

Understanding the Nature of Project Escalation: An Exploratory Study from an IS Risk Perspective

Completed Research Paper

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ABSTRACT

Information Systems project failure has retained its preeminent position as one of the most important research streams in the past decades. Many studies attempt to understand what causes project failure as it is known as the first and most important step to effectively manage projects and avoid project failure. One of the most important reasons causing failure cited in IS literature and trade reports is project escalation. The phenomenon of project escalation has generally been examined from traditional perspectives and little is known about the phenomenon from an IS risk viewpoint. A qualitative case study of an IS project in Thailand is then used to illustrate the nature of project escalation and explain the relationships between project escalation and IS risks. The results of this study extend the existing body of knowledge of project escalation and describe the dynamic nature of project escalation from a nontraditional point of view.

Keywords

Information system risks, escalation of commitment, information system development, project management, holistic research.

INTRODUCTION

Information Systems project failure has retained its preeminent position as one of the most important IS research issues in the past decades. And one of the major reasons behind project failure found in the literature and trade reports is escalation of commitment in IS projects (The Standish Group International, 2001; Drummond, 2005; Parinyavuttichai, 2011; Pan, Pan, and Newman, 2009). Commitment is an important ingredient for the success in project development (Drummond, 1998; Drummond, 2005). However, organisations are often trapped into the situations where a continuation of commitment on a failing course of action is inevitable (Drummond, 2005; Parinyavuttichai, 2011). These situations are known as escalation situations (Pan et al., 2009; Keil, Bernard, Wei, Saainen, Tuunainen and Wassenaar, 2000). Knowing the appropriate level of commitment to the project development is therefore important as it enables project teams to mitigate subsequent project complexities and risks due to escalation of commitment (Keil, 1995).

In order to effectively manage IS projects and avoid project escalation, it is suggested that one should have a good understanding of the escalation concept. Many researchers try to explore and describe project escalation using escalation theories (Keil, Li, Mathiassen, and Zheng, 2006; Parinyavuttichai, 2011). However, it can be argued that project escalation can also be examined and understood from an IS risk perspective. This is because mismanagement of IS risks can contribute to the emergence of project escalation and project escalation itself can generate IS risks (Parinyavuttichai, 2011). This relationship could create a vicious circle in ISD which has not been fully explained in the current research. Hence, it is important that this research systematically investigate the nature of project escalation from a risk perspective. The following section reviews the background of project escalation and explain IS risks and how they might be related. The paper then describes the research strategy of the study and presents the findings of a case study. The penultimate section is a discussion of the findings and the paper concludes with implications for practice and research, and the limitation of the study.

THEORETICAL BACKGROUND

The theory of escalation suggests that the emergence of project escalation can be due to four key reasons: project, psychological, social and organisational reasons (Montealegre and Keil, 2000; Brooks and Eke, 2010; Parinyavuttichai, 2011).

Based on the project point of view, an escalation situation arises when an individual pursues his/her commitment to the same course of action due to objective values, i.e., financial and non-financial return. For instance, project teams may continue allocating project resources when they view that the outcome of project is for the organisation's long-term benefits (Keil, 1995; Drummond, 2005). In addition, they tend to allocate more resources to complete the project when the project term perceives that the project gets closer to its goal (Keil et al., 2000). However, by allocating additional

project resources and efforts to the current course of action, the project team may be trapped into the situation where they run out of project resources and/or there is no further support from the top management, subsequently creating more project risks (Drummond, 1998).

From the psychological viewpoint, escalation situations emerge because of emotional influence on individuals who are involved in the decision making processes during the project development (Staw and Ross, 1987). For instance, an individual may intend to digest only the information from the aspect that fits his or her view. Particularly in IS projects, project team may hide negative information about the project development from the users so that the team feels more confident in their project development performance (Snow and Keil, 2002). However, this may create the situations where users are unaware of the true status of the project development and therefore do not intervene to avoid system development related risks (Snow and Keil, 2002; Brooks and Eke, 2010).

From the social perspective, it can be argued that escalation situations occur because individuals try to make themselves look good to the public (Staw and Ross, 1987). For instance, individuals are inclined to commit more resources and stay on a failing course of action because they are not willing to accept their previous mistakes or reveal their mistakes to others (Drummond, 1998; Montealegre and Keil, 2000).

