Study on Enterprise Informationization: Model Selection and Path

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Abstract

Based on the micro-level of the enterprise informatization, this paper, first of all, summarizes a variety of informatization patterns from the following two aspects: the resource of the products and the practice route. And then, it explores the general principle and the influencing factors of the enterprise's carrying out the informatization. At last, according to the enterprise's different forms, this paper offers a reference paradigm of the informatization pattern selection.

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1 Introduction

Enterprise informationization is a process that an enterprise fully excavates the business information resources to achieve the improvement of comprehensive management capabilities by wide application of information technology. Informationization provides a powerful tool for enterprises to improve management efficiency, but in reality how to implement informationization has plagued many companies, its focused problem is the choice of the information model and its program. The Deputy Director of the State Council Information Office Yang Xueshan stressed that there must be innovation models in the construction of enterprise informationization, and in the summary of the three major issues to be resolved in enterprise Informationization, he points out that: The primary issue is to layer and classify enterprises, and do not expect to use a feature, a model or a program to solve the problem.
Since the concept of informationization occurred, research on the informationized model

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has been the concern of many scholars at home and abroad. Richard • Nolan and Nolan Gibson etc. proposed model (Wang Liangyuan,2009) ; Earl established a learning curve multi-model (McDonald A and Schrattenholzer L.,2001) ; at home Lu Yaxing puts forward 4 models: the market model, the efficiency model, the relation model and the service model(Lu Yaxin,2004); Xie Kang poses business - industry interaction model, challenges - reflects interaction model, the flying geese pattern, regional interaction model etc.(Xie Kang,2000), basically all study the developing models of enterprise informationization from the macro aspects. Trying to base on the enterprise level, this paper discusses the concrete implementation models of enterprise informationization from the perspective of the implementation of informationization. Therefore, the writer believes that the informationized model refers to the implementation patterns and the management routes that enterprises apply in the course of informationized construction, including informationization goals, the informationized main implementation body, the property ownership of informationized equipment and technology, the informationization scope and emphasis etc.

2 Based on Available Sources of Informationized Products Model

Usually the main bodies that provide informationization are the following: enterprises themselves, informationization products manufacturers, informationization leasing business and ASP. The main bodies that provide informationization determine the main implementation bodies and the problem of property ownership, but also determines the investment, operating costs and success rates of enterprise informationization.

2.1 Enterprise Self-development Model

The model is the related information technology personnel within the organization who carry on independent development and implementation. The advantage is that it is tailored to fully meet the needs of their own characteristics, but this approach requires companies to have a strong team of information technology, which is difficult for most SMEs to achieve.

2.2 The Outsourcing Model

Outsourcing model refers to an enterprise completes its informationized construction through the purchase of software and services provided by the outside informationized products provider. Usually companies will choose the mature product or service with a higher recognized degree, only carry on a simple secondary development, even without any changes. The advantage is to save a lot of information construction time. But the problem is that the selection of business information products is difficult, and not exactly matches the actual needs of enterprises and other issues.

2.3 The Rental Model

Leasing model is to lease informationized equipment from a professional information service provider, property rights belong to information providers, enterprises have only pay

for rights. Advantages of this model are: reducing heavy investment pressure on companies to make some money to maintain liquidity in good condition, but also bring the enterprises the advantages of dynamically updated information technology to ensure the strong processing power of the information system, and to maintain the strong support of enterprise informationization. The leasing model of informationized products develops and innovates with the development of information technology, especially that of network technology, from the initial equipment leasing entity to the current network and data processing leasing, and to the future cloud computing, realizing a change in lease (from the physical to virtual), reduce lease costs and increase data processing efficiency. Current and future informationized leasing models are:

2.3.1 ASP (Application Service Provider) model

ASP is based on a network server to provide the "lease type" application services, customer information needs is obtained through the network server.

2.3.2 SAAS (software as a service) model

This model is passing programs to hundreds of thousands of users through the browser. For the user, it can save expenses on the server and software licensing, for the supplier, it is also just enough to maintain a program and also can reduce costs. Salesforce.com is the best known company of this kind of service so far. Google Apps and Sohu Office are also the similar services, SAAS is more commonly used in human resources management procedures and the ERP.

2.3.3 Cloud computing model

It is the development of Distributed Processing, Parallel Processing and Grid Computing. The basic principle of cloud computing is by making computing distributed on a large number of distributed computers, rather than the local computer or remote server, the running of enterprise data centers is more like the Internet. This allows companies to switch resources to needed applications, and to access to the computer and storage systems according to the demand. In future, this model will be widely used in the global small and medium enterprises.

3 Based on Information Construction Line Mode Selection

As the actual situation is very different, which the informationized implementation road is also vary with , carrying on different informationized models. According to the concerning business and focus, information model can be roughly divided into: functional model, process reengineering model.

