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Research on ERP financial management system based on computer cloud computing

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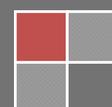
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ABSTRACT

Informatization is the inevitable requirement of development. This paper takes the SMES of our country as an example. Facing to the new informatization way--cloud computing ERP financial management system, the SMES is in a bind in the informatization construction. This paper builds a system of enterprise information resource management based on clarifying the intrinsic quality of cloud computing ERP financial management system. Through this firm can gain the sharing resources, reduce the cost of enterprise information, transforming from traditional one to digital one, and improve the core competitiveness market competition.

KEYWORDS

SMES; Cloud computing ERP; Core competitiveness.



INTRODUCTION

In our country, the SMES is regarded as the important growth points in the national economy and the important power for sustainable development of national economy. They provide almost 80% of posts, create about 60% of GDP, and turn in tax accounting for 50 % of the national total tax. The development of the SMES is related to the international competitiveness of the whole country. And the role of informatization to promote the development of SMES is very obvious.

It can reduce the enterprise cost, improve the production efficiency, further the business growth, promote the technology innovation of enterprise, improve the organizational structure of enterprise, and improve the customer satisfaction. In this way, the SMES can improve their competitiveness. Therefore, the informatization level plays a big rule in the development of the enterprise^[1].

However, the informationization construction is not ideal because of the late starting of SEMS informationization, the unsatisfactory SEMS informationization construction as well as the lack of solution conforming to its own characteristics. According to the survey about the development of informatization of SMES published by CCID, only 8% of SMES think that “the perfect of the information system lead to the efficient work”, as much as 51% of them think that “although the informationization of enterprise has been developed, the effect is not obvious”^[2].

ERP financial management system (short for ERP system) was designed in the 1990s by an American IT company Gartner Group. It is based on the development of computer technology and IT technology and the demand of the enterprise for supply chain management. The system is aimed to build a integration software of enterprise management application within logistics (material resource management), stream of people (human resource management), financial flow (financial resource management) and the flow of information (information resource management)^[3].

ERP system can be seen as the blood circulation system of enterprise. It ensures the unified, integrating and real-timing of the information systems based on computer technology. Through this the enterprise can realize the rational use of resources, complete the balance on using financial, human, material and information of the enterprise, and realize the maximization of resource sharing. In the fierce competition of market, the ERP system can coordinate the collaborative operation of various functional departments of the enterprise according to the market orientation, in order to obtain the best economic benefits^[4].

Compared with the state-owned or large enterprise, many of the SMES is disadvantaged on the competitive because of the weakness in independent innovation ability and the phenomenon of product homogeneity. The emergence of ERP based on cloud computing technology solves the problem of the informationization promoting of the SMES, providing a new solution for the SMES to realize the informationization. The enterprise can gain the software maintenance just to invoke the ERP system in the resource pool deployed by cloud ERP supplier, but not to build an ERP system in the enterprise^[5].

Cloud computing supports for WEB application, server cluster, distributed storage and the internet of things; in the perspective of user experience, development and client-side installment are not needed; user can use application software anywhere anytime with network and browser; it supports for multi-language, auto update and is maintenance-free. It greatly reduces capital investment of enterprise and human resources of the SMES by using the on-demand rental service through the cloud ERP. And it's also let the SMES to meet the urgent need of information effectively; through this the management level of the enterprise managed by ERP can be promoted allover; it can bring the efficiency of production, management, decision-making of the enterprise; it's of prime importance to the development and enhancement of the core competence of the SMES in our country^[6].

THE ESSENCE OF CLOUD ERP FINANCIAL SYSTEM

A benign construction for informationization is based on Infrastructure-as-a-Service (IaaS), and the user can rent online through the Platform-as-a-Service (PaaS) developed by Software-as-a-Service (SaaS)^[7], shown in Figure 1. Actually, PaaS is generally including all of the base installation for the use of the application, such as the Google App Engine used in this system is based on its massive

infrastructure, including server instance, storage capacity, etc. So it's no need to order IaaS, and SaaS is also developed on account of PaaS. Therefore, IaaS, PaaS, SaaS can provide service in different gradation through the specific software technology based on the same technical framework.

In this mode, the providers of cloud computing ERP service just need to focus on the installation, maintenance and version of the centralized control of the software and provide new –type of service to users; the users of cloud computing ERP can visit the service anywhere and anytime with desktop computer, PC, netbook, mobile phone and PAD, etc.; it's easier to share the data and labor; and the data storage on the basic system is safe.