Finally, from the organisational point of view, escalation situations may arise because of organisational and management reasons. For instance, Keil (1995) finds that a presence of a strong project advocate is one of the keys that induce escalation of commitment because the strong advocate has a strong determination to pursue project development even if there is no clear signal of project success. In addition, Parinyavuttichai (2011) noticed that some IS project managers threw good money after bad because the roles and responsibility of the project managers were not clearly defined by the project executive in the first place.

Based on the review of the emergence of escalation situations described above, one can also argue that project escalation is somehow related to IS risks. In particular, mismanagement of IS risks can lead to project escalation whereas escalation of commitment is the underlying reason that contributes to the emergence of subsequent project complexities and risks. This is because an individual or group of individuals are inclined to allocate more commitment to resolve the complicated situations identified in a project. However, by committing more resources and efforts to the on-going project, an individual or group of individuals may fall into a riskier situation where sometimes requires even more resources and development time for the project (Drummond, 1996; Keil et al., 2000). However, little research has attempted to systematically describe the relationship between escalation situations and IS risks. Table 1 summarises Parinyavuttichai's (2011) list of potential IS risk types that may be interconnected with escalation situations.

IS risk category	Definition
Organizational environment	Change of business processes or policies that have an impact on project development processes and system specifications
User commitment	Lack of project sponsorship and adequate supports to the project development from the top management and/or key users
Project management	The likelihood of IS failure due to improper arrangement of work needed to control the project development activities
Resource management	Improper or lack of effective management of project resources, e.g., budget, time, and workforce
Requirements	Requirements mismatch user expectation. They also refer to the situations of incomplete requirement, misunderstanding requirement, and changing requirement risks.
Development process	The appropriate system development strategies or processes are not adopted or implemented by a project team
Technology	Insufficient or improper use of technology for developing the envisioned system
Others	Other types of project risks that do not fit into the above categories

Table 1. Categories of IS Risks

RESEARCH METHODOLOGY

A qualitative case study approach was employed in this research because it allowed the researchers to explore the phenomenon under investigation openly (Hodkinson and Hodkinson, 2001). The approach enabled the participants of this study to talk about their experience in the project and provide their own views towards IS risks during the course of project development. Furthermore, the approach suits this study's context because the phenomenon of escalation is unique in each project. Hence, an in-depth investigation was required to establish holistic understanding of project situations. Through this approach, the researchers could also use the advantage of multiple sources of information to enhance the credibility of the research process and findings (Yin, 2009).

This study presents the findings of an outsourcing IS project (RPAF, pseudonym) for a non-profit state enterprise under the authority of Thailand Ministry of Agriculture and Cooperative. This project was selected from a list of ATSI (Association of Thai Software Industry) members. The project is considered to be a medium scale project in Thai ISD environment as its overall budget is less than 100 million baht (Thai currency). The main objective of this project was to build an IS that enables staff in the enterprise to process electronic transactions for its three key departments, i.e., finance, personnel and Supply department. This system was also designed to allow the staff in the central and provincial branches to access and process the organisation's data digitally. The development company was expected to deliver the system within seven months after the project started. However, this project was eventually delayed because the system does not match the end-users' expectations. Subsequently, the development company had to spend more resources to modify the system and get user approval. At the end, this project was 100,000 bahts over budget and nearly four months late.

Two sources of information were used for this study: interview and documentation analysis. The semi-structured interview was conducted to ensure the uniformity of the topics of interest among the key participants whilst giving the researchers an opportunity to be flexible with each participant (del Barrio, 1999). It also allowed more specific questions, i.e., questions in relation to IS risk emergence and escalation situations, to be brought up during the interview as a result of what the interviewees say.

The total number of five members of the project team who played significant roles in the project was taken part in this interview in October 2008. These comprise of project coordinator, project manager, project leader, systems analyst, and project developer. In addition, documentation analysis was used to triangulate the data obtained from the interview approach as well as to validate spelling of project name, participants, and technical information given by the participants. The documentation includes the organisation profile, project background, system diagrams, and project meeting minutes.

