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Making IT Project De-Escalation Happen: An Exploration into Key Roles *

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Abstract

Given the persistent and costly problem of escalating IT projects, it is important to understand how projects can be de-escalated successfully, resulting in project turnaround if possible, or termination if necessary. Recent work suggests that the instantiation of specific roles may be central in bringing about de-escalation. However, few such roles have been identified to date and there has been no systematic study of key roles. In this paper, we therefore explore roles in IT project de-escalation using a single-case approach. Results suggest that de-escalation not only depends on the existence of particular roles, but also on role interaction. We identify seven roles that are of substantial importance in shaping whether and how de-escalation is carried out: messenger, exit sponsor, exit champion, exit blocker, exit catalyst, legitimizer, and scapegoat. Furthermore, we offer a set of propositions that capture key role interactions during de-escalation. Implications for research and practice are discussed.

Keywords: *IT projects, escalation, de-escalation, roles, role interaction, case study.*

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1. Introduction

Regardless of development approach, the risk of failure in information technology (IT) projects is significant, especially in circumstances characterized by high problem complexity, substantial changes in business processes, innovation in solutions, and environmental uncertainty (Iivari, 1990). As a result, IT projects are well known for budget over-runs and schedule slippage; they frequently fail to deliver the expected functionality or business benefits; and some projects escalate out of control, continuing to absorb valuable resources without ever delivering benefits to the organizations that undertake them (Keil, 1995). In fact, a survey sponsored by the Information Systems Audit and Control Association (ISACA) found that 30–40 percent of IT projects undergo some degree of project escalation (Keil and Mann, 1997).¹ Increased knowledge about *de-escalation*—the termination or redirection of an escalating IT project—is therefore important (Keil et al., 2003; Keil and Robey, 1999; Montealegre and Keil, 2000; Pan et al., 2006a).

However, turning around a failing course of action is not easy, and studies have shown that organizations often pursue projects far beyond the point where costs outweigh benefits (Brockner, 1992; Staw and Ross, 1978, 1987). Consequently, de-escalation has to be actively managed as a complex process (Keil and Robey, 1999; Montealegre and Keil, 2000; Pan et al., 2004; Pan et al., 2006b). While recent research on de-escalation sheds light on its phases (Montealegre and Keil, 2000) and transformation of commitment (Pan et al., 2006a; Pan et al., 2004), existing studies offer limited insights into how actors are involved in making de-escalation happen (Heng et al., 2003a).

The purpose of this paper is therefore to identify key roles in initiating and executing IT project de-escalation and to explore role interactions during de-escalation. We accomplish this through a case study of the Danish VUE² project, a high-profile IT project aimed at developing an administration system for all Danish universities. Based on the case study, we identify seven roles that are of substantial importance in shaping whether and how de-escalation is carried out: messenger, exit sponsor, exit champion, exit blocker, exit catalyst, legitimizer, and scapegoat. Furthermore, we offer five propositions capturing key role interactions that promote de-escalation.

The following section provides a background of relevant literature, which is followed by a description of the research approach and a description of the VUE case focusing on de-escalation. Thereafter, we analyze and discuss the case in two steps: identification of key roles and identification of key role interactions, including their impacts on de-escalation. The paper ends with conclusions and implications.

2. Background

This section discusses prior research on de-escalation, the use of the role perspective in IS research, and prior studies that address roles in de-escalation.

2.1. De-escalation Research

While there has been considerable research on escalation (Keil, 1995; Keil et al., 2000; Staw, 1997; Staw and Ross, 1987), research on de-escalation has been limited (Keil and Robey, 1999; Pan et al., 2004). De-escalation can be defined as “the reversal of escalating commitment to failing courses of

¹ While escalation can occur with any type of project, IT projects may be particularly vulnerable due to the abstract and uncertain nature of information systems development and implementation (Abdel-Hamid, 1988; Brooks, 1975; DeMarco, 1982; Zmud, 1980). Indeed, most IT projects pose a particularly difficult management challenge due to a high degree of project complexity related both to technological uncertainty and to breadth of project scope (c.f. Kruglianskas and Thamhain, 2000; Shenhar, 1998). Even with packaged software, such as ERP systems, there are many examples of spectacular problems (Bulkeley, 1996; Stedman, 1999; Tomsho, 1994).

² VUE is a Danish abbreviation for “Videregaaende Uddannelsers Edb-system,” which can be translated: “IT system for further and higher education institutions.”

action, either through project termination or redirection” (Keil and Robey, 1999, p. 65). De-escalation has been shown to consist of a number of phases that ultimately result in decisions that lead to termination or a substantial re-direction—a turnaround or a partial salvaging—of the project (Montealegre and Keil, 2000; Pan et al., 2006b). Isolated attempts to remedy problems that fail to substantially change the project charter, the overall approach of project work, or other central aspects of the course of action do not constitute a de-escalation effort (Mähring and Keil, 2008).

Keil and Robey (1999) found only 12 empirical studies of de-escalation, most of which were laboratory studies. These studies suggest that there are certain factors that promote de-escalation. In a field survey involving 42 information systems auditors, Keil and Robey (1999) examined the significance of 12 such factors in the transition from escalation to de-escalation, finding empirical support for seven factors. Specifically, the transition from escalation to de-escalation was marked by significantly less tolerance for failure, more publicly stated limits, more awareness of problems, more clarity of criteria for success or failure, more outcome-oriented evaluations, more regular evaluation of projects, and more separation of responsibility for approving and evaluating projects. In the same study, the researchers offered a simple communication model of de-escalation, based on actors’ willingness to report and receive bad news (Keil and Robey, 1999).

Montealegre and Keil (2000) proposed a process model of de-escalation consisting of four phases: (1) problem recognition, (2) re-examination of prior course of action, (3) search for alternative course of action, and (4) implementing an exit strategy (Table 1).³ However, the model does not address the roles that various actors may play in advancing the de-escalation process.

Table 1. Phases in the Montealegre and Keil (2000) De-escalation Process Model

<i>Phase 1: Problem Recognition</i>	No corrective action can be taken until actors in a position of authority begin to acknowledge the problems and their seriousness. Often, what can appear to outsiders as an obvious case for withdrawal may not outweigh the accumulated commitment of those inside the organization, particularly those who have played a role in championing the project. In many cases, it appears that either internal or external pressure must exist before problem recognition can occur.
<i>Phase 2: Re-examination of Prior Course of Action</i>	During this phase, actors begin to question the wisdom of the previously chosen course of action and problems are scrutinized, but their commitment has not dropped so precipitously as to dictate immediate withdrawal.
<i>Phase 3: Searching for Alternative Course of Action</i>	In this phase, further evidence of problems is often sought and an alternative course of action is identified and legitimized. Consultants can sometimes help legitimize a new course of action and impression management can also facilitate the process. However, the decision to embark on a new course is still going to be difficult, especially if it results in loss of face for decision-makers.
<i>Phase 4: Implementing an Exit Strategy</i>	Given the political nature of escalating projects, merely identifying an alternative course of action is insufficient to bring about change. The alternative course must be legitimized and sold to various actors. Moreover, all of this needs to be done, if possible, in a way where impressions are managed so as to allow face-saving on the part of key executives who backed the failing course of action. Implementation of the exit strategy can be particularly challenging if certain actors have a vested interest in the previously chosen course of action.

³ While the model was derived from a single case study—the computerized baggage handling system at the Denver International Airport—it was subsequently shown to be applicable to the Taurus project at the London Stock Exchange (Keil and Montealegre, 2000), suggesting that the model has some generalizability.

Royer (2002; 2003) introduced a process model that takes a somewhat different view of de-escalation. Her work suggests that escalation stems from collective belief in project infallibility, which creates groupthink, cohesiveness of the decision-making unit, and “lenient procedure” (inadequate control measures, procedures, and criteria). In Royer’s view, de-escalation occurs when collective belief is shattered, newcomers destroy decision unit cohesiveness, and evaluation criteria become based on economic rationality (Royer, 2002). This model did not prove stable across the studied cases, and has shortcomings (Mähring and Keil, 2003).

Pan and his colleagues (Pan et al., 2006a; Pan et al., 2004) also stress the importance of understanding de-escalation as a process, and focus specifically on “commitment transformation”: how actors overcome their commitment to a failing course of action and shape commitment toward a new course of action (project redirection or termination). Activities that support commitment transformation are: disconfirmation of the failing course of action, the project champion’s continuous commitment in turning around the failing project, provision of psychological safety for project members, development of new attitudes and behaviors by project members, and alignment and integration of these new attitudes and behaviors (Pan et al., 2004).

In a laboratory experiment, Heng et al. (2003a) found that blame shouldering and provision of assurance by peers and, particularly, by superiors helped facilitate individuals’ de-escalation of commitment to a failing course of action when sunk cost was not too high. Their research was confined to an individual’s relationships with superiors and peers, but as the first study to explicitly address the question of “who matters?” in de-escalation, their paper points to the need for further research into the actors that make de-escalation possible. It also suggests that the role perspective may provide a promising avenue for exploring this problem.

Two fundamental challenges of escalation and de-escalation research deserve mention although they are not the focus of this study. First, the uncertainty inherent in escalation situations means that most often we cannot be certain about when a course of action is truly in vain and when more effort might yield results (Drummond, 2005). This means that decisions to de-escalate or persist entail two risks: of wrongfully terminating what would (or could) have become a successful effort and of continuing to fund a doomed endeavor (Drummond, 2005). Management commitment needs to be “appropriate”: not enough to cause escalation, but not so little as to lead to premature termination of projects (Heng et al., 2003b). Here, we stay with the mainstream view of the literature: Repeated negative feedback about the viability of a course of action necessitates de-escalation in the form of either termination or redirection, which hopefully leads to an ultimately successful outcome (Brockner, 1992; Montealegre and Keil, 2000).

Second, because of this uncertainty, what is escalation and what is a bump in the road to success becomes visible only slowly (Mähring and Keil, 2008) and may be determinable with absolute certainty only retrospectively. It could be argued that this potentially limits the prescriptive value of escalation and de-escalation research. If so, this is a problem shared with areas such as disaster studies (Snook, 2000; Vaughan, 1996). Ultimately, the applied value of escalation and de-escalation research is determined by the extent to which it provides a basis for practical action.⁴

2.2. The Role Perspective in IS Research

The use of the role concept is not uncommon in IS research. In particular, it has been frequently used in IS implementation and IS development research.

