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Research on Risk Management of Flexibility Information Systems

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Abstract

This paper applies a document reading method and deductive-inductive method, studies idea of flexibility MIS, and Risk Management of Flexibility Information Systems on its development and operating environment, discusses an effect on information system risk administration brought by flexibility MIS idea, suggests that the information system risk management framework and implementing strategy by flexibility idea.

Key words: Flexibility MIS; Information system; Risk management; Change management

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INTRODUCTION

The global economic integration, the unceasing expansion of the market scale, the fierce competition of the market, raw material and the energy, and continual change of the enterprise's external environment cause the enterprise to be frequently in the condition of dynamic service

reorganization and service flow restoration. Yet this may cause the management information system which is entrusted with heavy responsibility by the enterprise carry on essential, prompt transformation promotion and second development. The term of "The flexibility" is precisely used to express the system's ability of dealing with the environmental variation effectively or uncertainty caused by the environment^[1]. Flexible MIS can effectively carry on the adjustment and the revision promptly according to the users' new request to the system and function in the system application process, in order to adapt the users' newly request^[2].

As for the flexible MIS research, domestic and abroad experts mainly have done certain research to flexible theories about flexible software development, which mainly focuses on the development of the flexible information system, but also it is still short of fruitful research results to the problems about how the idea of flexibility affects the risk management, safe operation management and so on of the information system, after it's introduced into MIS.

From the following two cases of the banking industry information system risk, you can immediately find out the demand to the flexible information management system at present.

Case 1: On August 15, 2007, Chinese Industry and commerce Bank carried on the promotion to the computer system, but because of it's not avoiding the service peak, it caused the individual operational channel movement impeded, the service handling speed slowed and some agency securities service blocked. The system returned to normal gradually after five and a half hours^[5].

Case 2: In May, 2008, Japanese Mitsubishi Tokyo united bank once announced, the ATM cooperated between this bank and the supermarket broke down because of using the new system, and the cash was unable to withdrawn on the same day. According to the statistics, there were altogether 16500 transactions unable to be

carried on in two hours^[6].

From those two above-mentioned cases, we should think deeply: How does the idea of flexibility affect the risk management of MIS system while considering how MIS can adapt the change of external environment better? How can we carry on the risk management to flexible MIS better to guarantee the enterprise MIS system work safely and effectively, and satisfy the enterprise dynamic service reorganization and the service flow restoration. In view of this need, this article has carried on the preliminary discussion to the flexible MIS risk management, analyzed the influence which the idea of flexibility brought to the information system risk management, and proposed the frame and the implementation strategy of the information system's risk management under the idea of flexibility.

1. FLEXIBLE MIS BASIC CONNOTATION

1.1 Flexibility and Flexible MIS

Rou Xing, Flexibility in English, its explanation in "21st century Greatly English to Chinese Dictionary" is: elasticity; compatibility; flexibility, it has many meanings of flexibility, winding, compatibility, flexibleness, and so on.

The early research of "the flexibility" originated from the machine manufacturing industry, like flexible manufacture system (FMS). The flexible manufacture system (Flexible Manufacturing System) was later gradually developed in the late 1960s. It's based on digital controlled engine bed processing center controlled by the computer, and it can adapt the automated manufacture system of multi-variety small batch production. One of its major characteristics is that it still has high compatibility without reducing the production efficiency. From the 1990s, this idea starts to appear in the domain of the computer software development.

Scholar Mandelbaum thought that the flexibility refers to the effective ability^[1] which the system responses to the environmental variation. This definition has explained the flexibility's basic characteristics: (1)The flexibility is a kind of abilities dealing with external environment variation and organization's internal variation; (2) The flexibility is the system's ability of processing environmental variation and (or) the uncertainty caused by the environment; (3)The flexibility is the system's ability^[7] effectively processing environmental variation and (or) the uncertainty caused by the environment.

Flexible MIS, refers to the management information system^[2] which, within limits, can satisfy the enterprise to adapt external environmental variation's demand in the process of information system's programming, developing and working.

1.2 The Characteristics of Flexible MIS^[10]

The substantive characteristics of flexible MIS are to adequate the variation, namely, meet and satisfy the need

of the enterprise's unceasing change in certain scope. This adaptation includes the adaptations of report form, service flow, data construction and business management pattern.

1) The adaptation of report form

It's flexible MIS system's basic adaptation function and essential feature to adapt the report form.

2) he adaptation of service flow

The enterprise service flow's reorganization and the organization management's transforms can always be met in different stages of the MIS system's programming, developing and working, and the MIS system will inevitably have certain differences with organization's demand in each different stage. Therefore flexible MIS must have strong adaptive ability to the service flow.

3) The adaptation of data construction

Data construction is the core of the enterprise information system's data base, it's also the basic frame to maintain the information system's operation structure. It can guarantee the relative stabilization of the data construction through fine design of data construction and data connection technology, thus it can guarantee its adaptation to the data construction.

4) The adaptation of management pattern

Management pattern is the generic term of a group of bound to the enterprise service process and management policy decision; it's the business management system as well. We can think like this: the management pattern = service flow + supervisory instruction ten authority types and ranks. Different enterprise's management pattern is the combination of these three factors. Determine the core system and the restrain objects through the decomposition of the management pattern, and realize the communication between the core system and restraining objects through interface. This way of design greatly simplified the system's complexity, strengthened the system's maintainability, reduced system's degree of difficulty to achieve, therefore make it have the adaptation of management pattern.

