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RISK MANAGEMENT FOR AN ERP PROJECT

Abstract. *Risk management is the key step to ensure the successful implementation of ERP project. This paper mainly introduces the risk that the project may face, and the risk management steps that should be taken in the face of the risk. Next, the key steps of risk management are risk identification, risk assessment and risk control. Then combine the relevant theory with the implementation of the case for analysis.*

Keywords: innovation; ERP project; risk management; risk assessment; risk control

Introduction

After learning about the ERP project of CATA4, an issue triggered my thinking. When facing the risks and uncertainties of projects, how should enterprises cope with them to ensure a successful running of the ERP project? Before dealing with this problem, first of all, we should understand the causes and significance of the problem. The motivation for the implementation of ERP projects is to improve the potential of the company's competitiveness. Enterprises will get tremendous benefits provided from the ERP system.They use these systems to replace the company's original independent legacy system which is inefficient, in order to increase the communication among business functions, to improve processing efficiency and customer relationship.It will also improve the overall decision-making, which is the main purpose of case enterprise CATA4's ERP project. However, the implementation process of the ERP project is quite complex, and researchers point out that there is a difference between ERP projects and normal software projects. An ERP project involves several sections of the business system, so increasing the organizational problem.These leads to its low rate of success . According to the Standish Group International, the projects using SAP R 90% / ERP 3 often run late. A study of 7400 IT projects shows that 34% projects were late or over budget, 31% of the projects were abandoned, zoom or modification, only 24% of the project was on time and on budget[2].

Therefore, it is difficult for enterprises to successfully implement a ERP project. The reason for the failure of such a ERP project's is often that leaders can not correctly assess the risks in the project. Most managers think that a risk management process is an extra work and cost. So, if the project progress delay, the risk management process will probably be eliminated. During the process of running ERP project, risks almost occur in the whole process.Therefore, attaching importance to risk management is of great significance, it even affects whether the project can be successfully completed. To solve this problem, we can divide the problem into two parts. The first is what risks the project will face, and the second is what kind of risk management process is suitable to deal with the corresponding risks. To better understand and deal with this problem, I need to comprehend 3 important concepts: risk management, risk assessment and ERP. First , risk management is a process to balance the risk between revenue and cost ,and decide what measures to take to solve problems. While risk assessment which is the most important component of risk management is to define the project's individual risk by considering all the uncertainties and risk factors of the project fully, systematically and orderly. Then, we comprehensively evaluate the project risk and establish the risk system model, so as to find the key risk of the project and determine the overall risk level of the project. The implementation of ERP project's work process based on the above mentioned.ERP is the system of management thinking,to provide a management platform of decision-making for the decision-makers and employees.It also integrates all enterprise resources for integrated management. In a simple way, it is a management information system that integrates the three major streamsт – logistics, capital flow,information flow of the enterprise into a comprehensive and integrated management system.Only understand the basic principles of the above concepts, can i start to study how to deal with questions.

Unit concepts

Through the analysis of CATA4 case and the introduction, we can summarize that risk is potential, and it has uncertainty, but it affects the whole project. Therefore, for a company that needs to change the status quo, "how to improve the success rate of an ERP project and how to deal with the risk" is the main problem that need to be considered at present. In recent years, the international theorists and academia have also produced abundant research and discussion on this issue. In the

beginning of the twenty-first Century, scholars pointed out the risk of harm in the article.A simple "risk" is defined as a problem has not yet happened, but if the risk really happens, it may cause some loss that will threat the success of the project (Sumner, 2000). A study on the implementation of ERP is proposed that some possible key barriers to ERP projects in the field and a wide range of organizations, human and political problems inherent in the project make the ERP complex and lack of skills. After verification of the project management and risk management method (RM) is one of the key risk factors (Aloini, D., 2012).This points out the necessity of finding risk and managing risk in the process of project implementation. First, when dealing with the risk management of any ERP project, we need to build a basic framework of project risk management. Related papers mentioned several main framework structure – PRINCE2 guide and the Australia Standard (Commission, C. O. S. O. O., 2004). U.S. Department of Commerce (2011) proposed in the published article,which mentioned that a framework's first step is to mandate and commitment.Under this premise, they can start to design risk management framework, implement risk management, monitor/inspect framework and continuous improve framework, and maintain the four step cycle operation.