Several studies have identified roles that need to be fulfilled to ensure successful implementation of information systems (Beath, 1991; Lederer and Nath, 1991; McKenney et al., 1995; Rockart and De Long, 1988). Typically, these roles include the *sponsor*, a senior executive with high authority who acts as a type of benefactor for an implementation effort, and the *champion*, an executive or middle manager who actively drives the effort forward through persuading other actors to perform the

⁴ We thank the senior editor and one anonymous reviewer for pointing us to the importance of these attributes of escalation and de-escalation research.

necessary tasks for the effort to succeed. Although the names used for these roles sometimes differ, the role descriptions have been remarkably stable across studies, whether concerning specific IS development projects (Edwards, 1996; Rockart and De Long, 1988) or longer term, corporate-wide IT efforts (McKenney et al., 1995).⁵ An additional role is that of *change agent* (Markus and Benjamin, 1996), which includes facilitating work sessions and interventions as well as designing and executing participation opportunities for stakeholders (Markus and Mao, 2004).

Research on IS development has also examined key roles and their interaction. In addition to the two obvious roles of *user* and *analyst* (Barki and Hartwick, 2001; Newman and Robey, 1992), other roles have been proposed. Ciborra and Lanzara (1994) suggest the introduction of a *reflector* or *watcher* in the IS design process to help designers and users carry out self-evaluations and self-reflection (also Lanzara and Mathiassen, 1988). Fisher (1999) studied the role of the *technical communicator* in explaining complex technologies to end-users during IS development and how this role improves IS usability. Robey et al. (2001) studied four recurrent roles under different software development paradigms: *user*, *developer*, *manager*, and *guarantor* (a role that guarantees the quality and suitability of an application).

All of the above studies employ the role concept even if they do not employ role theory (Katz and Kahn, 1978) to its full extent. Most of the above studies see roles as constituted of patterns of actions—related to an individual or group—that have a potential or perceived impact on a course of events. Intentionality or deliberate choice by the role incumbent is not seen as necessary for the role to be effectuated. This is in line with the common-sense expression “to unwittingly play a role” and consistent with how other roles such as *boundary spanner* have been characterized (Levina and Vaast, 2005).

In all of these studies, roles are not positions and roles and actors are distinct: Actors can assume several roles, and a specific role can be present in a social context over a long time period during which role incumbents may change (Robey et al., 2001). Although roles are normally inhabited by individuals or groups, we found that the literature on escalation and de-escalation sometimes describes organizations as performing actions related to de-escalation. The Shoreham case (Ross and Staw, 1993) describes actions by the Long Island Lighting Company, the U.S. Nuclear Regulatory Commission, and New York State, while the Denver International Airport Case (Montealegre and Keil, 2000) describes actions taken by the Securities and Exchange Commission and the Federal Aviation Administration.

In order to allow for viewing organizations as actors while remaining faithful to the role concept, we see organizational action as performed by a dominant coalition of actors (Child, 1972; Cyert and March, 1963; Pennings and Woiceshyn, 1987). This group of actors can change over time, but at each point in time the active dominant coalition is the group conducting organizational actions. Thus, we can see a role emerging from a pattern of organizational actions performed by a dominant coalition—a group of individuals effectuating those actions.

2.3. Roles in De-escalation

Building on the use of the role concept in the IS implementation and IS development literature described above, as well as on Somers and Nelson (2004), we define a de-escalation role as a coherent pattern of actions performed by one or several actors during the process of IT project de-escalation.

Existing research on roles in de-escalation is very limited. Keil and Robey (1999, 2001) studied the reporting of bad news about troubled software projects, and suggested the term *messenger* to denote the role of bringing bad news to someone with authority to address the problems. Royer (2003)

⁵ McKenney et al. (1995) use the term *technology champion* for the “nurturing” role and *technology maestro* for the driving role.

suggested that de-escalation is dependent on an *exit champion*, who drives the de-escalation effort.⁶ Exit champions question the current course of action, demand data on and assess the viability of a project, and act to pull the plug on the failing project. Royer (2003) found that exit champions need to be directly involved in a project and must have both credibility and an extensive personal network within the organization. Her data suggest that people who become associated with an effort in its later phases are more likely to become exit champions (cf., Keil, 1995). Royer (2003) also found that in her case studies, *project champions* opposed de-escalation initiatives and tried to curtail them by discrediting people advocating or exploring de-escalation options.

In contrast, a study by Pan and colleagues (2006a, 2004) suggested that the project champion in the studied case was crucial in transforming commitment during de-escalation. Pan and colleagues did not identify any additional roles. The depiction of the project champion role as crucial in promoting (rather than impeding) de-escalation may seem at odds with earlier escalation and de-escalation literature (Keil, 1995; Mähring et al., 2004; Montealegre and Keil, 2000; Royer, 2002), which indicates an opportunity for clarifying this issue.

In sum, the de-escalation literature is under-developed and somewhat inconsistent with respect to roles involved in de-escalation. In fact, no prior study has systematically examined relevant roles in de-escalation. Therefore, in this study, we examine key roles and patterns of role interactions with the aim of furthering our understanding of how to bring about de-escalation. The role perspective, Montealegre and Keil's (2000) phase model, and the messenger and exit champion roles previously identified in the literature are the key theoretical elements that we build on.

3. Research Approach

Case studies allow investigation of how phenomena unfold in context and over time (Eisenhardt, 1989; Miles and Huberman, 1994; Yin, 2003), and they are considered highly appropriate for exploratory, theory-building research (Benbasat et al., 1987; Eisenhardt, 1989; Paré, 2004; Yin, 2003). Therefore, we used a single case study of the high-profile Danish VUE project—not previously reported in the research literature—as the basis for this research.

3.1. Data Collection

There was a wealth of readily available data about the VUE project due to public scrutiny and media attention. In addition, one of our authors had first-hand knowledge: He participated in project kick-off activities as an external expert, he received recurrent project updates as a member of one of the universities involved, and he was engaged as an external consultant to evaluate specific aspects of the project (Mathiassen et al., 1998).⁷ While this involvement provided in-depth understanding, we used three techniques to guard against bias: (1) triangulation within and between different data sources, (2) the use of a time-line to arrange data and build a coherent story, and (3) source critique and formulation of alternative explanations (Golden, 1997; Mason et al., 1997; Yin, 2003). We also employed these techniques to guard against biases inherent in collecting data retrospectively.

Retrospective data collection and use of secondary data sources are frequent in escalation and de-escalation case research (Lipshitz, 1995; Ross and Staw, 1986; 1993), due to the difficulty of following such projects as they unfold and the problem of gaining access to events that may reflect negatively on an organization and its members. In the case of VUE, we supplemented secondary data with retrospective interviews with select key actors. Thus, our data collection approach was similar to Ross and Staw's (1993) study of the Shoreham nuclear power plant.

We analyzed more than 800 pages of publicly available data from several categories:

⁶ We use the term exit champion rather than de-escalation champion, because it is already established and more succinct. "Exit" here means *exit from a failing course of action*, thus including project *redirection* (turnaround) as well as project *termination* (cancellation).

⁷ This involvement does not qualify this study as action research (Baskerville, 1999; Davison et al., 2004) but rather qualifies as participant observation within the case study approach (Yin, 2003).

- External assessments of VUE carried out by experts or officials outside the project and its governance structure (e.g., Harder, 2000; Larsen et al., 1999; Mathiassen et al., 1998)—four reports.
- Articles in professional magazines (e.g., Amnitzboell, 1999; Clausen, 1999; Djørup, 2000; Nielsen, 1999; Ørskov, 1999a, c)—18 articles.
- Articles in newspapers (e.g., Pedersen and Klarskov, 1999; Ritzaus Bureau, 1999a, b)—48 articles.
- Documentation from universities, the Danish parliament and ministries (e.g., Aalborg University, 1999; Nathan, 1998)—22 documents.

Following Eisenhardt's (1989) advice to overlap data collection and analysis and to adopt flexible data collection methods, we identified key informants to help complete the case description. This led to six interviews with four key participants in the VUE project, using individualized semi-structured interview guides (see Appendix A for an example). The informants were chosen to triangulate other data sources and encompassed the following stakeholders: Customers/Users, VUE Project/VUE Center, and External Vendor (Figure 1). Specifically, we interviewed one manager who had worked with VUE at one large and two small universities, the managing director of the VUE Center, the project manager from the software contractor WM-data, and, the account manager from WM-data.

3.2. Data Analysis

The first step in analyzing data from VUE involved constructing a chronological case narrative. This was facilitated by constructing a timeline for the entire project (see Appendix B for a stylized version of this timeline). We then used the Montealegre and Keil (2000) model as an organizing template to develop a chronological summary of the VUE project's de-escalation (Table 2).

In the next step, we produced an inventory of actors and actions during the various de-escalation phases based on a careful reading of the case narrative together with continual revisiting of all data sources (Table 3). Actors and actions were corroborated by one of our authors based on his first-hand knowledge of the project. We then applied content analysis to the cells of Table 3 to examine each action and identify an underlying role implied by this action. To do so, we analyzed the impact of each action and determined if it implied a new role or represented an instance of a previously identified role.

For example, we observed that Per Harder was ostensibly engaged to render an "objective" assessment of VUE, but that his report seemed to have facilitated de-escalation by reinforcing the utility of withdrawal (Staw and Ross, 1987) and by removing roadblocks to closing down VUE (Harder stated that state employees had not been criminally negligent; closing down VUE would not have to lead to legal action). This supported the line of action pursued by Minister Margrethe Vestager (who we separately identified as an exit champion). We hypothesized that this may be a pattern of action that could constitute a role, which we tentatively named "legitimizer." When analyzing other actions (e.g., Per Harder's involvement in earlier phases and the involvement by consulting firm Jacobsen & Associates), we detected a similar pattern whereby the reports by external parties were used to advance the de-escalation process. These actions did not seem to require creating a new role; rather, they strengthened the case for the legitimizer role. After the analysis of all cells in Table 3, we reassessed and reviewed the preliminary set of roles. For example, we compared the legitimizer role to other roles, such as exit champion and messenger, and found that there was no overlap in actors between the two roles and that their impact on de-escalation was distinctly different. Through this process we aimed to achieve consistency, parsimony, completeness and meaningfulness of the role set. This left us with a parsimonious set of roles (Table 4) that could be mapped to de-escalation phases (Table 5).