3.1 The Functional Model

The informationized functional model refers to it covers one or several departments or business areas. For example, the auxiliary softwares that enterprises firstly applied MIS, OA, and CAD, CAM, CAE, CAPP etc.for a particular field, applied to financial, warehouse management systems of financial and warehouse management, even including those

involving business forward, sale, storage logistics software or supply chain systems. This model is characterized by informationization carrying on sporadic selection and implementation under a single business or function demand. The obvious drawback is that the information is likely to cause isolated phenomenon, although some informationized products in later period improve their integration with awareness in the design and function, but because of its R & D starting point is to satisfy one or more business needs, it is essentially decided its isolated effects.

3.2 The Process Reengineering Model

It refers to implementing comprehensive information accoring to the overall layout for the enterprise,, which focuses on the informationization of enterprise decision-making level, it needs to fully integrate and optimize enterprise management system, operating model, and processes, the entire informationized process is required to lead by the highest decision-making, the form are ERP, SCM and so on. This is also the advanced stage of informationization development. The model is with huge work, higher degree of risk, but successful implementation will greatly enhance their core competitiveness. Such as the implementation of ERP system, which involves the integration and optimization of financial, marketing, purchasing, production, inventory management, human resources ect., if successfully implemented, which will bring great benefits to enterprise operations management, data analysis, management decision-making, but the risk of implementation is high.

4 Influencing Factors of Informationized Model Selection and Matching Paradigm

Enterprise informationized model selecting refers to the choice on the informationization policy decision, namely, in the course of development, enterprise timely choose the suitable informationized model according to themselves and the changes of outside environment.

4.1 Influencing Factors

4.1.1Corporate Strategic Goals

In the selection of informationized model, enterprise not only need to consider the financial, personnel, technology and other constraints, more important is to determine a reasonable informationized goal to make it highly consistent with the corporate strategic objectives, and then determine the specific implementation methods and paths, all the management methods and tools serve for realizing the enterprise's strategic objectives

4.1.2 Organization structure and characteristics of the operating process

Business sectors, organizational structure, sectored distribution, centralization degree, continuity and dispersion of the work flow will directly affect the informationized selection and implementation modalities. Such as business enterprise can choose business forward, sale, storage management system or e-commerce platform, and manufacturing enterprises to buy CAD, CAP, MRPII, ERP and other products.

4.1.3 Employees maturity

The employees maturity here mainly refers to staff identity on informationization and information technology proficiency and related knowledge level of employees and psychological maturity. Employees' acceptance of informationization and application capabilities, will directly affect the application effects of information system.

4.1.4 The extent of regulation on enterprise infrastructure management

The implementation of informationization requires enterprises to have a good management of the environment, especially the enterprises with a high level of implementation, must be supported by standardized management system, scientific management methods, and good operation processes. If the basic management of the enterprise is not sufficiently standardized, the direct implementation process of reengineering model, will bring a higher risk to the enterprise.

4.1.5 History and infrastructure of informationization construction

The past success, efficiency and infrastructure of informationization construction and application play a vital role in the promotion of the follow-up information of the company, it is directly related to the decision-making attitude of the leadership and staff support strength.

4.2 Matching Paradigm

1) To those enterprises which do not implement informationization, it can be decided on the complexity of organizational structure: If the organizational structure is relatively simple, to use the functional informationized model, first implement informationized systems at the local departments, which can in turn implement the OA, finance, inventory and other functional areas of informationization construction; if the organizational structure is more complex, with higher standardized levels of management, process reengineering model should be adopted, firstly to develop a scientific informationized strategy, carrying out a rational layout of implementation strategy from the decision-making level to the operational level.

2)To those enterprises which have already implemented funtional informationization models, it can be decided on the implementation degree of informationization and standardized levels of management: If the implementation degree of informationization is high, process reengineering model should be adopted, integrating the original functional information system of the enterprise , uniform data coding, enhance information security, improve the ability of using informationization to help decision-making; if the degree of implementation and the regulation extent of management is still quite low, we must first reinforce the basic management of enterprises, strengthen the full use of the original implementation fuction module, followed by a horizontal level expansion on the functional level, to expand the coverage of functional informationization,and should pay attention to the material code, uniformity of the process number, laying a solid foundation for the process reengineering model.

3)To those enterprises which have already implemented process reengineering, on the one hand, it can expand to the outside supply chains horizontally, such as suppliers, customers, competitors, virtual enterprise, business alliances and other areas of informationization

construction, implementing e-commerce, Enterprise E-portal, customer relationship management and other e-commerce model. On the other hand, it can enhance the vertical depth of construction and application, through the survey of current informationized enterprises which shows that the role of a significant number of enterprises informationi zation tools still remain in the low-level application of the statistics, computing, standardized job management, the informationized function is to be strengthened for business analysis and management decision-making.

4) To those enterprises which have good business informationization basis, if with a strong enterprise informationization team and abundant capital, self-development model can be used; if the enterprise informationization professionals are common, but with plenty capital, information products can be purchased; If the enterprise is short of funds, and the informationization team is not mature enough, informationization leasing or ASP model can be used.

5 Conclusion

Author investigated from the micro level of enterprise informationization. According to the connotation of information-based enterprises, this paper, from the perspective of implementation, analyzes the models about the application target of informationization, providing the sources and the construction lines etc., and puts forward the general principles of model choice, influencing factors and matching paradigm. With the development of information technology, information-based models will continue the pattern of adjustment.

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