WHEN RISK MANAGEMENT IS NOT ENOUGH: PROJECT MANAGERS' EXPERIENCES WHEN CONFRONTED WITH THE UNEXPECTED

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***Abstract**. Some organizations try to manage complexity by transferring it into defined, controllable structures and processes, aiming at delivering outcomes in a predictable and reliable manner. Others trust a high degree of freedom at the shop-floor and team level allowing for quicker decisions and self-determined choice to successfully respond to unexpected events. This paper explores the questions "What are organizational conditions and what course of actions allow project managers to handle unexpected turbulences satisfactory?" Empirical findings on both organizational cultures and structures, and a set of typical routines for managing unanticipated situations using eight case vignettes are presented. Results show that successful project-oriented organizations tend to relax structures and empower teams when confronted with sudden events in the detection phase. Once the decision on actions needed to address the turbulence is made, smart organizations swiftly rebound to formalized hierarchies and clear communication structures in the recovery phase, allowing for quick and coordinated action. Thus, combining centralization with decentralization along the timeline of resilient action is one of the cornerstones to smart project organizing.*

***Keywords**: The unexpected; project resilience; organizational culture and structure; case vignettes.*

Introduction

Risk is calculable, and predictions can be expressed by a statistically or mathematically determined probability (Acebes, Pajares, Galán & López-Paredes, 2014). Uncertainty, on the other hand demarks events in the future that are unknown, and/or their consequences cannot be estimated. Uncertainty, when transferred into calculable risk, seems to be manageable in standardized and formal processes (Machina, 1987; Zhang, 2011). Traditional project risk management approaches are rational and sequential, following a control-and-order logic. Thus, some organizations increase direct control, reduce trust and transparency when faced with project turbulences (Loosemore, 1998; Söderholm, 2008). Only recently this control-oriented stage-by-stage approach has been challenged (Brady, Davies & Nightingale, 2012). De Meyer, Loch and Pich (2002, p.61) require project management 'to go beyond traditional risk management, adopting roles and techniques oriented less toward planning and more toward flexibility and learning.' Following this proposition, organizations react with elasticity, such as agile project work, ad hoc teams and expert pools, fluid and adaptive structures (Geraldi, Lee-Kelley & Kutsch, 2010).

Winch (2010, Winch & Maytorena, 2012) coined the spectrum of growing uncertainty by the labels of known knowns, known unknowns and unknown knowns. Ultimately,

unknown unknowns demark the passage from uncertainty to the unexpected. For surprising situations that long for a long-term reaction, organization will have enough time to search for additional information, calculate by advanced analysis methods, and plan in-depth and in advance (Duchek & Klaußner, 2013). Here, traditional risk management will be sufficient. However, issues become more complicated in case of urgency. When risk management is not enough, new procedures must be implemented to manage the unexpected.

In this paper, I explore the question "What organizational preconditions allow project managers to handle unexpected turbulences satisfactory?" I will present empirical findings on both organizational cultures and structures that support effective management of the unexpected and outline a set of routines for managing unanticipated situations utilizing eight case vignettes based on interviews with practitioners.

Handling the unexpected in project management

The unexpected is that event, that one does not expect – that sounds trivial. Inspired by social construction theory (Maturana, 1982; Foerster, 1984) I insist that the expected and hence the unexpected are not entities in themselves, but are "produced" by and from the perspective of an observer, either an organization, an employee or a team. The unexpected can only be understood in relation to an observer. Observations are not deliberate, however; they are structured. Within organizations strategy, organizational rules, culture and so forth define what can be expected and what is unlikely. The unexpected reflects "the actuality of projects as social processes requiring ongoing construction of the appearance of certainty and clarity in the midst of complex uncertainty and ambiguity" (Atkinson, Crawford & Ward, 2006, p.696).

Perminova, Gustafsson, and Wikström (2008, p.74) claim that the exposure to uncertainties requires an open approach less oriented towards planning: "Projects are better described as journeys of exploration in given direction, rather than strict plan-following endeavors". Managing uncertainty in projects is based on experience: being explorative, associative, sensual and in intense relation to the project environment (Heidling, 2015). Atkinson, Crawford and Ward (2006) suggested that uncertainty management asks for trust building, sense making, organizational learning, and an appropriate organizational culture.