Thereafter, we analyzed how identified roles interacted and exercised influence. This was done in an iterative fashion (Eisenhardt, 1989; Miles and Huberman, 1994; Paré, 2004; Yin, 2003). The mappings of roles to de-escalation phases (Table 5) guided our identification of key role interactions. Each time we identified a candidate pattern, we returned to the detailed case narrative to validate, adjust, or reject it. In conjunction, we also analyzed what resources or means each role drew upon

Table 2. Summary of the VUE Project De-escalation Process

PHASES	ACTIVITIES	VUE EVENTS
Phase 1: Problem Recognition	Recognizing negative feedback Responding to external pressure Managerial action	By 1998, the seriousness of problems in VUE is finally recognized. By that time, the STADS part of VUE is implemented and in use. However, Copenhagen University and Copenhagen Business School decide to abandon VUE, leaving all three major universities and roughly 50 percent of Danish students outside VUE... Spring 1999: Numerous newspaper articles and a report from the Auditor General of Denmark put pressure on the Minister of Education to act. June 1999: The minister asks an independent lawyer to carry out an investigation of VUE.
Phase 2: Re-examination of Prior Course of Action	Clarifying the magnitude of the problem Redefining the problem Managerial action	After becoming responsible for VUE, the new Minister of Research Jan Trøjborg starts to clarify the magnitude of the problems involved. The cost of running VUE can no longer be ignored. Since VUE is becoming too expensive for the Ministry of Research, several ways of relieving the budget from VUE are identified. As a first decision, the Minister of Research, Jan Trøjborg, instructs the participating institutions to pay for development work on VUE.
Phase 3: Searching for Alternative Course of Action	Obtaining independent evidence of problems Identifying and legitimizing a new course of action Managerial action	The Auditor General's highly critical report on the VUE project details problems. In addition, education minister Margrethe Vestager commissions an independent investigation into VUE from lawyer Per Harder. Two new courses of action are identified: (1) selling the VUE Center to a private company; (2) letting the university-level institutions take over VUE themselves.
Phase 4: Implementing an Exit Strategy	Appealing to key stakeholders Managing impressions Resolution	The Parliament's Finance Committee agrees to put the VUE Center up for sale. July 1999: Newspapers announce that the VUE Center is for sale. August 1999: Three companies show interest in taking over the VUE Center. Negotiations start. Late summer 1999: Shortly after it is decided to put VUE on sale the university institutions form a procurement group to purchase the output from the use of the STADS subsystem and the subsystem for financial and personnel management (ØSS). September 1999: The Minister of Research calls off the selling of VUE. The conditions required by the potential buyers were not satisfactory. The strategy of letting universities pay for continued development holds. On the basis of a report from an impartial investigation by lawyer Per Harder, Minister of Education Margrethe Vestager concludes that there will be no cases against civil servants. It is concluded that the major cause of the problems was that needs had not been sufficiently defined by the university-level institutions. The minister also states that the Danish government should stay out of software development in the future. Former education minister Bertel Haarder is pointed to as contributing in a major way to the troubles of VUE, effectively being framed as a scapegoat. During the next six months it is decided to close the VUE Center. March 2000: The VUE Center closes down, and 30 people are fired. Maintenance of the VUE systems is taken over by a new organization run by a vendor that interacts with a procurement group created by cooperating universities.

in order to influence others (Frost and Stahelski, 1988; Raven et al., 1998). We analyzed each identified interaction and coded it using an updated and expanded version of the French and Raven (1959) typology of bases of power (Raven et al., 1998). We also revisited the case narrative to look for actions and conditions that signaled influence without overt role interaction.⁸

4. The VUE Project

This section presents the history and context of VUE, highlighting the de-escalation process from antecedent condition⁹ through the phases of de-escalation to the project outcome. An overview of the history of VUE is available in Appendix B, and a chronological summary of the de-escalation of VUE is provided in Table 2.

4.1. Antecedent Condition

In 1989, Bertel Haarder, the Danish Minister of Education, was criticized for lack of control over the funding and productivity (student throughput and quality of education) of Danish universities. Danish universities are state institutions funded by the state of Denmark but operating with considerable autonomy. Haarder responded to the criticism by establishing a working group aimed at creating an IT system for all Danish universities. In addition to saving taxpayer money by streamlining university administration, the new system would provide a means for evaluating institutional performance, which ultimately could be linked to financial incentives.

Early on, the project received criticism for being high risk with little chance of success. Nevertheless, in 1991 the Danish parliament's Finance Committee appropriated six million EUR¹⁰ for the Ministry of Education to develop the VUE system. It was to be used by all Danish universities and consisted of three subsystems: (1) a general student information and grades subsystem, called STADS, (2) a financial and personnel management subsystem called ØSS, and (3) a central administrative subsystem within the Ministry of Education (a basic version of which already existed). The system was expected to be up and running by 1994. Unbeknownst to the Finance Committee, Aarhus University, the second largest university in Denmark, decided to opt out of VUE at this early stage.¹¹ A new organization called the VUE Center was created to oversee the development and to work as an intermediary between the universities and the external vendor. The VUE Center would also be responsible for operating and maintaining the implemented system. The core systems requirements were defined by the end of 1993, but with little involvement from users (Larsen et al., 1999): Only a few universities had a seat in the Specialist Steering Committee that provided input on requirements. Criticism of the project was not well received under Bertel Haarder's leadership. In one instance, VUE development manager Bjarne Kohl was fired after voicing concerns about insufficient funding. The president of Copenhagen University, Ove Nathan, recalled another instance: "When I compared the VUE project to an over-dimensioned bridge project, Bertel lost control, stood up, and hammered the chair to the floor so that the crystal chandelier clinked dangerously" (Nathan, 1998, p. 235).

In January 1993, Ole Vig Jensen replaced Haarder as minister of education. Jensen requested that the Ministry of Finance appropriate additional funds for VUE. At the same time, an internal feasibility study recommended that the ØSS subsystem should be based on an Oracle-based standard application package, rather than developed in-house. In response to this study, the parliament's Finance Committee decided on additional funding to the project of 3.3 million EUR.

From the end of 1993 to the beginning of 1995, two prototypes of the STADS subsystem were

⁸ For example, reward and coercive power can influence behavior at one time even when the reward or punishment is carried out at a later time. Thus, an actor may exert influence on the basis of such powers even when there is no reward or punishment within a certain timeframe.

⁹ The antecedent condition was a high level of commitment to a previously chosen course of action that had failed to produce desired results, i.e., a condition of escalation.

¹⁰ The appropriation was 45 million Danish *Kroner*. An exchange rate of 1:7.5 is used for Euro (EUR) to Danish *Kroner* throughout the paper.

¹¹ The main reasons behind Aarhus University's decision to opt out of VUE were that its existing systems worked well and were not in need of replacement, and that its management was skeptical towards the VUE project.

developed and tested at Copenhagen University, several engineering colleges, and Aarhus Business School. Two major conclusions were reached from testing: (1) more functionality was needed, and (2) more funds were needed to complete the project. In May 1995 Minister Jensen requested an additional 5.1 million EUR. In response to this request, the Danish parliament's Finance Committee hired consulting firm McKinsey & Co. to conduct an investigation. McKinsey & Co. found that the project was in clear danger of failing (Ørskov, 1999c). Shortly thereafter, in October 1995, the auditor general of Denmark published a highly critical report. The project was already 18 months behind schedule, and the estimated cost had nearly tripled to 17.3 million EUR.

In Denmark, the general public and the media have extensive rights to access information from public institutions and there is a corresponding culture of openness to the public. Consequently, the auditor general's report prompted considerable public attention and highly negative press. After the storm had dissipated, the VUE Center, incorporating all development activities, was made an independent entity under the Ministry of Education. Through this measure, future costs for VUE were removed from the ministry's budget, although VUE still had to report to the ministry. Additional funding would have to come from the university institutions and, in turn, institutions would be allowed to withdraw from VUE. The possibility to opt out of VUE was stated in an official document that came to be known as the "freedom letter." (Up to that point, VUE adoption had been mandatory.) A decision was also made by the ministries and the parliament's Finance Committee that the ongoing operation of the VUE Center would eventually have to be funded by the participating institutions. Minister Jensen set the new deadline for VUE to August 1998.