In the risk management of the whole ERP project, the implementation of the risk management process is the main work after the construction of the basic framework. Therefore, many scholars have done a lot of research on how to carry out risk management process. It is pointed out that risk assessment is the core step in risk management process (Aloini, D., 2007).And it mainly includes the steps of risk identification and the risk quantification. In recent years, there also have been the research scope of the risk management system on the basis of previous studies, it is believed that the risk management system includes risk identification, risk assessment and risk control of the three different areas of management, these areas also have complex interrelationships (Fakhar, M., Z., Abbas, M., 2013). Risk identification is to identify the actual risks that may affect the quality, plan, or cost of the project. Risk can be determined by expert observation, scenario analysis, and risk tree analysis. Risk assessment includes identifying risk levels that may affect the success of the system. Risk control involves taking measures to avoid or eliminate the risks that have been identified and evaluated. The project manager is mainly responsible for the control steps to reduce the risk impact of the project. This is the main content of most of the risk management process, but in the same year, another scholar put forward a more complete risk management of ERP projectin the article, including evaluate the impact of risk management extra (Yajun Zeng, 2013).

The nature of the risk of a ERP project depends on the risk factors and the strategic needs of the project, innovation, and repeated failures. In recent years, many risk management processes have been developed by scholars to solve the risk management more effectively,although these processes are usually too general for the application of ERP projects. These models, including the Australia Standard method and the risk diagnosis method, are typical iterative methods for risk management problems. As shown in Figure 1, the model of risk management process summarized by Aloin.D (Aloini. D, 2007) includes situational analysis, identification,analysis, risk assessment, supervision and review, communication and consultation. Compared this model with the risk management process model put forward by Yajun,it can be found that their framework is roughly the same, the Aloini.D model adds the scenario analysis stage to the process to identify the risk more accurately, but it is not strong enough to evaluate the effectiveness of the management.Then analyze the risk management mode diagram of Linda's design (Westfall & Linda, 2005) from figure 2, which is a systematic model of risk management process based on ERP software operation.This model begins with risk identification and risk priority, and then develops a risk containment plan to reduce the impact of risk and the possibility of its occurrence.The containment plan also includes the emergency measures to be taken if the risk shift is subject to the problem, as well as the indicators that show the problem of the risk shift. Action is taken to deal with risk issues in the implementation of the containment plan. In her model, more attention was paid to the decision of risk priority. From the risk management process model proposed by different scholars, we can find the general framework of scholars is consistent, but everyone's emphasis and function partition are slightly different. This is related to different projects that are applied to the model. Therefore, in order to deal with risk problems better, we need to closely relate and inspect related projects, and choose the right risk management plan to avoid risks.The containment plan also includes the emergency measures that should be taken if the risk shifts to the problem, as well as the indicators that show the risk shift. Action is taken to deal with risks in the implementation of the containment plan. In her model, more attention was paid to the decision of risk priority. From the risk management process model which proposed by different scholars, it can be found that the general framework of scholars is consistent, but everyone's priorities and functions are slightly different. This is related to different projects that are applied to the model. Therefore, to deal with risk problems better, it is necessary to closely relate and inspect related projects, choosing the appropriate risk management scheme is the key to effectively avoid the risk.
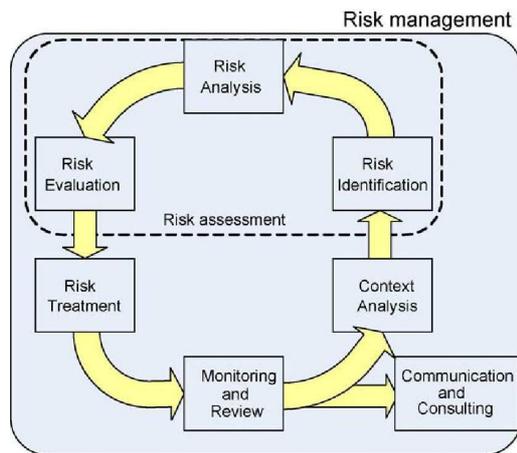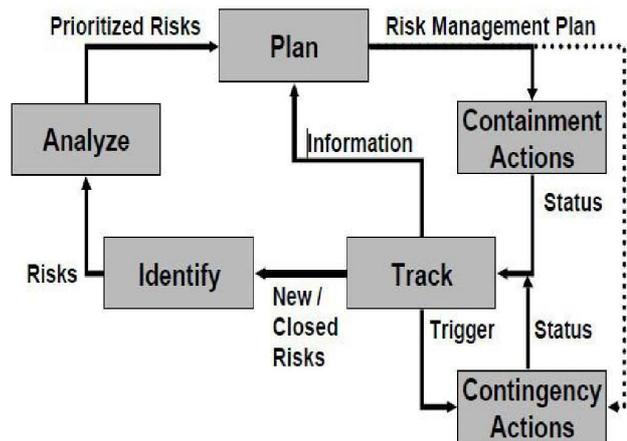
Figure 1 – Aloin.D's model [5]