Data collected was then analysed using thematic analysis. This approach helps the researchers to identify key issues of interest and leads to the ability to examine the phenomenon under investigation structurally (David and Sutton, 2004). By adopting this analysis technique, the researchers could organise all data that relates to, but not limited to, the pre-defined patterns (i.e., risk emergence from escalation perspectives). The data organised into the patterns can then be further explored and studied. To strengthen the credibility of thematic analysis, the researcher who analysed the findings of this study was not the same person who examined the findings.

RESEARCH FINDINGS

This section is organized according to phases of ISD and identifies and describes key incidents that contribute to escalation situations in the RPAF project.

1. Contract award phase – Failure to properly identify contract risks

Having a good relationship with the executives in the Ministry of Agriculture and Cooperative for many years helped the project coordinator to have information about the project and the details of the bid such as its Terms of Reference (TOR) before other companies. The development company decided to bid for the project as they were confident of their ISD experience despite they were well aware that the TOR was ambiguous and could be problematic.

"After reviewing the detailed specifications and agreements, I believed that the TOR was not clear and some logics did not make any sense. Though, I was certain that our company could eventually deliver the target system as our team has already had experiences of developing this kind of system." (Project Coordinator)

"No specific detail was written in TOR. For instance, one of the agreements only states that 'the final system must be able generate five reports', but there was no specific detail of how the report should look like." (System Analyst)

2. Project planning phase – uneven investment and lack of adequate contingency plan

The system consisted of three subsystems: Finance, Personnel, and Supply. The project team decided to invest more resources e.g. time and personnel in developing the Finance system because it believed that the system was the most complicated of the three and required most attention. As a result, the process of requirement collection and system development for the system ran very smoothly.

"I gave extra attention to the finance system because RPAF is a commercial organization. Financial system in commercial organizations is generally complicated and there is no off-the-shelf software that can readily be used without having a thorough system analysis." (Project coordinator)

In contrast, the Supply system that the project team was most confident of turned out to be the most problematic system. One explanation is the uneven distribution of project resources. While most attention was paid to the Finance system and the best resources for example the best programmer was in charge of the development of the Finance system, the Supply system development was insufficiently prepared and managed. The project team encountered more problems than they expected when developing the Supply system and at its worst there was no effective contingency plan available to manage the problems.

3. Requirement analysis phase, and System development phase – Information bias

The project team observed that users in the Supply department were unwilling to be involved in the requirement analysis and design or any system development activities. One apparent reason for the unwillingness was the responsibility avoidance on users' part.

"We came across a major problem when we were trying to collect requirements about 'receipts'. Users from every unit in the Supply department tried to avoid having responsibility for this process. They feared that if they helped us develop the system, they would be responsible for the system after its completion." (Project manager)

In addition, the project team found that some users were reluctant to give suggestions about the system and tended to agree with everything suggested by the project team because they worried that they might step over their superior's authority.

"Users from the Supply department were quite passive. [...] Their superiors must have forced them to participate in meetings (for requirement analysis and system development). During the meetings, they were reluctant to collaborate with the project team." (Project leader)

Likewise, some users felt reluctant to talk openly with the project team about their requirements when other users were present in the meeting.

"The reason why they (users) did not give us enough details about their expectations was because they did not want to be embarrassed in front of others in the meetings." (Project manager)

The project team observed that part of the reasons behind these requirement problems was because a high turnover rate of the employees in the Supply department.

"Users have been relocated and some retired. Subsequently, requirements have never been stable. Even the person who had experience of using the Supply system still could not give us the exact system specifications." (Project leader)

For these reasons, the project team decided to rely on the information source that was available for them.

"We decided to follow the suggestions from the person who has been working in this department (Supply department) for nearly 30 years. At that time, we were not suspicious at all about his advice since he was considered to be an expert in the Supply area." (Project leader)

The approval committee refused to approve and sign off the RPAF system because the system did not match its requirements.

"In the system adoption phase, we presented the system to the approval committees and users. Most users from the finance and personnel department agreed with the system features presented, but users from the Supply department especially in the provincial offices argued that what we had been developing was completely wrong." (Project developer)

Such outcome was, as admitted by the project team, because there was no effective contingency plan for the Supply system development and the team failed to verify their understandings of the system with the end-users prior to the RPAF system was implemented. For this reason, the project team had to commit additional resources e.g. time, money, and people to redevelop the system.