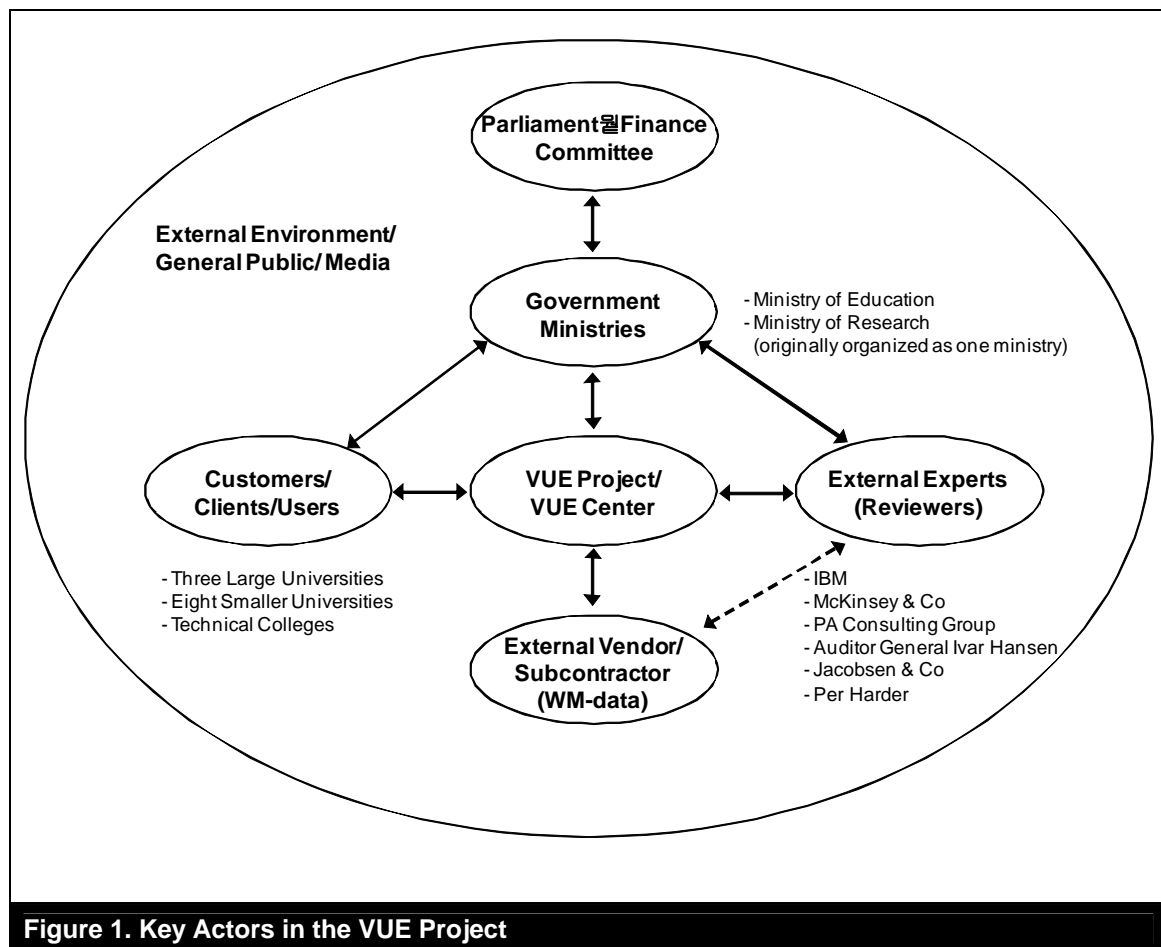


Figure 1. Key Actors in the VUE Project

The VUE center delivered a basic version of the STADS subsystem to the Danish Technical University in November 1996. In the following two years, a new university implemented STADS every three to five months, while the other VUE subsystems remained in development with repeatedly revised delivery dates.

Figure 1 provides a categorized overview of the actors in the VUE project. It should be noted that the universities can be divided into larger universities (with more complex systems support requirements and with financial resources to consider alternatives to VUE) and smaller universities and technical colleges (with limited options). During the project's escalation, the Finance Committee acted as project sponsor, and the Minister of Education Bertel Haarder was the initial project champion. As we move to the de-escalation phase of the project, many of the same actors are prominent, but they step into new roles.

4.2. Phase 1: Problem Recognition

Recognizing negative feedback

By 1998, the seriousness of problems in VUE was finally recognized. The two remaining large universities, Copenhagen University and Copenhagen Business School, decided that they were not going to adopt VUE. As Copenhagen University Director Else Sommer explained, "At some point it has taken too long before things improve and you lose confidence that something useful will emerge" (Ritzaus Bureau, 1999b). Since Aarhus University had already stepped out of VUE, the system would now, if and when completed, only process student data for about 50 percent of Danish students. Several smaller universities and engineering colleges, however, were already using the system, and even though the functionality was less than originally hoped for, they depended on it. Around this time, the vendor, WM-data, announced additional delays in deliverables (Mathiassen et al., 1998).

There were several reasons for the largest universities to pull out of the project. These universities had needs that were partly different from the smaller universities and had already invested in developing customized solutions. Their enthusiasm for accepting a standard "one size fits all" system was never particularly high. Thus, they followed a "wait and see" approach, and as problems became more pronounced it became opportune for them to withdraw.

Responding to external pressure

The pressure on VUE continued with numerous articles in Danish newspapers during the spring of 1999 and reached an explosive point when the auditor general's report was released. The critique was four-fold: (1) the project had not led to the expected improvements, and economic advantages that had been prime reasons for the project had not materialized, (2) development had cost three times more and taken five years longer than estimated, (3) fewer than half of the estimated number of institutions were using the system, and (4) the promised functionality was not delivered (Harder, 2000; Larsen et al., 1999). The report was very critical of the Ministry of Education, accusing it of hiding facts from the parliament's Finance Committee. Partly because of this criticism, the formal responsibility for VUE was transferred from the Ministry of Education to the Ministry of Research. Jan Trøjborg, the new Minister of Research, became formally responsible for the project.

4.3. Phase 2: Re-examination of Prior Course of Action

Clarifying magnitude of problem

After becoming responsible for VUE, Jan Trøjborg started to clarify the magnitude of the problems involved. He found that the Technical University and the engineering colleges were using STADS and were dependent on it, and that it would create major problems if VUE was withdrawn since their legacy systems were no longer usable. Furthermore, three smaller universities, Aalborg University, Roskilde University, and Southern Denmark University, indicated that they were not yet using STADS, but planned to do so in 1999. Still, the three major university institutions stuck to their decision not to implement VUE.

Redefining the Problem

The Ministry of Research realized that the project had become a huge financial burden and the present course of action could not be sustained. At the beginning of 1999, Jan Trøjborg implemented a decision that had been reached earlier and instructed the participating institutions to pay for development work on VUE. In essence, this meant that the problem was redefined from “How can the government provide university institutions with an integrated information system?” to “How can the government avoid the mounting costs of the project?” and subsequently to “How can the responsibility for development costs be shifted from government to universities?”

4.4. Phase 3: Search for Alternative Course of Action

Obtaining independent evidence of problems

In addition to the report from the auditor general (Larsen et al., 1999), Minister of Education Margrethe Vestager in early 1999 requested an independent report from lawyer Per Harder that would later prove instrumental in managing impressions and framing the withdrawal from VUE.

Identifying an alternative course of action

The total cost of VUE, including participating institutions' costs of over 19 million EUR, had now grown to 47.7 million EUR (Larsen et al., 1999). Thus, the Minister of Research Jan Trøjborg had clear evidence of the burden VUE had become.

Two strategies were discussed (Aalborg University, 1999): (1) selling the VUE Center to a private company or (2) letting the university institutions take over VUE. The leader of the VUE Center was one of the originators of the idea to sell it. This influenced the Ministry of Education to decide that the VUE Center should be sold, and the Parliament's Finance Committee agreed to this in May 1999. In response, the participating universities attempted to form a procurement group to purchase services from the VUE Center for the STADS subsystem and the financial and personnel management subsystem ØSS.

4.5. Phase 4: Implement an Exit Strategy

Appealing to stakeholders

In July 1999, it was publicly announced that the VUE Center was for sale. In August 1999, three companies showed an interest and negotiations began. The involved university institutions were told that VUE was going to be sold, and they were not happy. Jørgen Holm Nielsen, responsible for VUE at the engineering colleges' support center, commented on the announced sale, “We are now in the implementation phase. For us, it is vital to maintain the systems and add new functionality ... now we risk losing our investments” (Ørskov, 1999a).

In September 1999, the Ministry of Research called off the selling of VUE. The newly appointed Minister of Research, Birthe Weiss, explained that it was not an attractive buy, “Potential buyers were only guaranteed to service and supply the universities for one year” (Ritzaus Bureau, 1999a). News reports also stated that “the involved institutions had only a modest interest in entering into an obligation to fund the VUE Center” (Ritzaus Bureau, 1999a). In addition, a department head within the Ministry of Research, Thorkild Meedom, explained, “We could not get sufficient guarantees that the employees would be allowed to continue working” (Nielsen, 1999). By calling off the sale, the minister reduced the risk that the universities dependent on VUE would get a supplier without a long term commitment and appeased VUE Center employees because their jobs would no longer be in jeopardy.

Managing Impressions

The independent investigator, Per Harder, completed his report in April 2000 (Harder, 2000). The report was immediately used to manage impressions as part of the public debate. Specifically, the Minister of Education Margrethe Vestager used the report to promote two views: (1) the ministries were doing the right thing in downsizing VUE and shifting responsibility to the universities and (2) the problems plaguing VUE were not the result of incompetence or gross negligence on the part of

ministry employees.

On the basis of Per Harder's report, Vestager concluded that there would be no cases filed against civil servants. In Denmark, unless a civil servant is shown to have violated the law, he or she cannot be fired. In the case of VUE, no significant wrongdoing was found. In effect, impressions were managed by stating that there was no gross negligence, at least not enough to trigger lawsuits and the dismissal of senior managers. Rather, the major cause of the problems was that requirements had not been sufficiently defined by the universities. In interaction between the exit champions and the media, the original goals and requirements of VUE were characterized as "utopist," and this circumstance was ascribed to the actions and central role of former minister Bertel Haarder in the early period of the VUE project (Ørskov, 1999b).

4.6. Outcome

In early 2000, the VUE Center was closed, and the participating universities initiated new forms of collaboration to ensure continued operation and maintenance of the system by external vendors. Closing the VUE Center effectively de-institutionalized the project, reducing the responsibility of the ministry, and aligning the organizational and economic set-up of the project with the actual commitments from Danish universities to use and further develop a scaled-back system. The VUE project had undergone de-escalation.

In 2003, the salvaged parts of the VUE system were alive and well. The involved universities were still collaborating on purchasing maintenance and operations services from external vendors.. One key informant expressed that the STADS part of VUE had never worked better. Collaborations between universities were also in place for financial services and personnel services (ØSS), and the original system for central administration had been retained with sufficient functionality. By 2007, STADS was being used at all Danish universities except one. VUE, however, "...is simply not used as a concept anymore. It disappeared quickly from the dictionary when the VUE Center was closed..." (WM-data executive).

5. Analysis and Discussion

In this section, we first identify and discuss roles that were present in the VUE de-escalation. Subsequently, we analyze and discuss key role interactions that impacted how de-escalation played out.

5.1. Role Identification

The basis for the role analysis was the inventory of actors and actions during the de-escalation process of the VUE project (Table 3). We used content analysis to identify the underlying roles associated with these actions. As an illustration, when going through the 26 populated cells in Table 3, we found several actions that created road blocks for de-escalation. For example, the small universities and engineering colleges repeatedly stressed their dependence on VUE. We concluded that these actions blocked de-escalation by placing demands on the exit champion and increasing the political cost of complete project abandonment. Consequently, this pattern of actions placed the small universities and engineering colleges in the role of *exit blocker*. In the next analysis step (reported in the following section), we analyzed role interactions. Here, we found that the exit champion worked to accommodate demands from exit blockers (appeal to stakeholders). Therefore, we formulated a proposition to capture this key role interaction. We followed the same process for all cells and actions in Table 3.