Figure 2 – Linda's model [11]

Insights and ideas

Through the analysis of the first two parts, it can be concluded that a process of ERP risk management contains three stages: risk identification, risk assessment and risk control. These stages are in the process of the programme branded as Contrast Business 21, and are important tools for Chris Miller to deal with the risks that companies may encounter. At the beginning of a risk management, he found the right way to identify risk by a variety of methods such as brainstorming, which is the first stage of the process.Then after the discussion,Chris and his team listed the relevant risk management plan,

and the possible risk areas are divided into seven categories: Business Imperative, Programme Structure, Technology, People, Programme management, Vendor/Contractor Management, General. As mentioned above, the second stage – risk assessment is the core step of the risk management process, and it is also the basis of the risk aversion. Therefore, for better risk management, Chris made a questionnaire of risk assessment for collecting information from other people in the whole program group and plan group to implement risk assessment. Subsequently, he took risk assessment as the center to design several main stages of risk management process. This article collated these main phases as a model, as shown in Figure 3.
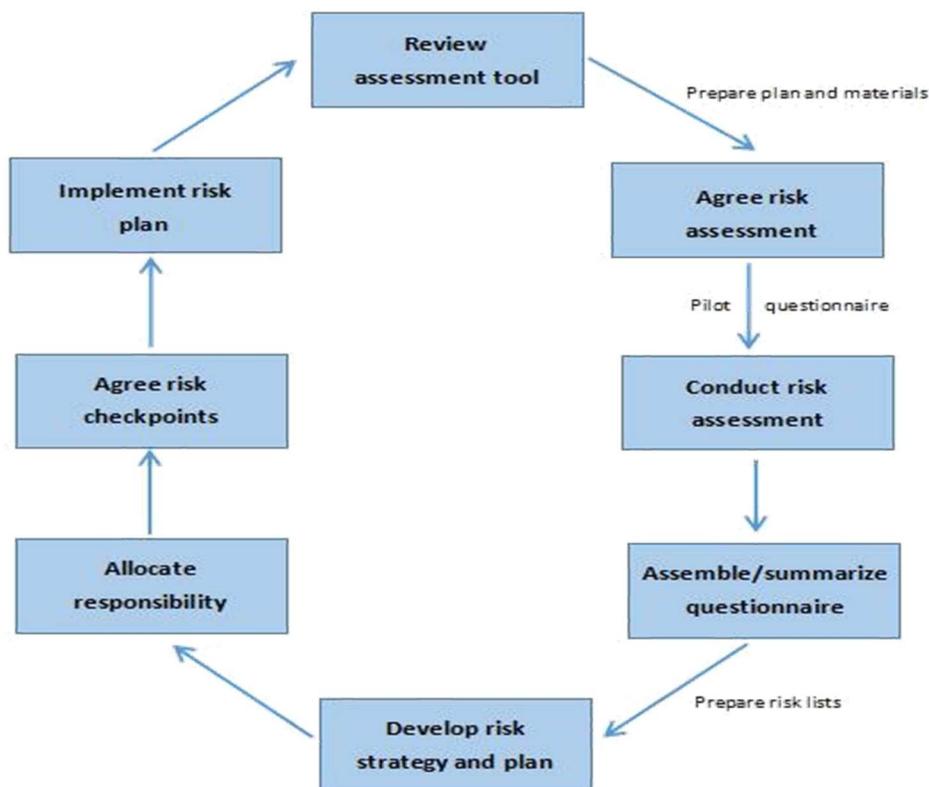

