Research on Knowledge Innovation Framework Based on Internet of Things and Big Data

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Abstract. With the continuous development of the society, the trend of world integration has promoted the arrival of the era of big data. Since its inception, the Internet of Things has attracted extensive attention from governments, enterprises and scholars. Relevant standards organizations or research institutions try to formulate unified standards to regulate the application of the Internet of Things, but because the Internet of Things involves a wide range, there is no unified standard for the Internet of Things at present. At the same time, it optimizes the perception layer, information processing layer, network layer, application layer and other levels in the Internet of Things structural system to better enrich the theory of the Internet of Things and apply it in a broader field. Starting from the analysis of the composition of the Internet of Things, and elaborated the specific architecture of the Internet of Things and related technologies.

Keywords: Knowledge Sharing, Architecture, Innovation

1. Introduction

Since its inception, the Internet of Things has attracted extensive attention from governments, enterprises and scholars. Relevant standards organizations or research institutions try to formulate unified standards to regulate the application of the Internet of Things, but because the Internet of Things involves a wide range, there is no unified standard for the Internet of Things at present. Starting from the analysis of the composition of the Internet of Things, and elaborated the specific architecture of the Internet of Things and related technologies. The benefit ratio of IT development and the industries IT drives even reaches 1.100. IT can be seen that IT has brought profound changes to other industries, and IT industry has become the leading industry in most countries. However, due to the current IT service field is in the process of exploration and development, how to maintain and improve the core competitiveness of IT service enterprises under the network economy has not yet formed a unified strategy [1-3]. In the era of network economy, its service field has many problems worthy of attention. From a new perspective, this paper analyzes how enterprises effectively implement knowledge sharing in a larger scale through the network and proposes to improve enterprises' knowledge sharing ability by establishing IT service architecture [4-6].
2. The impact of the advent of the network economy era
The connotation of knowledge sharing refers to the process in which employees' personal knowledge (including explicit knowledge and tacit knowledge) is shared by other members of the organization through various ways of knowledge sharing (such as telephone, oral conversation and network, etc.), so as to transform individual or dispersed knowledge into the knowledge wealth of the organization. In the process of knowledge sharing, the network development team can collect useful knowledge, so as to create conditions for obtaining knowledge sharing opportunities. Network is characterized by real-time performance and knowledge is accumulated and disseminated under various characteristics of the network. Effective knowledge sharing can not only enhance the mutual connection between personnel, but also make the resources within the enterprise fully used. But at the same time, due to the virtual nature of the network itself, enterprises often face various challenges in the process of knowledge sharing. Specifically expressed in the following two aspects:

**Table 1. Barriers to knowledge innovation architecture.**

| Network security in the process of knowledge sharing | Since the network appeared in people's life, network security has been concerned by people, especially when the network as a way of knowledge sharing, network security has become increasingly important. |
|-----------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Obstacles to knowledge sharing                      | The process of knowledge sharing mainly includes the acquisition, processing and use of knowledge. However, this process is not unobstructed. The choice of knowledge sharing ways or different people's understanding of knowledge from different angles bring obstacles to the knowledge sharing of enterprises. |

Therefore, in order to cope with the new challenges faced by IT service industry in the sharing process, enterprises need to enhance their core competitiveness. IT service enterprises should strengthen communication within the enterprise and between enterprises and customers. This requires enterprises to start from two aspects: first, to establish a new IT service architecture, which is the basic requirement of knowledge sharing; Second, efficient knowledge sharing promotes enterprise innovation, which affects the breadth and depth of enterprise knowledge sharing.

3. The framework of knowledge innovation under network environment
In the open network environment, people use various network technologies to realize traditional economic activities, and the development of network technologies promotes the development and maturity of network economy. The service mode under the traditional economy can no longer adapt to this new need. Enterprises must break the traditional service mode and establish a new IT service framework if they want to achieve the network instrumentalization.
3.1. Hardware technology
The foundation of network environment, hardware technology includes necessary hardware equipment and network construction. For IT service enterprises, services are required to exempt certain technical support, hardware technology is bound to be the foundation. In the network environment, enterprises need to establish an Intranet, which has replaced the traditional management mode of enterprises. It provides convenience for enterprises to manage information knowledge and realizes knowledge sharing and information exchange based on database.