Table 3. Actors, Actions and Roles in the VUE Project De-escalation

ACTORS		PHASE 1: PROBLEM RECOGNITION	PHASE 2: RE-EXAMINATION OF PRIOR COURSE OF ACTION	PHASE 3: SEARCH FOR ALTERNATIVE COURSE OF ACTION	PHASE 4: IMPLEMENTING AN EXIT STRATEGY
Universities	3 major	Late 1998: Seriousness of problem recognized.	Early 1999: Organizational and financial structure of VUE needs to change.	1999: (1) selling the VUE Center to a private company, or (2) letting the universities take over VUE.	Early 2000: VUE Center closed. The universities build a new organization responsible for VUE.
	8 others and engineering colleges	Decide not to adopt VUE (news breaks in January 1999). <i>Exit catalyst</i>	Use VUE and express dependence on VUE. <i>Exit blocker</i>	Express continued dependence on VUE. Form procurement group with engineering colleges. <i>Exit blocker</i>	Attempt to form procurement group to purchase VUE. Wary to commit to VUE services beyond one year. <i>Exit blocker</i> Eventually initiate a new organization for maintaining and servicing VUE.
Government Ministries	Education		Asks Per Harder to carry out an investigation of VUE. A key purpose is to determine whether government officials have conducted substantial wrongdoing. <i>Exit champion (management of consequences)</i>	Hands over responsibility for VUE to another Ministry.	States that no significant wrongdoing was found in Harder's study and that no cases would be filed against civil servants. Explains that a very ambitious project was started without sufficient knowledge. <i>Exit champion (management of impressions and consequences)</i> Former minister Bertel Haarder was directly (in media) and indirectly (by current ministers) blamed for the VUE project failure. <i>Scapegoat</i>

Table 3. Actors, Actions and Roles in the VUE Project De-escalation (continued)

ACTORS		PHASE 1: PROBLEM RECOGNITION	PHASE 2: RE-EXAMINATION OF PRIOR COURSE OF ACTION	PHASE 3: SEARCH FOR ALTERNATIVE COURSE OF ACTION	PHASE 4: IMPLEMENTING AN EXIT STRATEGY
	Research	Late 1998: Seriousness of problem recognized. Realize that VUE was becoming a huge financial burden and that present course of action could not be sustained. Assumes responsibility for addressing problems. <i>Exit champion</i>	Early 1999: Organizational and financial structure of VUE needs to change. Minister Trøjborg commissions investigation into VUE. Minister Trøjborg finds that Technical University and engineering colleges are dependent on VUE and some smaller colleges plan to begin using part of VUE. <i>Exit champion</i> (leads investigation effort)	1999: (1) selling the VUE Center to a private company, or (2) letting the universities take over VUE. Decides that universities have to pay for the development work on VUE, not just for its use. Decides to try selling VUE. Tells universities to form procurement group. <i>Exit champion</i>	Early 2000: VUE Center closed. The universities build a new organization responsible for VUE. Minister Birthe Weiss calls off selling VUE and argues that a sale would jeopardize job security of employees working on VUE. <i>Exit champion</i> (management of impressions and exit)
Parliament's Finance Committee		(Receives critical report on VUE from Ivar Hansen and transfers responsibility for VUE from the Ministry of Education to the Ministry of Research, making Jan Trøjborg responsible for the project. <i>Exit sponsor</i>	Exercises pressure on ministers of education and research to redirect VUE. <i>Exit sponsor</i>	Exercises pressure on ministers of education and research to redirect VUE. Agreed to sell VUE. <i>Exit sponsor</i>	
External Reviewers	Auditor General (Ivar Hansen)	Releases report on VUE, very critical toward the system and the Ministry of Education. <i>Messenger</i>	Starts investigation commissioned by the Minister of Education. <i>Legitim�izer</i>		Completes report: No wrongdoing that should lead to filing of cases against government officials. <i>Legitim�izer</i>
	Per Harder				
	Jacobsen & Associates	Conducts review focused on deliverables from WM-data to the VUE center. <i>Legitim�izer</i>			

Table 3. Actors, Actions and Roles in the VUE Project De-escalation (continued)

ACTORS		PHASE 1: PROBLEM RECOGNITION	PHASE 2: RE-EXAMINATION OF PRIOR COURSE OF ACTION	PHASE 3: SEARCH FOR ALTERNATIVE COURSE OF ACTION	PHASE 4: IMPLEMENTING AN EXIT STRATEGY
VUE Project/Center		Late 1998: Seriousness of problem recognized.	Early 1999: Organizational and financial structure of VUE needs to change.	1999: (1) selling the VUE Center to a private company, or (2) letting the universities take over VUE.	Early 2000: VUE Center closed. The universities build a new organization responsible for VUE.
		Hires Jacobsen & Associates to review the project, in particular related to deliveries from WM-data. <i>Exit blocker</i>			
WM-data (S/W Vendor/ Developer)		Announces delay in deliverables. <i>Messenger</i>			
Three outsider companies				Showed interest in buying VUE. <i>Exit catalysts</i>	Guarantee to supply continued services for only one year. Decide that buying VUE is not attractive because they are required to take over all employees. <i>Exit catalysts</i>
General Public and Mass Media		Increasing attention to and exasperation with failing public IT projects. <i>Exit catalyst</i>	Increasing attention to and exasperation with failing public IT projects. <i>Exit catalyst</i>	Sustained exasperation with failing public IT projects. <i>Exit catalyst</i>	Media relays causes for the failure. Media points to former education minister's vision of VUE as "utopist". <i>Exit catalyst</i>

The analysis resulted in identification of seven distinct roles involved in de-escalation: messenger, exit sponsor, exit champion, exit catalyst, exit blocker, legitimizer, and scapegoat. Each of these roles is discussed below and relevant literature is enfolded in the discussion where applicable. Table 4 provides a summary of the key roles in de-escalation.

Table 4. Key Roles in De-escalation Processes	
ROLE	DESCRIPTION OF ROLE
Messenger (Auditor General, Vendor WM-data)	Messengers communicate a problem description concerning the escalating project to appropriate recipients in a way that provides evidence that the current course of action is not a viable strategy for the project, and provides impetus for action to the message recipients.
Exit Sponsor (Parliament's Finance Committee)	Exit sponsors provide the formal authority and the continued pressure that empower and push exit champions to follow through with de-escalation in spite of encountered obstacles.
Exit Champion (Ministers of education and research)	Exit champions actively pursue de-escalation of a faltering project and manage the de-escalation process, including recognizing and drawing attention to the problem, investigating the problem and alternative courses of action, and implementing an exit strategy.
Exit Catalyst (Large Universities, General Public and Media)	Exit catalysts help focus attention on, and give significance to, events that indicate escalation. Through their observation, actions and reactions, exit catalysts contribute to increased emphasis on the problems and make the consequences of maintaining the existing course of action more visible, thus providing or strengthening the impetus for the exit champion to pursue de-escalation.
Exit Blocker (VUE Center, Colleges and Small Universities)	Exit blockers hinder or slow down the de-escalation effort by insisting on the viability or necessity of project continuation and by placing restrictions and conditions on project abandonment.
Legitimizer (Harder, Jacobsen & Associates)	Legitimizers provide trustworthy external observations, assessments and advice on a failing course of action in a manner that exposes escalation and supplies arguments for de-escalation.
Scapegoat (Former Minister of Education Bertel Haarder)	Scapegoats shoulder blame for a failing or failed effort, through actions of their own or unwittingly through actions by others, in a way that lowers to threshold for other actors to pursue de-escalation.

Messenger

According to Keil and Robey (1999), the messenger brings bad news about a project to someone with authority to act. The absence of a messenger is closely related to non-reporting of bad news on organizational undertakings, sometimes labeled as a "mum effect" (Smith et al., 2001) or organizational silence (Morrison and Milliken, 2000).

In the VUE case, the messenger that successfully initiated the de-escalation process was the auditor general, Ivar Hansen, who delivered a highly critical and public report in 1999. Hansen's report was further supported by the vendor WM-data's announcement of delays in deliverables during late 1998 and early 1999. While WM-data did not aim to initiate intense scrutiny of the project, but rather to manage expectations, it still unwittingly played the role of messenger in bringing bad news that was instrumental to de-escalation. Some messengers (such as Hansen) thus resembled whistle-blowers (Keil and Robey, 2001; Near and Miceli, 1985), while others were less deliberate in their actions (such as WM-data).

Although several critical reports from different messengers were provided earlier, de-escalation was not triggered until 1999. This suggests that perhaps the most critical and difficult task for the messenger is to find interested message receivers (Keil and Robey, 1999). This suggests that several roles may be necessary to bring about de-escalation. Without a potential exit sponsor and exit champion, messengers are likely to be ineffective, such as in the Challenger case (Vaughan, 1996). Similarly, the VUE project was not halted in 1995: In spite of negative information on project viability, nobody enacted the exit sponsor or exit champion roles at that time.

Exit Sponsor

The Danish parliament's Finance Committee acted as exit sponsor by expressing persistent interest in the problems plaguing VUE, by providing support (cf. Heng et al., 2003a), and by exercising pressure on the ministers (exit champions) throughout the de-escalation process. The existence of an exit sponsor, separate and distinct from the exit champion, is consistent with the roles of project sponsor and project champion in the IS implementation literature (Lederer and Nath, 1991; Rockart and De Long, 1988).

Exit sponsors provide the formal authority and the continued pressure that empower and push exit champions to follow through with de-escalation in spite of encountered obstacles. As Sauer (1993) points out, project success ultimately hinges on securing and maintaining funding. Withdrawing funding or threatening to withdraw funding are powerful ways for exit sponsors to spur de-escalation.

Exit Champion

The role of exit champion was carried out jointly by the Ministries of Education and Research, and it was enacted under influence of messengers and exit sponsor. The activities included recognizing and drawing attention to the problem, investigating the problem and alternative courses of action, and implementing an exit strategy. In the VUE case, the ministers of education and research were instrumental in managing the de-escalation and the exit of the Danish government from VUE.

According to Royer (2003), de-escalation is unlikely to take place in the absence of an exit champion. Indeed, VUE was questioned early on, but the education minister at that time was highly committed and highly influential, successfully exercising the role of project champion. VUE was in serious trouble as early as 1995, but at that time, there was no exit champion for de-escalation of the project. The presence of a strong project champion and no exit champion hindered the initiation of de-escalation. When de-escalation did occur, the role of exit champion became evident throughout the process. The involved ministers questioned the project and changed its course from their institutional vantage point outside the project.