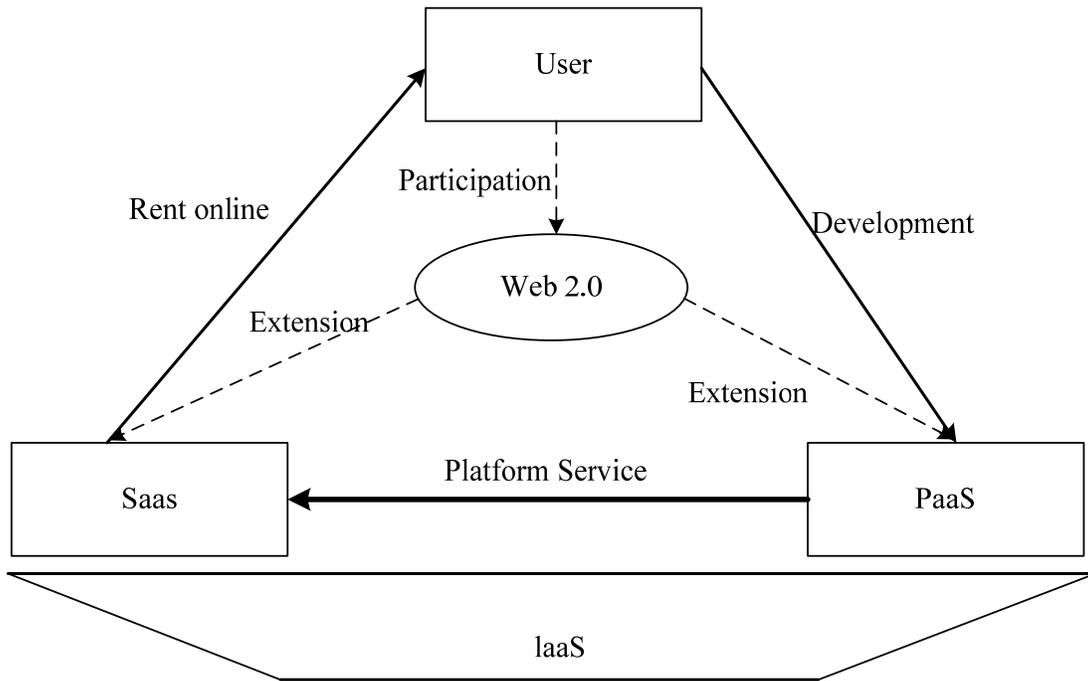


Figure 1 : Cloud Computing used in informatization construction

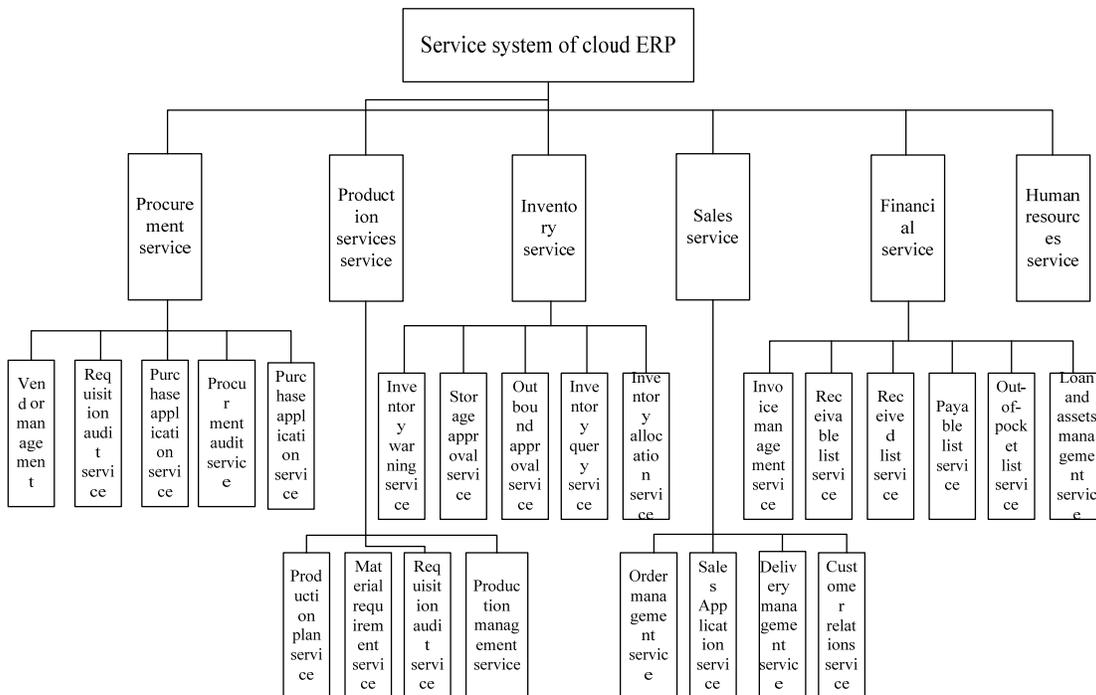


Figure 2 : Functional modules of c-erp system

THE ADVANTAGE OF CLOUD COMPUTING ERP FINANCIAL SYSTEM FOR SMES

The cloud computing have the characteristics of pay as required virtualization and high expansibility, etc. The cloud computing ERP is depend on the cloud computing, so it's decided that the using of cloud computing in SMES will break the localization of fund, technology, personnel in informationization construction; exploiting the new situation of informationization construction of SMES; and it's meaningful for them to cut down the distance with the informationization construction of large enterprise.