Figure 3 – Chris's model

In this process, first it needs to review and improve the tools and methods of standard assessment, then confirm the risk assessment team and confirm the acceptance of the questionnaire. Then beginning to implement the risk assessment in which the risk assessment will be based on three different stakeholders. After focusing on the feedback from the questionnaire survey, the group needs to develop risk strategies and plans based on these data. The next step is to assign responsibilities to the relevant staff. At the same time, it is necessary to keep monitoring and keep the plan and process to be carried out at any time while the risk plan is implemented.

Generally speaking, the risk management plan designed by Chris is relatively complete, but by comparing with other scholars' research results, some differences can be found and their shortcomings can be summarized. Among the several ERP risk management models mentioned before, the risk management system proposed by Linda is relatively better, because it has strong practicability and applicability in ERP projects. Compared with Chris, it focuses on all aspects of risk and management, but there are some difficulties to solve in this model. This model is hard to achieve in real-time software development environment, and it is a time-consuming task. At the same time, in the initial stage of the process of risk management, sumner set the definition of risk, the main list of six risk categories: a. histocompatibility, refers to the business process redesign; b. combination of skills, training and retraining is insufficient; c. management structure and strategy, namely the lack of top management support; d. design the lack of software system integration; e. user participation and training, namely the existence of effective communication; f. technology planning, mainly refers to the technical bottleneck can not be avoided. Comparing this part with several areas divided by Chris, it is found that the two scholars have roughly the same division of risk areas, considering that in the ERP project, the risk exists in all aspects of the project.

Then according to figure 2 to analyze the risk management model from the design of Linda. In her definition of risk, after the first stage of risk identification officially entered the process of risk management.Risk identification is the first step of the process of risk management. This step is the output of a list of project specific risks, and the results may affect the success of the project. Linda puts forward various technologies to identify risks, including interviewing, voluntary reporting, decomposition, assumption analysis, critical path analysis, risk taxonomies. In this part, Chris simply put forward with the method of brainstorming to identify risks, even if this solution in the implementation of the follow-up project appears no leaks, it is not perfect enough. Risk occurs in all parts of the ERP project, and only a complete method can be used to identify the risk

problems.Then the risk management process enters a more important step: risk assessment. Linda advocates the risk exposure (RE) equation, to compare the exposure degree of various risks. The results help identify risks that may cause maximum or negative impact on projects or products, and help identify which risks are candidates for further action. According to the results of her risk analysis, the list of risks will be given priority. As resource constraints rarely consider all risks, the priority listed risks are used to determine the risk of additional planning and action. Other risks are recorded and tracked for future consideration. Compared with the evaluation scheme and Chris implementation of the risk assessment in the project, there are similarities in results.While in the process, Chris adopted the questionnaire survey way to determine the need to assess the project scope, including team skills, Likelihood and impact, and finally according to the statistical results also listed risks to determine the list of indicators and sources of the need to address the problem, and gives corresponding solutions. In the last stage of risk control, in order to solve the risks, Chris listed the relevant measures that can be taken, as well as the responsible personnel and the corresponding completion schedule. He also listed the risk of the trigger points out when it is necessary to carry out emergency option to consist part of the work. Finally it needs to define each trigger point who need to participate in decision-making, and then summed up the corresponding contingency plan. In this part, Linda has a similar scheme in the study, and it can be summed up from her process that each risk of a contingency plan should have a trigger. Triggering can be the time or event of the future, which is the earliest indication that the risk will eventually become a problem, thus it can contribute to the implementation of the contingency plan.