In accordance with earlier findings (Keil, 1995; Keil and Robey, 1999), external shocks and the discontinuities created by changes of key actors and their responsibilities (ministers and ministry responsibilities) were influential factors in making the ministers for education and research take on the role of exit champion. These changes both removed the original project champion (Education Minister Bertel Haarder) and led to the casting of the exit champion role, creating a situation conducive to de-escalation. Similarly, Royer (2003) found that exit champions were likely to be "new" to the situation rather than enmeshed in the project since its early stages.

In contrast, Pan and colleagues (Pan et al., 2006a; Pan et al., 2004) found that the project champion in their study of an e-procurement project in a UK municipal borough was instrumental in bringing

about de-escalation. They identified as project champion the “E-envoy,” a local government official overseeing e-government initiatives. Unlike project champions studied by Royer (2002; 2003), the E-envoy did not actively participate in project governance until someone blew the whistle (i.e., a messenger); the E-envoy then stepped in to effectuate de-escalation. Thus, the actions of the E-envoy are consistent with the exit champion role.

Pan et al. (2004) also found the continued commitment of the project champion to be important for the de-escalation effort (continued commitment here refers to the *de-escalation* effort—not continued commitment to the escalating course of action). This is consistent with observations of exit champions by Royer (2003) as well as the results of this study. We suggest that the exit champion concept more clearly depicts the role played by the E-envoy in de-escalation of the e-procurement project.¹² The exit champion concept can, thus, reconcile the apparent discrepancies between the findings by Pan and colleagues and Royer and bring their findings in alignment with existing literature (Keil, 1995; Staw and Ross, 1987). Moreover, the exit champion concept helps avoid confusion between continued commitment to *de-escalation* and *escalation* as continued commitment to a failing course of action (Brockner, 1992).

Exit Catalyst

Whereas messengers brought bad news to exit sponsors and exit champions, a different group of actors, the three large universities, had already “voted with their feet” by announcing that they would not adopt VUE. By doing so, they assumed the role of exit catalyst, playing an instrumental part in making the exit sponsor react to the negative news from the messenger. In the IS and organizational change literatures, the word catalyst is often used to denote a circumstance or actor that focuses other actors’ attention on a change process (Bartkus, 1997; Rankin and Golden, 2002; Raschke and Smith-David, 2005).

The role of the exit catalyst is indirect: the catalyst focuses other actors’ attention and action on change rather than being a central actor in that change. The actions of the exit catalyst(s) kept emphasizing the problems and made the consequences of maintaining the existing course of action visible, thus providing or strengthening the impetus for the exit champion to act. This role was initially identified in the first phase of the de-escalation process, but it can also reappear over time. In the VUE case, we see that the general public and media later contributed to the sustained pressure on exit champions to pursue de-escalation and in this way also played a catalytic role. Since our role analysis focuses on impact, not intent, a catalyst need not act purposefully in pursuit of de-escalation.

Exit Blocker

The smaller universities and the technical colleges insisted on the importance of VUE for their administrative processes and stressed their dependence on the continued development and operation of the system. Thus, they performed the role of exit blockers. The exit blockers were most visible in the two last phases, although in the first de-escalation phase, the VUE Center attempted to block de-escalation by hiring external consultants to analyze deliveries from WM-data. Had this tactic worked, it could have been used to deflect criticism from VUE and argue for the continued viability of the project through incremental adaptation of the current course of action (Mähring and Keil, 2008). Managing exit blockers became part of the exit champions’ task portfolio, and was done, for example, by first initiating the selling of VUE, then attempting to form a procurement group of the universities, and finally reforming the procurement group into a maintenance consortium for VUE. These actions can all be seen as attempts to co-opt exit blockers, demonstrating the importance of exit champions addressing the needs of exit blockers.

Exit blockers act to hinder the de-escalation effort by insisting on the viability or necessity of project continuation and by placing restrictions and conditions on project abandonment. There is empirical

¹² It should be noted that the E-envoy’s commitment was never to the e-procurement effort as an independent endeavor, but to the overall e-government effort and that de-escalation only concerned partial abandonment of a subproject to the overall effort. We thank one of the anonymous reviewers for pointing out the nature and scope of the de-escalation effort in this case.

support for this role in the case of the Shoreham nuclear plant (Ross and Staw, 1993), where the closing of the plant by its owner LILCO was counteracted by exit blockers in the form of the US federal government (acting through the Departments of Energy and Justice) and an influential interest group. This case was brought to the U.S. Supreme Court as part of the exit blocking effort and several lawsuits were filed against LILCO. The existence of exit blockers is also supported by the escalation framework developed by Staw and Ross (1987), in which political support and institutionalization are both seen as factors promoting or sustaining escalation.

Legitimizer

Another de-escalation role frequently present in the VUE case was that of legitimizer. This role was played by external consultants and other examiners. These included the lawyer Per Harder (Harder, 2000), and the consulting firm Jacobsen & Associates (Mathiassen et al., 1998). These actors provided external perspectives on the project in several de-escalation phases. We have chosen "legitim�izer" rather than "investigator" because the emphasis is primarily on providing additional arguments for de-escalation. Legitimizing assessments and reports are normally initiated and funded by someone with a specific purpose. Their official purpose is seldom to actively facilitate the de-escalation process. They do, however, provide information and statements that are used to bolster an argument for de-escalation or for a specific exit strategy.

The evidence from the VUE case suggests that the external position of legitimizers is important and is part of their attractiveness for exit champions and exit catalysts. The apparent non-affiliation provides an impression of objectivity and their "statements of facts," therefore, have more credibility than if expressed by actors with vested interests in the project, pronounced interest in its abandonment, or actual or imagined political agendas involving other actors. Legitimizers can also be important in maneuvering to distribute or avoid blame (Heng et al., 2003a).

We found legitimizers to be present in three out of four de-escalation phases. In later phases they were often used by exit champions to help de-escalation by legitimizing a new course of action, managing impressions, or appealing to stakeholders.

Scapegoat

While not previously identified as a role in de-escalation, the role of scapegoat is well known in organizational life (Boeker, 1992; Bonazzi, 1983), and one IS study found that the existence of a possible scapegoat may facilitate bad news reporting in troubled software projects (Keil et al., 2004; Keil et al., 2007). Bertel Haarder, former Minister of Education, was directly and indirectly assigned a substantial part of the blame for the VUE failure: Several of the consultancy reports pointed to the botched start of the project and the elevated ambition level and risks of the original project charter; these findings were repeated in public statements by the ministers of education and research as VUE was about to be scrapped; and the media attributed the failure to the "utopist vision" of Bertel Haarder. His role as scapegoat was cemented in the last de-escalation phase. It should be noted that this scapegoating did not necessarily constitute a fair or balanced distribution of blame.

Bonazzi (1983) distinguished between expressive and instrumental scapegoating. While expressive scapegoating happens as a group looks for ways to release emotional tension, instrumental scapegoating takes place to uphold the legitimacy and existence of social structures (societal institutions, organizational power structures) threatened by a negative event. Instrumental scapegoating takes place when powerful actors assign or shift blame to less powerful actors in order to put distance between themselves and negative events or circumstances (Boeker 1992; Bonazzi 1983). Perhaps the perennial existence of scapegoats is a sign of a universal human need to reduce uncertainty and maintain legitimacy by shifting blame.¹³

Royer (2003) suggested that project champions and exit champions are normally distinct roles,

¹³ The scapegoat term has its origin in the old testament of the Bible, where a ritual is described in which a goat was sacrificed on behalf of the sins of the people. We thank the senior editor for the suggestion to explicate the functions and meanings of the scapegoat.

Table 5. Role Activity during Different Phases of the VUE Project De-escalation

ROLES	PHASE 1: PROBLEM RECOGNITION	PHASE 2: RE-EXAMINATION OF PRIOR COURSE OF ACTION	PHASE 3: SEARCH FOR ALTERNATIVE COURSES OF ACTION	PHASE 4: IMPLEMENTING AN EXIT STRATEGY
Messenger (Auditor General, Vendor WM-data)	✓			
Exit Sponsor (Parliament's Finance Committee)	✓	✓	✓	
Exit Champion (Ministers of education and research)	✓	✓	✓	✓
Exit catalyst (Large Universities, Public and Media)	✓	✓	✓	
Exit Blocker (VUE Center, Colleges and Small Universities)	✓	✓	✓	✓
Legitimizer (Harder, Jacobsen & Associates)	✓	✓		✓
Scapegoat (Former Minister of Education Bertel Haarder)				✓

partly in conflict. As a consequence, forceful project champions of ultimately unsuccessful projects are likely candidates for becoming scapegoats (such as in the VUE case). Transitions from the exit champion role to the scapegoat role would likely be rare, but have been observed (Drummond, 1996). While scapegoating is often seen as detrimental, even pathological, organizational behavior (Ashforth and Lee, 1990), the existence of a scapegoat can facilitate de-escalation of runaway projects, albeit at a price for the actor taking on or being forced into the scapegoat role. In effect, the scapegoat shoulders blame, making other actors more prone to pursue de-escalation (Heng et al., 2003a).

5.2. Role Interaction

Next we analyzed how roles interacted during the phases of de-escalation. Table 5 shows that while some roles were present throughout the process, other roles were important only in some of the phases.

Since role interaction is tightly linked to interpersonal influence, and since it has been suggested that interpersonal power impacts de-escalation (Drummond, 1995), we also addressed what resources or means each role drew upon in order to influence others (Frost and Stahelski, 1988; Raven et al., 1998).¹⁴ To do so, we used an updated version of the seminal French and Raven (1959) framework, identifying six bases of power in interpersonal influence (Raven et al., 1998): reward, coercive, expert, informational, legitimate and referent power (Table 6). We conducted the analysis of power bases by studying the actions observed for each role and coding these based on the type of influence they encompassed. Finally, we formulated propositions on roles and role interactions based on the VUE case, and theorized on their importance for de-escalation.

