

2012 International Conference on Solid State Devices and Materials Science

A Mode of Combined ERP and KMS Knowledge Management System Construction

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Abstract

The core of ERP and knowledge management is quite similar; both will send appropriate knowledge (goods, funds) to the right people (position) at the right time. It is reasonable to believe that increase the knowledge management system in ERP will help companies achieve their goals better. This paper compares the concept of logical point of hall three-dimensional structure of the knowledge management system and the ERP in methodology level. And found they are very similar in the time dimension, logic dimension and knowledge dimension. This laid the basis of methodology in the simultaneous planning, implementation and applications. And then proposed a knowledge-based ERP Multi-Agent Management System Model. Finally, the paper described the process from planning to implementation of knowledge management ERP system with multi-Agent interaction and impact from three concepts, management thinking, software and system.

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Keywords-Multi Agent; ERP; knowledge management; system model

1. Introduction

Knowledge management is a senior information management process, meeting point of ERP and knowledge management is their common concern for knowledge. Both knowledge management and ERP are intended to improve efficiency throughout the organization, achieving maximum efficiency throughout the organization through the use of knowledge sharing, business processes channel to develop a value-added supply chain.

Compare to enterprise knowledge management, the construction of knowledge management system development techniques and tools are the most mature products, and it's the easier point of enterprise

knowledge management easier to implement. So that most companies will build a knowledge management system as a starting point of knowledge management activities. At present, how to build knowledge management system based on ERP such a widely used in enterprise information systems has become an urgent problem to most businesses.

2. Multi agent knowledge management system

Knowledge Management (KM) is management of a company to its knowledge resources, including the identification of specific knowledge, acquisition, development, storage, transfer, sharing, utilization and evaluation, to promote the enterprise tacit knowledge and explicit knowledge sharing, and improving the technological innovation capability. Knowledge Management System, KMS is a tool for knowledge management, knowledge is a help to collect, organize the collection and dissemination of management techniques. It is a system to make knowledge available to experts from individual to individual, comprehensive, complete and systematic system. It can also be effective through the knowledge of the people, to people management, conditions for the employees to provide innovative and creative mechanisms to maximize the intellectual potential of the enterprise to improve decision-making speed and quality.

Agent is generally considered a class in a specific environment can sense and adapt to the environment, and flexibility, the autonomy to run the deal with the calculation of a series of goals to achieve the entity or program. It has the autonomy, sociality, reactivity, reasoning and motivation and so on. However, due to the number of system resources and the Agent's own capacity constraints, a single Agent can accomplish is limited, so people began to study how the number of self-government collaboration between Agent together to complete complex tasks, which is multi-Agent Systems , MAS.

At present, many scholars have proposed to Agent integration and knowledge management systems thinking. KMS guidance to the system modeling of scientific thinking to the field of AI methods and strategies for technical support, knowledge chain model for the main line of KMS to the enterprise environment and build related infrastructure-based knowledge management system. Agent technology applied to the multi-knowledge management system to go. In addition a large number of documents to knowledge management based on multi-Agent system application in different fields, such as schools, government, consulting, etc.

3. Comparison of ERP and knowledge management systems on the concept and logic level

3.1 Conceptual model and logical model of ERP

Industry proposed the concept of ERP is divided into three levels: ERP management thinking, ERP software, ERP systems.

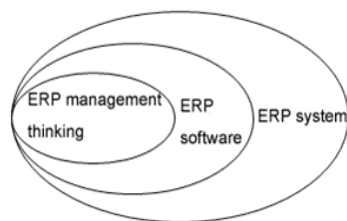


Figure 1. ERP concept model.

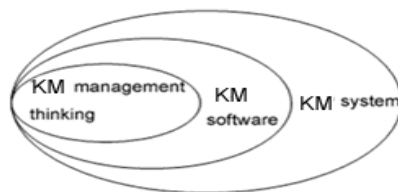


Figure 2. Conceptual model of KMS.