"[...] Let's say that there were five phases of system development for the procurement unit (in the Supply system). It seemed that we had to restart from phase two" (Project developer)

Despite it seems to be the project team's responsibility that the system did not meet the requirements in reality, the approval committee did approve the systems requirements submitted by the team and paid the company an installment. The payment indicated that the committee was satisfied with the requirements and gave the team the green light to go ahead to develop the system. The loosely defined TOR which the company was aware of before bidding for the project caused problems during the development stage because it allowed users to continuously change their requirements even at the late stage of the development though the requirements might have been agreed by both users and the team earlier. The situations where the company was inclined and felt obliged to accommodate the changes were because the company saw the Ministry of Agriculture and Cooperative as the company's long-term customer.

4. System adoption phase - Change of project champion

While the system was being modified and close to completion, the project took another turn as the director of information center in the user organization who had played a key role in supporting the project team was unexpectedly replaced by the head of the Supply department who seemed to have less understanding of the envisioned system, and lack project commitment.

"The director of information centre had an argument with the head of procurement unit in the Supply department. [...] As far as I understood, the head of the Supply blamed the director of information centre for taking our company's side and not protecting RPAF's benefits. Though, we believed that he had done his best for his organization." (Project leader)

This resulted in project uncertainty and further delay. For example,

"Even after the system was redeveloped according to her requests, the head of the Supply department was still unwilling to approve the system. She argued that she needed more time to thoroughly evaluate the system to make sure that the deliverables match her expectations and her organization is ready to use the system after delivered." (Project developer)

It should be noted also that the development team might not face the unsatisfied consequences of project champion change or the situation of the project champion change might not occur at all, if the team involved the head of the Supply department early in the project in order to gain her commitment to the RPAF project.

Eventually the project was four months late and 100,000 baht over budget. Figure 1 summarizes the relationships between escalation situations and project risks found in this project.

Phase of Type of Risk	Contract award	Planning	Requirement collection and analysis	System development	System adoption
Contract risk	Ambiguous TOR + Concern over the future relationship			Continuation of system modification (Escalation situation) leading to subsequent risks, e.g., schedule risks and resource management risks	
Project management risk		Lack of a contingency plan			
Requirement risk			Requirement risks due to information processing bias		Changing requirements (Escalation situation) leading to subsequent risks, e.g., schedule risks and resource mgnt. risks
Relationship management risk					Change of project champion ↓ Unclear project direction (Escalation situation)

Figure 1 The Emergence of Escalation Situations from an IS Risk Perspective

DISCUSSION

The findings of this study confirm the results of the existing literature which suggests that escalation situations in IS projects cannot be examined from a snapshot view alone; rather it is important that escalation situations are investigated from a holistic view throughout the stages of ISD (Newman and Robey, 1992; Keil, 1995; Parinyavuttichai, 2011). This is because the development of escalation situations requires time and triggering events that may emerge at any time during a project. For instance, it appears from the beginning that this project was not a good business decision given the ambiguity in the TOR. And once the company entered into the contract, it did not use any opportunity in the contract award or project planning phase to resolve the ambiguous TOR problems with the user organization. However, the effect of the constraints due to the unclear TOR became manifest only when requirements mismatched user expectations in the system development phase. This resulted in subsequent project complexities and risks. Likewise, failure to prepare a contingency plan for the Supply development did not contribute to the emergence of project escalation in the planning phase directly; rather, its impact became visible in the requirement collection and analysis phase which led to a continuation of resource allocation to recollecting user requirements and modifying the system at last. For this reason, one must apply a holistic view to fully understand the actual reasons behind project escalation and to thoroughly explain the dynamic phenomenon of project escalation.

Also this study has found that many escalation situations are interrelated. And in fact one escalation situation can intensify the escalation effect of other situations. For example, the escalation situation due to an ambiguous TOR or the situation of continuous changes of project direction due to the project champion change may have only a certain effect on a continuation of project commitment in allocating additional resources to keep the project on the same courses of action. But with the situation in which the development company concerned over the future relationship with the user organization, it seemed that the decision to carry on the project was unavoidable, creating further project escalation.