In the risk management process of Chris, most of the processes are completed. The success of the final ERP project also confirms this result. However, with the upgrading of technology, the new technology will replace the existing technology. The risk assessment in the future is likely to be fully automated and intelligent.To achieve higher efficiency, the questionnaire survey may withdraw from the stage of history to achieve higher efficiency.

Key learning points and actions

Through the process of completing the reflective practice paper, I have a certain understanding of how to solve the problems that I put forward. First, the reason for choosing this issue is that it is important to take into account that risk can affect the success of the whole project. Next, this problem can be simplified as how to implement a risk management for a ERP project. Case analysis and research from many scholars help me understand the meaning of risk management process and obtain the key of the harvest:In a ERP project, risks exist

in all aspects of the project. If we want to effectively curb risks, we need to start from the definition of risk categories, then consider comprehensively and develop a risk management process suitable for this project. A more complete risk management process mainly includes three stages: risk identification, risk assessment and risk control. The case records a clear process of risk identification and risk assessment, such as questionnaire. The risk control stage has not been systematically expounded, but the steps and measures of the contingency plan included in the risk control are still listed.

From the learning of areas that were not well understood, I found that getting new knowledge and skills helps to better analyze problems. For example, when we think about how to solve risk problems, we get knowledge about risk management models from the analysis of cases and scholars. I have understood the main stages and operation principles, and help me understand problems better . At the same time, this experience reminds me that in the past undergraduate course, I had taken ERP related courses. As a student of computer science, I needed to spend more time in understanding business part. After this study, I have a further understanding of the puzzled problems in the past, such as how a project is carried out. But there are still some parts that have not been understand well. For example, in the stage of risk assessment, matrix analysis and RAM analysis are very difficult to apply when evaluating risks. In order to understand these skills,

I need to read more related books and papers, associating theory with practice.

Critical reflections

Compared to the normal course learning, the case study is more complex and the evaluation takes different ways. The learning process is mainly in the form of a group, but it is not supervised by teachers. This has developed my self – regulation and independent skills. When a team member conducts a joint study, it requires planning and evaluation of the learning cases and providing feedback to each other. At the same time, at each checkpoint in the process of the study, the examination is accepted. If i do not perform well,this may affect other people's achievements. So i must develop collaborative skills to collaborate with group members to study successfully. Some of my shortcomings are also exposed in this process. For example, when analyzing cases, i spent a lot of time reading due to lack of experience, and fail to find the key points, resulting in the analysis of problems is not accurate enough. But in the process of seminar, because knowing that I haven't learn such courses, my team members often bother to help me, and encourage me to do case study and research, so that their kindness gives me confidence in further research. Therefore, in the future study, I need to combine the learning experience to grasp the l idea of the case, and allocate the time of each part carefully to better accomplish each learning task.

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УПРАВЛІННЯ РИЗИКАМИ ДЛЯ ПРОЕКТУ ERP

Анотація. *Управління ризиками – це ключовий крок для забезпечення успішної реалізації проекту ERP. Представлена стаття перевризижно представляє ризики, з якими може зіткнутися проект, а також кроки щодо управління ризиками, які слід вживати з точки зору ризиків. Основними етапами управління ризиками є ідентифікація ризиків, оцінювання ризиків та контроль ризиків. Надалі відповідна теорія поєднується із практичним застосуванням для аналізу.*

Ключові слова: *інновації; проект ERP; управління ризиками; оцінка ризику; контроль ризику*
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