ERP management thinking, which is the core of the concept, without the guidance of the management thought of ERP, ERP software development and direction of the soul will be lost. ERP Software is a combination of advanced management ideas and advanced business model, using the latest achievements in the information industry, for the implementation of ERP management thought the reality of the information platform built. Enterprises in order to get a well-functioning ERP system choose a suitable business background of ERP software is only a first step, the implementation must pass the science, according to the way ERP software optimized to support enterprise business processes, in order to form the ultimate band for the enterprise ERP management system to benefit. Therefore, ERP after trials and implementation of management thinking with a software company and then to other resources into the system will go through a very complex process in which any part of a problem may have resulted in the failure of ERP, the ERP project can to ensure the orderly conduct of This article made use of ADH all the Hall three dimensions structure, the structure provides a systems engineering methodology can be widely used, it is by the time dimension, logic and knowledge-dimensional composition of three-dimensional structure, the image describes the framework of system engineering.

3.2 Conceptual model and logical model of knowledge management system

KMS modeling based on ideas and methods to be followed, KMS and the ERP concept model concept model also has similar characteristics, based on this conceptual model is proposed KMS (in Figure 2). KM management thinking, which is the soul of the KM system, guides the KM software. KM software is

a "field of the AI methods and strategies for the advanced technical means to complete knowledge of a clear chain of the main line as the center" of the software. KMS is the KM software with the surrounding environment, such as human, and other enterprise information systems and networks interact to form the system. We will combine Hall-dimensional structure of the knowledge chain, knowledge chain, has been based on the logical model of KMS.

3.3 ERP system and compare the level of knowledge management systems

Conceptual structure, we can see, ERP and KMS have similar levels, both must be the core of management thinking, planning and implementation of software, and eventually integrated with the surrounding environment to form a unified system. This time the two begin to form in management thinking can create a unified plan to lay the basis for conceptual level.

The logical structure, we learned that the construction of ERP and KMS can be used as a systems engineering three-dimensional structure of the Hall. This article in order to better compare the relationship between the three latitude, the process dimension is still reduced to time dimension, while Figure 4 is very important dimension of knowledge, it reflects the KMS is different from the unique nature of information systems, so this building The KMS logical model has four dimensions, in which the process of knowledge-based chain dimensions as a derivative when the dimension of the development program, that program in the development of KMS, we should by the knowledge chain as the main line.

In terms of the logical model or conceptual model to compare, ERP and KMS are very similar. The reason is that ERP and KMS is a system that works, so the concept of logic levels between the two have a lot in common. So simple compared to the knowledge management system using software interface access ERP, if the management thought in the initial formation of ERP will be an important component of KMS as taken into account, a unified planning, the implementation of the ERP implementation process of integration into the KMS process, both simultaneously, so the end result will certainly be more ideal. Want to use ERP and KMS for the enterprise, ERP project can start in the KMS will be integrated into the thinking of ERP software ERP system implementation as well as the final, so KMS system can combine with the ERP, and ERP in a large number of data resources can also be a source of knowledge KMS.

4. Multi-Agent management system framework based on erp

In recent years, many IT companies have launched a KMS development platform, but in reality, they only provide a platform for further development of tools to successfully build enterprise KMS, not only need these tools, more importantly, want to KMS's basis functions and the framework has a profound understanding and awareness. Based on this, we propose a Multi Agent-based ERP, Knowledge Management System Framework.

We can see that ERP-based Multi-Agent System Framework of Knowledge Management within and outside the enterprise, corporate knowledge portal, ERP software, database and data warehouse, multi-Agent based software components of KM.