The results of this study also confirm that IS risks and project escalation are related. And in fact mismanagement of IS risks can result in inappropriate escalation of commitment whereas failure to effectively control project escalation can lead to the emergence of project risks (Montealegre and Keil, 2000; Pan et al., 2009; Parinyavuttichai, 2011). For instance, failure to prepare a contingency plan (project management risks) contributed to the emergence of a series of project escalation in various stages of the Supply system development. And failure to manage the escalation situations in the Supply system development resulted in overall project risks that eventually affected project delivery, i.e., changing requirement risks, schedule risks and resource management risks. In fact, one could also argue that properly managing project risks as early as possible could mitigate or even avoid the possibility of escalation situation occurrence. For instance, the RPAF project might not end up escalating, if the project manager prepared an appropriate contingency plan for developing the Supply system, identified the right person to provide user requirements, and directly contacted the executives of the user organization when major requirements problems existed.

In general, escalation phenomenon is discussed from traditional four points of view, i.e., project, psychological, social, and organizational points of view. Nonetheless, this study found that the situations of project escalation can also be discussed from a communication and legal viewpoint.

Having effective communication throughout the stages of ISD is rather difficult. Ineffective communication hence becomes a key risk identified across IS literature (Cuellar et al., 2006; Cuellar, 2009; Parinyavuttichai, 2011). And it can contribute to the occurrence of the project escalation especially in the situation where an organization has a high turnover rate of the users like RPAF. In RPAF, it seemed that users lacked adequate knowledge of the envisioned system and some were reluctant to provide their requirements to the project team. As the result, the project team members developed 'a mum effect' as well as 'a deaf effect' during the process of requirement collection which eventually prevented the project team from collecting appropriate user requirements. According to Keil and Robey (2001) the mum effect refers to the situations where an individual is reluctant to provide information to others whereas the deaf effect explains the situations where an individual refuses to listen to others' suggestions. In this project, these two situations occurred. After a series of failure to collect user requirements, the project team turned a deaf ear to others' suggestions and only listened to the source of information who they trusted in, whereas they refused to report the requirements problems to RPAF executives as they might have thought that it was unnecessary. However, it turned out that failure to communicate the project problems to the appropriate persons resulted in unexpected project complexity and risks, and eventually triggered other escalation situations in the project.

In terms of the legal issue, literature suggests that expectations from both parties need to be mutually recognized and agreed upon before the project starts and one must not underestimate the impacts of the contract risks (Oracle, 2009). In this study, an ambiguous agreement became one of the key reasons for requirement change and project uncertainties. And the continuous change of user requirements was inescapable especially when the project team worried about user satisfaction with the performance of the project team. However, by allowing the users to change their requirements, subsequent project complexities and risks arose including schedule risks and resource management risks, and another wheel of project escalation circle started turning.

CONCLUSION

Literature stresses the importance of the study of escalation phenomenon in IS projects as many IS projects failed despite large amount of resources allocated to the projects. There are many reasons that contribute to escalation situations in IS projects but little is known about how IS risks can induce escalation situations, and vice versa. Therefore, this study sheds light on the link between escalation situations and IS risks and tries to systematically explain project escalation from a risk viewpoint. The results of this study suggest that there is indeed a relationship between escalation situations and IS risks. In particular, mismanagement of IS risks can contribute to project escalation, whereas the outcome of escalation situations cause project complexity and risks. In addition, the complicate relationship between project escalation and risks can turn into to a vicious circle that is hard to escape. Also, the results of this study extend the existing body of knowledge of project escalation by adding that escalation situations can be due to communication and legal reasons.

The findings of this study benefits the future ISD practices. Specifically, IS practitioners may learn what and how escalation situations can emerge from project risks and how to avoid project escalation by mitigating the potential risks as early as possible. Future research may consider investigating how to structurally avoid and prevent IS risk emergence from project escalation and turn around (de-escalate) a failing project to a successful one.

Due to the interpretive nature of this study, the findings of this study are restricted to a specific type of IS projects, i.e., a medium scale outsourcing project. Future study may consider examining the phenomenon of project escalation from other project types and scales as this may expand the horizon of the current understandings of the project escalation concept.

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