Saunders, Gale and Sherry (2016) and Saunders (2015) analyzed project management responses to project uncertainty taken from high-reliability practices. In their empirical study on civil nuclear and aerospace projects, they found out that project manager adopted high-reliability practices for managing uncertainty in projects, inter alia with regard to an open and no-blame learning culture, decentralized decision-making processes and mindfulness. However, some of the practices were fragile, with structural factors, such as complex ownership structures or short-term incentive mechanisms, threatening high-reliability project organizing.

Johansen, Halvorsen, Haddadic and Langlo (2014) developed a nine-step framework for identifying, analyzing and managing uncertainty. According to Johansen (2015), project team members should be entitled and even stimulated to express their concern in regular uncertainty analysis workshops. It is important that project owners become actively involved in managing uncertainty in projects with a „hands on" rather than a

„hands in" attitude. Learning and knowledge creation are seen as essential parts of uncertainty management, which need to be followed systematically in a supportive, dynamic reflective process.

Recent developments in the organization of work such as agile and lean project management, design thinking, holacracy or the open-source movement are proposing non-traditional ways of coordination to deal with uncertainty as a central feature for projects. These approaches tend to replace foresight and avoidance by consciously allowing for insecurity in favor of a look forward (Drury, Conboy & Power, 2012). Within these structures, accountability for the work is shared and knowledge is more important than authority. As all these forms are short cyclical and inspire participative and responsive structures (Bernstein, Bunch, Canner & Lee, 2016), this allows for a more flexible approach towards managing uncertainty. A no-blame culture and high transparency ensure permanent and joint learning.

Methodology and sample description

This paper presents results from an empirical study conducted in Austria in spring 2018. P-M-A[1] members and project managers found in the university database were invited to respond to an online-based screen-and-keyboard interview.[2] Despite the call for theoretical sampling in qualitative research (Yin, 2014; Strauss & Corbin, 1990), responses and thus cases are based on self-selection for practical reasons. Still, we ended up with a quite diverse sample, allowing discovering commonalities and differences, and generalization by type formation. Controlling for structural variables encourages the presumption that the vignettes show exemplary value.

The first part of the semi-structured online questionnaire centers on dealing with uncertainty in a distinctive project, asking for the project managers' experiences and actions in this situation. This part roots on a framework combining two dimensions of consideration: The social dimension comprises the project manager, the project team, and other stakeholders, the time-related dimension unfolds along the occurrence of the unexpected: before, during and after the event. Ultimately, we demanded respondents to assess, whether turbulences could be properly handled by actions taken. Results of the first part of the interviews are summarized as cases vignettes.

A second part concentrates on the embedding of the projects into the organization along the dimensions provided in literature. We expected results to refer to influences on the course and outcome of the project in the dimensions of project orientation, project environment, project sensitivity and mindfulness, project design, project team and project knowledge (Borgert, 2013; Saunders, 2015).

We asked the respondents to assess the organization's overall structural characteristics in the dimensions of (oriented to Bleicher, 1970):
- formalization grade (high – low)
- distribution of decision-making power (central – decentralized)
- decision-making process (individual – collegial)
- information relations (bilateral – multilateral)

[1] Project Management Austria (P-M-A) is the Austrian Member Association of the IPMA.
[2] Interview guide construction and data collection were conducted by Edgar Weiss, Iris-Schirl-Böck, and the author, all UAS BFI Vienna.

To determine organizational culture, we employed the two dimensions spanning Deal and Kennedy's (1982) typology: speed of feedback vs. readiness to take risks. Moreover, we asked the respondents whether the organization they work for defines itself as project-oriented organization. A final set of questions inquired on the organization's and the project manager's demographics (Table 1).

We ended up with eight usable vignettes of incidents and companies, all of them ranked as large enterprises (more than 250 employees). All of the respondents display long term and international experience as project managers; most of them having an additional function within their company besides managing projects.