3.2. The information system
In the traditional economy, the information industry always tries various new technologies to drive the development of IT field with technology and maintain its competitive advantage with technology advantage. However, hardware technology is only a necessary condition to maintain and enhance the core competitiveness of enterprises, and information system is the bridge to connect computer hardware and specific operation of enterprises. Therefore, it is necessary to provide various information systems with powerful functions in certain hardware technologies in order to achieve effective management, so as to provide high-quality products for the market and good services for customers.

4. Innovation strategy under network environment
In the network environment, only by establishing a service framework can an enterprise effectively connect itself with the whole market and even customers to realize knowledge sharing. This new framework is a necessary condition for an enterprise to base itself on the market. However, such a framework alone is far from enough. In order to expand knowledge sharing, enterprises must fully realize the importance of innovation.

There are two sources of innovation. One is the demand of the network itself, which provides many new opportunities for service enterprises. Enterprises need to keep innovating to adapt to the rapid development of the network. A kind of knowledge can be regarded as knowledge, knowledge has become a key factor to maintain the competitiveness of enterprises. Continuous innovation depends on the generation and dissemination of new knowledge. The so-called innovation is a process in which an enterprise makes full use of the information resources and information technology it obtains under the condition of full analysis of market demand, and then goes from internal innovation of the enterprise.

Figure 1. The basic architecture of IT service under network environment.
to providing new products to the market and new services to the society.

4.1. Technology innovation

The technological innovation of enterprises is not only based on the existing technology, but also requires deep research on the new technology. The technological innovation in this paper includes hardware innovation and information technology innovation. Hardware technology is not only the basis of service, but also the basis of innovation. IT service enterprises need to constantly update their hardware to adapt to the development of the network; The development of information technology is the foundation for enterprises to accumulate and spread knowledge. For example, the establishment of information and knowledge search engine breaks through the limitation of only being able to retrieve text and expands the search scope to various multimedia resources, which is a necessary and quick way for enterprises to grasp real-time information and knowledge. Establish a document management system to classify and archive the documents sent and received in enterprises, so that enterprises can carry out effective and real-time management and establish their own knowledge management library.

4.2. Knowledge innovation

In his book Managing the Future, Drucker said: "From now on, it is knowledge that will determine. The world is moving away from the labor-intensive, resource-intensive and energy-intensive era into the knowledge-intensive era. With the emergence of knowledge economy and information society and the rise of knowledge resource status, the core elements of enterprise operation have changed, and the mode of enterprise management has also undergone a profound transformation. The creation and utilization of knowledge have become the basic activities to continue the life activities of enterprises. We believe that the Internet age is an era of knowledge sharing. Therefore, enterprises should not only know how to accumulate knowledge, learn to use knowledge, but also improve the use value of knowledge.

5. Conclusion

This paper analyzes some problems faced by knowledge-sharing service industry under network environment. The competitiveness of an enterprise depends on whether it truly USES knowledge and effectively implements knowledge sharing. This paper analyzes the obstacles and network security problems in the process of implementing knowledge sharing in enterprises from the perspective of challenging personnel in the service field under the network environment. This paper mainly discusses how enterprises should improve their knowledge sharing ability under such severe challenges, and puts forward two countermeasures: first, to establish a new service framework, which is the infrastructure for enterprises to implement knowledge sharing. The second is innovation, which emphasizes the relationship between knowledge and innovation and the role of knowledge sharing in enterprises. It puts forward that the innovation of service industry in the network environment should break through the traditional innovation and should be innovated from the aspects of technology and knowledge. Finally, a case is given to verify the proposed theory. This paper can be used as a reference for the service industry in today's network environment. In further research, this service architecture can be applied to more areas.

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