2. RISK MANAGEMENT OF FLEXIBLE MIS

The idea of flexible MIS is to combine the continuous and new demands from the organization to the information system, the MIS' re-development and follow-up promotion with the MIS' movements and maintenance. However, what kind of change union can this combination bring to MIS' safety controlling and risk management?

Risk management of the information system under the idea of flexible MIS should be mainly concentrated on the following several aspects^[4]:

1) The risk aroused by the uncertainty of "the information need"

Many reasons can cause the enterprise to have the uncertainty and the variability to external and internal

information need in terms of scope, time and content, etc. For instance, the enterprise's external environmental change, the principle and goal change of the enterprise's strategy, the enterprise's internal management and organization's transformation, the enterprise personnel and the quality change and so on.

2) The risk aroused by the uncertainty of "the function demand"

The function demand of the enterprise's information system refers to each function application serving the enterprise through the information process. The enterprise information system supports the enterprise's activity from 4 aspects (the strategic level, the management level, the knowledge level and the work level), the transformation and innovation of the enterprise's environment and internal management can cause the work's fluctuation, change of business activity and the process organization, and change of the policy-making scope and method.

3) The risk aroused by the uncertainty of "information technology development"

Information technology is the enabler of innovation management, the relationship between information system and the enterprise is closer and closer, the enterprise possibly asks the enterprise information system to upgrade its software and hardware platform and asks the enterprise network structure to change and extend at any time.

4) The risk aroused by the uncertainty of "personnel quality"

Regardless of the end-user of the enterprise information system or professional staff, their qualities are various, and they also have certain fluidity, but the man-machine system is a principal character of the enterprise information system, the variation of the personnel quality has a great impact on its operational efficiency and function's realization.

5) The risk aroused by the uncertainty of MIS system change

The MIS system's alteration lies in the demand analysis, the system plan, the re-development and upgrading of the system's partial functional module, the switchover of the system's functional module and so on. Each link is filled with uncertain factor. So it can reduce risk of the MIS system better to enhance the management of the flexible MIS's alteration.

3. STRATEGY OF FLEXIBLE MIS RISK MANAGEMENT

Enterprise of the revolution requests its service process to have good flexibility, so as to adjust its service process with the change of the environment. In the meanwhile, MIS system which the modern enterprise needs to apply is also requested to have strong flexibility, in order to meet what the enterprise need in its service flow reorganization and strategy transform.

It enabled the organization to utilize the MIS system better, strengthen the consistency between MIS system

and the organization's demand, and the coordination between MIS system and the external environment change, after leading the idea of flexible in MIS system. Simultaneously it also increased difficulty and working pressure of MIS system's safety movement management and risk management.

Flexible MIS's construction is as important as risk management of flexible MIS, although in some ways they're consistent. The enterprise must complete the following several points well after completing MIS system's risk management.

1) Corporate heads' value and participation

Risk management of the flexible MIS system is already harmonized with the enterprise's comprehensive risk management. The enterprise's all levels of leaders, especially CEO and CIO, senior administrative of the information system department, should put a new premium on risk management of the flexible MIS system, and attach great importance to it and support it not only from the thought, the organization but also the management.

2) Establish perfect quality controlling system, operate, support and change the whole process from MIS system's project approval, requirement analysis, planning programming to the system implementation through institution and standardization.

3) Enhance the outsourcing management of flexible MIS system

The exploitation of enterprise's MIS system is mostly commissioned to the professional MIS developer through outsourcing form. It's very important to reduce the flexible MIS risk management for the enterprise's dynamic service reorganization and service flow restoration to transmit for the warp zone and communicate with them effectively.

4) Construct and implement the frame system of the flexible MIS risk management

It needs a spirit of innovation to construct and implement the frame system of the flexible MIS risk management, especially standing on the shoulders of giants. At present, domestic and abroad has emerged lots of outstanding information technology risk management frame (COSO, AS/NZS 4360, M_O_R, CobiT, ITIL, ISO 27000, Prince2, CMMI and so on), which covered all aspects of the information system risk management. However, it's extremely difficult to carry out the risk management frame comprehensively because of its complexity. Therefore, we should analyze these frames' respective characteristics and strong points and carry on the reduction to them according to the enterprise's actual situation, then form a frame system of flexible MIS system risk management which is really effective and can adapt to the enterprise's developing need.

5) Enhance the alteration management of flexible MIS system

We should pay attention to surrounding the whole lifecycle of encompassment flexible MIS while

strengthening the alteration management of flexible MIS system. The professional flexible MIS system alteration committee should be established to enhance the alteration management of flexible MIS system strictly in each stage of the MIS demand analysis, the plan design, the code, the implementation cuts as well as the movement and maintenance and so on, in order to make the enterprise adapt the external environment change and carry on the service reorganization and the service flow restoration initiatives. So it can reduce the flexible MIS change risk to the lowest level in each link of MIS system's promotion transformation to implement the change management flow strictly.

The future IT system will face the organization's system, so it needs to have the ability to adapt the alteration at any time, simultaneously it needs to strengthen the internal management, and so on risk management, customer management, property management. Only if it does like this, it can face open competition.

CONCLUSION

The research of flexible MIS system is still in the infant stage, lots of fundamental successor tasks need to be researched, like analyzing the uncertainty of the environment MIS's locating, exploring the MIS flexible formation mechanism, the method and way^[9] of enhancing MIS flexible, especially the research of strengthening the flexible MIS risk management intrinsic mechanism and rule. It can provide the enterprise powerful informatizational tool in the intense exterior competition to strengthen MIS's alteration management, enhance MIS's flexibility of the enterprise really, and make the enterprise's MIS system closer match with the dynamic service reorganization and service flow restoration of the organization implement.

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