Respondents of case 1 to 4 reported that the organization/project was able to handle the unexpected turbulences successfully, while case 5 to 8 where deemed to be failing to manage the incidents properly.

Table 1. Sample description (own source)

Characteristics	Case 1	Case 2	Case 3	Case 4
Industry	IT	Consulting	ICT	IT
Project-oriented org.	Yes	Yes	Yes	Yes
Experience as PM (years)	28	12	20	20
Additional functions	Cadre	Staff	Expert	None
Gender	Male	Male	Male	Male
Age group	40-49	40-49	50-59	50-59

Characteristics	Case 5	Case 6	Case 7	Case 8
Industry	Telco	Services	IT	Electronics
Project-oriented org.	No	No	No	Yes
Experience as PM (years)	15	20	15	10
Additional functions	Manager	Staff	Cadre	Expert
Gender	Male	Male	Female	Female
Age group	50-59	50-59	40-49	50-59

Findings

Those organizations that reported to handle turbulences more satisfactory are characterized by a higher formalization grade and more bilateral information relations; the decision-making power is more centralized and the process more individually organized. This is in line with the observation in the data that efficient, organized and centralized communications after decision-making prevails – but not in line with previous research. Even more so, contrary to literature no systematic relation between positive project orientation, awareness of the project environment, project sensitivity and mindfulness, project design, project team openness or shared project knowledge on the one hand and successful handling of the unexpected could be found.

The well-known matrix of culture types by Deal and Kennedy spans a 2x2 matrix between the dimensions of the degree of risk associated with a company's key activities and the speed at which companies learn whether their actions and strategies are successful. In this study, the typology of readiness to take risks and the speed of feedback allowed to identify clear-cut categories and to place the vignettes with the matrix (figure 1).

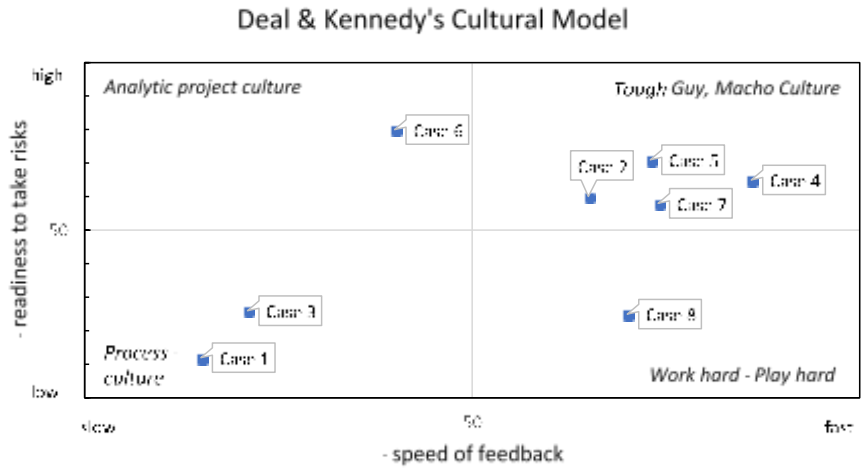

Figure 1. Position of cases within Deal and Kennedy's cultural model (own illustration based on Deal & Kennedy, 1982)

Process cultures

Process cultures (bureaucracies) are characterized by low risk, i.e. errors hardly occur, and if so, they do not cost much. Rules are carefully followed in the absence of effective determination and controls for success. Two of the cases resemble process cultures.

Case 1 features a worldwide rollout of a new server infrastructure for a customer after outsourcing; the project is very complex, external, very large, and international. Turbulences started with new regulations within the own company, which had to be applied immediately to the current project – and this is a challenge especially for process cultures. The project manager got aware of problems when releases for much-needed hardware orders were kept back. Both the project manager and the project team faced and analyzed the situation. It was the project manager alone that made the ultimate decision to comply with new processes and to exert political influence on the necessary decision-makers in the root organization, but with justification to and information of the team. The decision was actively supported. The interview partner named keeping calm and communicating as key success factors. According to the project manager, the turbulence could be handled to the utmost satisfaction.