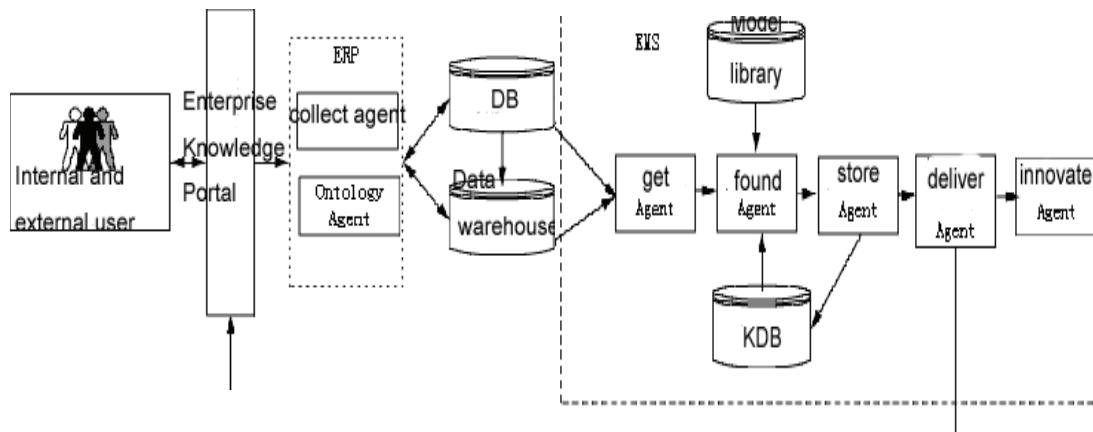


Figure 3. Example of a ONE-COLUMN figure caption.

- Internal and external personnel: Knowledge Chain-based Knowledge Management System to serve the people, all activities are for the most appropriate knowledge can the most appropriate time to provide the most appropriate person to make the most appropriate decision to , fully embodies the concept of people-oriented management.
- Enterprise Knowledge Portal: In order to facilitate understanding, the knowledge stored in the computer must be translated into the appropriate users to understand the form.
- ERP Software: In addition to traditional ERP modules include acquisition of two parts Agent and Ontology Agent.
- Database and data warehouse: database and data warehouse to provide data support for the KM software, database, data from the ERP software in the ordinary course of business data, data warehouse data is organized around a theme taken from the operational database and processed through the wash Comprehensive data.
- KM Software: KM software is based on the structure of the knowledge chain; knowledge acquisition is divided into Agent, Knowledge Discovery Agent, knowledge storage Agent, publishing and sharing knowledge, Agent, Agent and other modules of knowledge innovation.

5. Mplementation steps and knowledge management systems

Whether it is ERP or knowledge management system is essentially a management information system, it can be in the implementation of steps to follow the theory of system implementation. Knowledge Management in the ERP from the time which appears divided into two cases, one is the enterprise in the implementation of ERP implementation of knowledge management systems at the same time, both are synchronized in time, then knowledge management system should be considered as ERP part in management thinking to take full account of the formative stages of the interaction and influence between the two. Multi Agent Knowledge Management System to interact with the package to access the ERP Agent.

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Figure 4. ERP and KMS implementation steps.

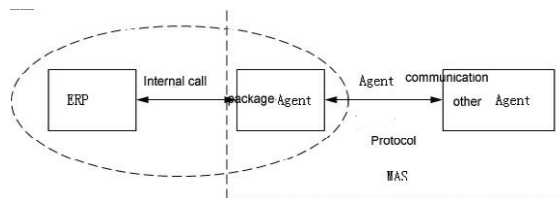


Figure 5. Packaging Agent.

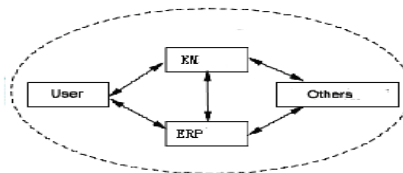


Figure 6. Schematic diagram of ERP system and KMS

6. ERP system and knowledge management system

Enterprise system is interact among the software, people, the environment and other factors to form a whole, from the system point of view, KM software, contact with internal and external environment, such as human, ERP software, such as other environmental factors, any one element will affect the KMS's practical utility, such as KM software, ERP software and data consistency, user habits and so on.

7. Conclusion

Knowledge management and ERP are generated to adapt to the development of enterprise management form. This paper begins with the concept, logical comparison of the similarities between ERP and KMS, in this based on the proposed Multi-Agent based ERP knowledge management system framework. In this research, the following conceptual model based on thinking from the management, software implementation, the three integrated systems perspective of the relationship between ERP and KMS to form enterprises to adapt to the combination of ERP and KMS integration of knowledge management model, which can be a powerful to promote knowledge management enterprises.

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