Table 6. Bases of Power (Based on Raven et al., 1998)

POWER BASES	DESCRIPTION
Reward Power (<i>Personal, Impersonal</i>)	The power to bestow rewards on the target in return for compliance. A reward could either be impersonal (e.g. a promotion) or personal (liking, approval, respect).
Coercive Power (<i>Personal, Impersonal</i>)	The power to force compliance by threat of punishment. This could also be either impersonal or through changes in personal/emotional relationship aspects.
Expert Power	The power to attain compliance on the basis of the agent's expertise.
Informational Power	The power to convince the target through convincing/persuasive material and/or logic.
Legitimate Power (<i>Position, Reciprocity, Equity, Dependence</i>)	The right to prescribe behavior through formal position or to demand behavior by reference to other's obligation. Sub-categories are <i>position</i> (authority), <i>reciprocity</i> (obligation to respond in kind after a previous action by the other part), <i>equity</i> (obligation to compensate for hard work or suffering), and <i>dependence</i> (obligation to take responsibility for someone in need of assistance).
Referent Power	The power to induce behavior by referring to or relying on the target's identification with the influencing agent.

The critical movement from escalation to de-escalation in the VUE project manifested itself as a tipping point (Gladwell, 2000), which was reached when a messenger managed to engage an exit sponsor in problem recognition (Montealegre and Keil, 2000). By communicating bad news about a project, messengers exercise informational power and expert power (Raven et al., 1998). However, for the messenger's actions to be effective, there must be actors willing to enact the role of exit

¹⁴ We thank the senior editor and two anonymous reviewers for pointing us to the value of including an analysis of power related to the roles.

sponsor, and these actors must have sufficient authority (legitimate position power, Raven et al., 1998) and no serious role conflicts related to the escalating project (Grover, 1993; Keil, 1995; Royer, 2003). In the VUE project, the Danish Finance Committee was receptive to bad news, it was in a position of strong authority, and it occupied no leading role in the project. The task of the Finance Committee was to monitor the actions of the ministries; for the committee VUE was one project among others. Thus,

Proposition 1: *Initiation of the problem recognition phase of de-escalation is more likely when a messenger effectively communicates with an actor willing and able to take on the exit sponsor role.*

Royer's (2002; 2003) study indicated that an exit champion may also be instrumental in the initiation of de-escalation. Like exit sponsors, exit champions should, in order to be committed to de-escalation, have no serious role conflict related to the escalating project (Keil, 1995; Royer, 2003; Staw and Ross, 1987). In the VUE case, it was the active commitment and engagement of exit champions that made the de-escalation process take off. The exit champions were instrumental in recognizing and drawing attention to the problem, investigating the problem and alternative courses of action, and subsequently implementing an exit strategy. In so doing, they interacted with other key actors making use of different bases of power (Raven et al., 1998), including legitimate power (decisions and actions that relied on their ministerial positions), coercion (threat of withdrawing funding), and informational power (informing actors about decisions and requests by the exit sponsor as well as about emerging problems). Since the exit champions were ministers with significant influence over government policy concerning higher education institutions, they had reward and coercive power over these institutions because of their influence over future resource and policy decisions affecting them (Raven et al., 1998).

In the VUE case the ministers of education and research came to occupy the role of exit champion as a result of considerable pressure from the exit sponsor (legitimate position, reward, and coercion power, Raven et al., 1998). The exit sponsor (the Finance Committee) played a significant role in the de-escalation process because it controlled the purse strings, and it could pressure as well as support the exit champion. The exit champions subsequently played critical roles by taking leadership of the de-escalation effort. Thus,

Proposition 2: *The problem recognition phase of de-escalation is more likely to proceed without interruption when both exit champion and exit sponsor roles have been instantiated.*

However, the exit sponsor and the exit champions were not moving the de-escalation forward on their own. In VUE, we found that exit catalysts and legitimizers played instrumental roles in encouraging re-examination of the prior course of action (Montealegre and Keil, 2000). The exit catalysts helped focus the attention of the exit sponsor and exit champions on the non-viability of the project (informational power). The legitimizers provided the exit champions and exit sponsors with political cover, facilitating the search for alternative courses of action based on insights from well-respected neutral parties outside the organization (expert and informational power, Raven et al., 1998). Put differently, exit catalysts draw attention to the burning platform, while legitimizers help map out the escape route. The exit catalyst and legitimizer roles were enacted by several actors (see Table 3 and Table 4). Thus,

Proposition 3a: *The de-escalation process is more likely to advance to re-examination of prior course of action when the voices of the exit champion and exit sponsor are reinforced through the visible actions of exit catalysts.*

Proposition 3b: *The de-escalation process is more likely to advance to search for alternative courses of action when the exit champion and exit sponsor are able to enlist legitimizers to actively support de-escalation activities.*

We also found that exit blockers existed throughout the escalation phases of the VUE project. However, these exit blockers were in relatively weak positions and dependent on, or controlled by, the exit champions. Still, exit blockers used the power they had, by referring to their dependence on the STADS part of VUE and by demanding to be properly treated because of what they had sacrificed for

the project (legitimate equity and legitimate dependence power, Raven et al., 1998). While exit blockers posed no significant threat to the de-escalation process as a whole, their actions probably influenced de-escalation so that the final solution included retaining the STADS system.

Exit blockers might draw upon additional bases of power and exercise more power in other cases. As a result, it might be the relative balance of power between exit blockers and exit champions and sponsors that determines whether a project is successfully transitioned from escalation to de-escalation (Drummond, 1995). In VUE, the successful transition to implementation of an exit strategy was facilitated because the original project sponsors and champions were no longer around to push for continuation as exit blockers (Royer, 2003). Also, the exit champion actively addressed the concerns of the small universities and technical colleges, thus minimizing any threat they posed as exit blockers. Thus,

Proposition 4a: *The de-escalation process is more likely to move forward toward active implementation of an exit strategy if the original project sponsors and champions do not engage as exit blockers.*

Proposition 4b: *The de-escalation process is more likely to move forward toward actively implementing an exit strategy if the exit champion addresses the concerns of exit blockers.*

Our analysis also suggests that the successful completion of the de-escalation effort was facilitated by having an actor occupy the role of scapegoat. In the VUE case, the scapegoat role was forced upon former minister Bertel Haarder in an emergent fashion through several consultant reports and eventually through the media's attribution of the failure of VUE to his "utopist vision."

To the extent that any power is exercised by the scapegoat, it can perhaps be called "reverse referent power"—a power related to distancing oneself from what the scapegoat stands for by placing an actor in the scapegoat role (Bonazzi, 1983; Eagle and Newton, 1981). Thus,

Proposition 5: *The completion of the de-escalation process is facilitated by one or more actors being placed in the role of scapegoat.*

Table 7. Bases of Power Employed by Roles in the VUE Project

ROLE	BASES OF POWER TYPICALLY EXERCISED BY ACTOR
Messenger (Auditor General, Vendor WM-data)	Informational Power Expert Power
Exit Sponsor (Parliament's Finance Committee)	Legitimate Power (position) Coercive Power (punishment)
Exit Champion (Ministers of education and research)	Legitimate Power (position) Reward Power Coercive Power Informational Power
Exit Catalyst (Large Universities, General Public and Media)	Informational Power
Exit Blocker (VUE Center, Colleges and Small Universities)	Legitimate Power (equity, dependence)
Legitimizer (Harder, Jacobsen & Associates)	Informational Power Expert Power
Scapegoat (Former Minister of Education Bertel Haarder)	"Reverse Referent Power"

In sum, our analysis indicates that de-escalation is not only facilitated by enactment of certain roles but also by certain role interactions that help move the process along. Furthermore, actors favoring de-escalation were, in the VUE case, able to rely on bases of power that together tipped the scale in favor of de-escalation. Table 7 provides a summary of bases of power utilized by actors enacting different roles in the VUE de-escalation.

6. Conclusions and Implications

Prior to discussing the conclusions and implications of our study, it is appropriate to touch on its limitations. The outcomes from case-based research are not usually statistical generalizations but analytical generalizations (Yin, 2003). According to Lee and Baskerville (2003), theory-informed “rich insight” from single-case analysis constitutes a valid and adequate form of generalized knowledge. Since our analysis has drawn upon a rich case as well as on theoretical contributions from earlier studies, there is a basis for expecting that the observed roles and interactions will occur in other cases, although not necessarily in exactly the same way. VUE was a large, multi-year project involving many different public sector organizational entities. In other cases, the number of roles involved may depend on circumstances such as project size and scope; some IT projects may exhibit considerably more uncertainty and complexity than others (Iivari, 1990); and infrastructure projects and standard ERP implementations may experience less variation in results than traditional application development projects. Thus, our findings have to be assessed and used with some caution depending on context and conditions. Another limitation of our study, inherent in many escalation and de-escalation studies, is that most data were collected retrospectively. We addressed the resulting risk for bias in our data through first-hand observations by one of the authors and triangulation among different data sources.

6.1. Contributions

Our goal was to investigate key roles and role interactions during IT project de-escalation. Based on data from the VUE project, we identified seven key roles involved in de-escalation: messenger, exit sponsor, exit champion, exit catalyst, exit blocker, legitimizer, and scapegoat. Five of these roles had not been previously identified. We also analyzed role interaction patterns and interpersonal influence related to roles and forwarded five propositions on how to advance de-escalation. Together, the findings help fill an important gap in our understanding of how actors make de-escalation happen in runaway IT projects.

Our results also resolved what appeared to be a contradiction between findings by Pan and colleagues (Pan et al., 2006a; Pan et al., 2004) and prior studies on escalation and de-escalation (Keil, 1995; Royer, 2003; Staw and Ross, 1987) concerning the role of the project champion in de-escalation. Although not a purpose of the paper, we also found that the sequence of events in the VUE project was consistent with the Montealegre and Keil (2000) de-escalation process model.

A key insight from the research is that the existence and enactment of *several roles*, as well as *specific role interactions* facilitate de-escalation. Therefore, exit champions are not “lone rangers”; they are members of a complex and dynamic set of roles that bring about de-escalation through interactions over time in a particular social context. This finding contrasts with Royer’s (2003) depiction of exit champions as the sole architects and executors of de-escalation.