Reduce the cost of capital investment

The cloud computing ERP provide the ERP software maintenance for the enterprise just like the CHEAA provide the power supply service to users with low cost, buy as required and safety. It saves the cost of spending for enterprise to buy software, hardware and employ the IT technician in the application model of traditional information; for SMES, it can solve the financial matter to use the ERP.

Maintenance work after transfer

The enterprise accredited by cloud computing ERP can use the cloud computing ERP system through the internet without buying software and hardware; this new model can not only save the fund of enterprise but also reduce the maintenance work after software implementation; removing the complex maintenance of software and hardware to cloud computing ERP service provider in stage of using, realizing the risk deflection in the stage of application successfully.

The cloud computing is a new-type of computing service mode, it integrate the characteristics of distributes computation, grid computing, virtualization technology and utility computing. It integrates the large-scale server cluster, computing resource, storage device up in the air then provide to users on-demand. It is a core development direction of cloud computing to apply to the information development of enterprise. Enterprises informatization is to digitize the production management, material requirement management, business process, financial management, customer relationship management, etc. Enterprise can generate digital information resource through information management system for workers to check all information in dynamic business. Therefore, they can design out solution beneficial to optimize management of production resource and obtain maximum economic benefits; meanwhile, enterprise can get an edge in the competition environment of market economic.

Reduce data management

The cloud computing ERP system completes the segmentation tasks, directional resolution and automatic scheduling of users in the server cluster of cloud computing platform, with joint response. The data generated by transaction processing store in the resource pool which is the enterprise applied and the cloud computing facilitator provided, ruled out hidden danger like the loss of data and the invasion of virus. The enterprise can be liberated from the previous cumbersome management of data.

Solve the problem of system integration

Cloud computing ERP can implement business integration, data sharing, and process control inside the enterprise through internet. When the enterprise needs to gain more resource they can extend the need of service or system (CRM, HR, PDM, OA, etc.) by increasing expenses. Cloud computing ERP reduce the waste of repeated investment for enterprise, and avoid he malpractices like information islands due to the no integration of the system function.

DISCUSSION

The traditional ERP system software is generally realized for one or a special type of enterprise, cannot meet the claim of informatization of all the enterprises; meanwhile, following the changing of Internet development model and the growing of market conditions, the ability of traditional ERP system

to reply the saltation of business show up delay because of its rigid construction. The stress for data processing server of ERP system become more and more big because of the geometric growth of information data from the development of enterprise. The deploy for traditional ERP system need operation and maintenance of professional, erecting server and buying ERP software at the same time, it brings enormous of input costs for informatization. The major industry has a high input ratio of ERP system because of the strong financial background. The SMES is too far behind to catch up with the traditional ERP system within high input cost usually because of the financial strain, inadequate management; personnel allocation for information is not in place and so on. However, SMES is regarded as the main enterprise form in our country at present, over 99% of the enterprise in our country is SMES. The physical product and service value they created in accounts for 60% of GDP, it plays an irreplaceable role in prosperity of the domestic economy, promoting technological innovation, expanding production of export, increasing employment, etc. Therefore, to improve the core competitiveness of SMES is to raise the competitiveness of our country in the world. In this context, more and more people in the industry start looking for the suitable. ERP system especially for SMES-ERP system based on cloud computing.

ERP system based on cloud computing is that by the cloud computing platform will be field of enterprise resources by using service oriented way to the standard service provides a shared resource to the user.

Market analysts and media authority forecast: the next 5 years the cloud computing companies like ERP to large-scale applications will become the normal^[8]. Speaking technically, cloud computing support WEB application, server cluster, distributed storage and internet of things; from the aspects of user experience, they can use the application software anywhere and anytime by Internet and a browser, need no disposition and installing the client, support for multiple languages, automatic updates and maintenance free. SMES can lease the service through the cloud ERP on demand, greatly reduce the capital investment and human resources of enterprise, and meet the urgent need of informatization of SMES effectively; and it also let the SMES to meet the urgent need of information effectively, overall improves the management level of the enterprise managed by ERP, and brings efficiency to production, management, decision-making of the enterprise; it has very important meaning for the development and enhancing core competitiveness of SMES in our country^[9].

This article points the needs of the ERP to SMES by analyzing the necessity and value function for informatization of SMES and the awkward situation for the implementation of ERP because of the financial strain, the lacking of IT professional; It illustrated that that the application of cloud computing in construction of ERP is the development tendency for the future informationization construction of SEMS^[10].

CONCLUSION

The attraction of ERP software is to reinterpret the concept of enterprise management, and the advent of the era of "cloud" provides contact chance for computing and ERP, injecting new vitality into the ERP^[11]. SMES should not fall behind the time but conform to the trend, sufficiently know the cloud computing ERP, grasp the essence of it, understand the advantages and potential risks, and the corresponding preventive measures. As a result, the cloud ERP will be a great benefit to the SMES in pursuit of the tide of information construction, boosting SMES to a new success.

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