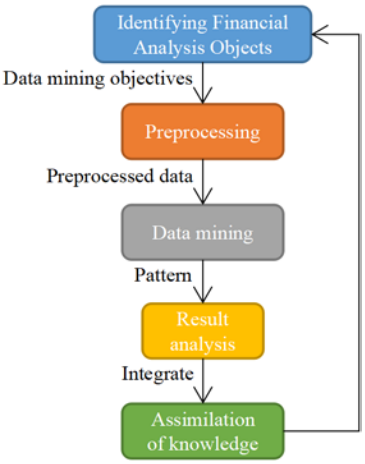


*Fig.1 Data Mining Process in Financial Analysis and Management*

Because cloud computing has the characteristics of distributed storage and virtualized processing, the requirements for hardware facilities are not high [13]. By using virtualization to deal with the services and storage devices in the database, a virtualized platform is built, with the aim of integrating the virtualized hardware devices, which will eventually form a large virtual resource pool. If small and medium-sized enterprises want to further complete the progress of enterprise information management, they must make enterprises operate various services under the cloud computing environment reasonably before they can further improve.

## 4. Conclusion

At present, in the process of informatization construction of small and medium-sized enterprises in China, a key link is to build a cloud computing technology management information system. Small and medium-sized enterprises play a leading role in the development of China's national economy, and the information management construction of small and medium-sized enterprises is essential. With the application of cloud computing technology in the current management information system, resource sharing can be realized more efficiently, and some basic contents can be handled by fully combining its related requirements. Cloud computing has many advantages such as high sharing, low cost, high efficiency and easy expansion. There are various kinds of cloud services, which can be either standard applications with a large audience or customized online services. Widespread application of cloud computing technology has been related to all

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aspects of people's lives, and traditional information systems are constantly withdrawing from the market. Cloud computing technology is integrated into today's management information system, which can more effectively complete the basic content of resource sharing and processing on demand. In the cloud computing environment, the IT infrastructure of enterprises is integrated into virtual unified resources for management, and distributed according to the different needs of information systems of various departments, thus achieving the purpose of improving hardware use efficiency and reducing costs.

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