Specifically, we found that problem recognition is facilitated by messengers communicating effectively to would be exit sponsors. Exit sponsors, in turn, can engage exit champions to drive the process forward. Exit catalysts and legitimizers were instrumental in facilitating re-examination of the previous course of action and searching for alternative courses of action. While these interactions helped initiate the process and facilitated continued de-escalation efforts, exit sponsors and scapegoats also played important roles. Exit blockers expressed needs that could potentially hinder the de-escalation process, and the exit champion addressed the interests of the exit blockers so as to allow de-escalation to proceed. Project sponsors and project champions were not found to enact any de-escalation role in the studied case.

We do not suggest that all seven roles necessarily occur in all de-escalation situations, or that the five propositions cover all important interactions in successful de-escalation efforts. However, the proposed roles shed light on the complex and highly uncertain nature of IT-project de-escalation and the proposed role interactions that facilitate progression through the phases of de-escalation (Montealegre and Keil, 2000). Consequently, it is neither enough to know the script, i.e., the phases and actions of de-escalation, as expressed in the Montealegre and Keil model, nor enough to have an exit champion, as suggested by Royer (2002, 2003). To bring about de-escalation, several actors need to assume and enact specific roles and interaction patterns.

6.2. Implications

We believe that the role perspective is highly useful for understanding de-escalation processes and explaining why they unfold in certain ways. For future research, we suggest empirical investigation into different settings and circumstances (e.g., project size, number of involved parties, organizational contexts, loci of reasons behind de-escalation) as a means for validating and further developing our contributions. Our study also raises the question of whether roles should be included in other process theories within IS. For example, process aspects of escalation have been sparsely studied, and a role perspective might prove valuable in advancing that area of research.

Another interesting aspect concerns the overlapping role combinations that can co-exist in organizations. Such a “multiplex role system” (Valcour, 2002)—for example, between runaway projects and their corresponding de-escalation efforts—would add complexity to the study of de-escalation. Indeed, the embedded nature of intra-organizational IT projects strongly suggests that multiplex roles are likely to exist and influence project execution during de-escalation. Such studies could shed further light on various types of role conflicts (Grover, 1993) that create barriers to initiating and carrying out de-escalation of runaway IT projects. Future studies could also further expand how de-escalation processes are impacted by socio-political issues such as power, politics, and responsibility (Backhouse and Dhillon, 1996). In so doing, dynamic analyses of how roles gain and lose influence and how shifts in the balance of power impact the transition from escalation to de-escalation would be particularly interesting. Yet another interesting research opportunity would be to study de-escalation and its involved actors using actor-network theory, as has been done for escalation (Mähring et al., 2004).

Our findings have practical implications for intervention into runaway projects to facilitate de-escalation. Actors considering reporting bad news about a runaway project (thus enacting a messenger role) are more likely to be successful if they identify actors who are likely to be receptive to hearing bad news and to act upon it, playing the role of exit sponsor. Potential messengers may also improve their chances by building alliances with actors that can serve as exit catalysts and legitimizers, and by couching their message in a form that includes a rationale for de-escalation and a proposed way to initiate de-escalation. Our study also strongly suggests that in the absence of a would-be exit sponsor with sufficient means of influence and no conflicting project roles, a messenger is unlikely to be effective.

For actors enacting the exit sponsor role, it is important to identify and engage an exit champion to drive the process and to continue exerting pressure and provide support for the exit champion's effort. The actor functioning as exit champion is advised to identify potential exit blockers early and consider to what extent it is feasible, desirable, and necessary to address their needs and concerns (Brunsson, 1985; Ross and Staw, 1993). If exit blockers' concerns cannot be addressed, the exit champion may have to take steps to discredit the arguments and opinions of the exit blockers by presenting independent investigations of the consequences of staying the course. The study suggests that exit champions can use legitimizers at several phases of the process and that alliances with exit catalysts can be utilized to support the de-escalation initiative. Finally, the exit champion should be aware of the role of scapegoats in successfully bringing de-escalation to completion.

From a general perspective, fostering an organizational climate that is conducive to reporting bad news about IT projects (Tan et al., 2003) and rewards redirection or abandonment of runaway

projects is likely to increase the willingness of people to take on roles as messenger, exit sponsor, and exit champion. Furthermore, the existence of a potential exit sponsor in the form of a higher authority not entrapped in commitment to an escalating project (such as the Parliament's Finance Committee in the VUE case) might provide a mechanism for "curbing the enthusiasm" of actors trapped in escalation, thereby facilitating the scripting, casting, and enactment of de-escalation.

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Appendix A: Sample Interview Guide

Guide for interview conducted November 14, 2003, with former managing director of the VUE Center

VUE Center

- Could you please tell us about the VUE Center; its background and the work that was conducted in the VUE center?

Interview Person

- What did your work at the VUE center encompass?
- What was your role in the VUE Center?

The VUE Center in the VUE project

- When did the VUE Center enter into the picture in the VUE project?
- Can you point out some important events on this timeline seen from the point of view of the VUE Center?
- What role did the VUE center play?
- Seen from outside you (the VUE center) seems to have had a strong interest in continuing the project and – if possible – making it a success. How did you conduct that role?

Important Events

- Could you please identify and describe some important events that influenced the involvement of the VUE Center in the VUE project?
- When and how did you initiate your withdrawal from the project? – Examples of concrete actions?
- What happened during the time when the VUE Center was closed down?

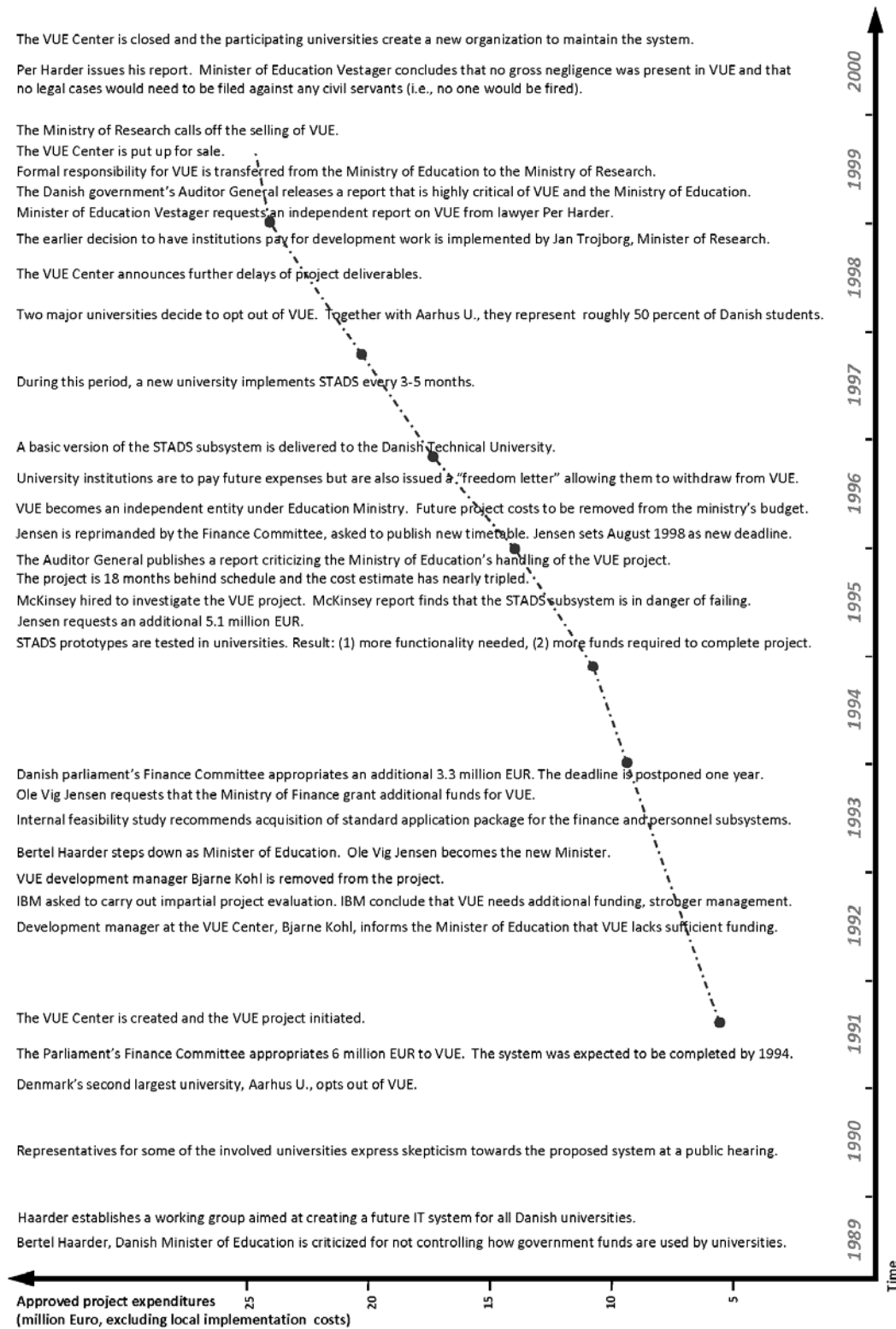
The other stakeholders

- How did you view the software supplier in relation to the de-escalation of the project?
- How did you perceive the role of the Finance Committee?
- How did you perceive the role of the Ministry?
- How did you perceive the role of the Customers, i.e. the universities?

Afterthought

- Are there things you would have done differently today? Moments where you did not act but should have, for example?

Appendix B: Escalation and De-escalation of VUE



About the Authors

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Mark Keil is the Board of Advisors Professor of Computer Information Systems in the J. Mack Robinson College of Business at Georgia State University. He holds a joint appointment in the department of computer science. His research focuses on software project management, with particular emphasis on understanding and preventing software project escalation cases in which projects seem to take on lives of their own, continuing to absorb valuable resources without ever reaching their objectives. His research is also aimed at providing better tools for assessing software project risk and removing barriers to software use. Keil's research has been published in *MIS Quarterly*, *Sloan Management Review*, *Communications of the ACM*, *Journal of Management Information Systems*, *IEEE Transactions on Engineering Management*, *Decision Support Systems*, and many other journals. He currently serves on the editorial boards of *Decision Sciences* and the *Journal of Management Information Systems*. In the past, he has served as an Associate Editor for *MIS Quarterly*, as Co-Editor of *The DATA BASE for Advances in Information Systems*, and as an editorial board member for *IEEE Transactions on Engineering Management*. He earned his bachelor's degree from Princeton University, his master's degree from MIT's Sloan School of Management, and his doctorate in Management Information Systems from the Harvard Business School.

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