Case 3 is about computer hardware. The project is complex, internal, medium large, and national. Turbulences embarked, as the customer was suddenly no longer available because of reorganization. Thus, requirements were partially implemented. Actually, the project manager was formally informed by the parent organization that the project principal is no longer available. Loosing clear-cut direction on „What and how do we continue?" leaves process cultures in distress. It was the project manager who was affected in the first place, and he, together with the customer, analyzed the problem and decided for a project re-and de-scoping together with the new project client. With this decision actively supported by the team, the turbulence could be handled in a very good way. Named key success factors were a long-term PM experience and cooler head, rational thinking and social skills.

Tough-guy, macho cultures

Individualists who enjoy risk-taking and who get quick feedback on their decisions will dwell in tough-guy, macho cultures. This is an all-or-nothing culture where successful employees are the ones who enjoy excitement and work very hard to become stars.

Case 2, a consulting company, is a prototype of this culture. In a complex, external, very large, international consulting project for a large international energy company, the task was to implement energy efficiency measures. Strategic decision by the client to close nearly 1/3 of sites and to significantly renew and automate the infrastructure of the others ignited the turbulences. The energy efficiency project was cancelled, instead an automation and therefore personnel reduction project was implemented. The project manager identified the problems through repeated discussions with the customer representatives: Suddenly, talks centered around another program spread and which immediately attracted attention. While detected and analyzed by the project manager and the team, the ultimate decision was made by the project steering committee together with the customer, but with justification to and information of the team. First, the project has been postponed until the planning results of the automation project were clear, then, a reduction of scope in the energy efficiency project was communicated. Ultimately, the project was cancelled with the consulting company paid for the previous services. The key success factors named by the respondent very much questions the efficiency of the though-guy culture: Significantly reducing risk appetite; writing is much more important than verbal agreements; proactively asking when decisions are delayed; discussing concrete solutions, not the problem; keeping cool. In line with the cultural features, the project was coined a full success from the viewpoint of the consulting company, despite it was cancelled.

Case 4 shows a quite regular start of a project in competitive settings: Implementation scope of the complex, external, medium large and national project was agreed with the customer only in the pre-phase, but the implementation time and the budget have already been fixed before. Turbulence commenced from the contract creation phase on, as product sheets of hardware and software were defined as part of the contract, but some of the functions of the software were not suitable. The identification of the technical troubles involved both the project manager and the team plus discussions with external specialists. These experts were also involved in analyzing the problem and making suggestions, while the decisions to search for alternative solutions, rescheduling and additional resources rested with the project manager and team experts together with the steering committee. Key success factors for handling the turbulences to the satisfaction of the project manager where flexibility in action, rapid integration of the management, and stability in project management and communication.

In Case 5, turbulences could not be dealt with to the project manager's satisfaction. The aim of the very complex, external, very large and international project was the modernization of a mobile network. Minor quality of construction companies and hardly defined processes caused problems for the project manager and the team. These were analyzed by the project manager, and the decision based on proposals from the team were measures for quality and process improvements. While the decision was actively supported by the team improvements were still low. Learnings were to keep calm, follow a structured approach, and take time to reflect and plan.

Case 7 also failed to solve the turbulences in a proper manner. The medium complex, external, medium large, national IT project had turbulence with a supplier. Identified by the project manager, she analyzed the issue together with team experts and decided after involvement of others before decision.

Analytic project culture

Bet-your-company cultures, as it was originally coined, are characterized by high risk and low or slow feedback. The result are activities that record and reduce risk. Because the need to make the right decision is high, the culture is long-term focused with a collective belief in the need to plan, prepare and perform due diligence at all stages of decision-making. I will thus rather call them analytical project cultures.

Case 6 is an IT project devoted to making improvements to the mainframe to ensure ongoing and future operations. This is an external, national project of medium complexity and size. Problems stem from lacking acceptance despite clarification with the technical decision-makers before the implementation start. This led to a long delay in the implementation phase and stakeholder dissatisfaction. It was the project manager to identify and analyses the trouble and to decide on solutions based on proposals from the team. Unable to handle unexpected issues and deviations from plans, as is common with analytic project cultures, the organization was ultimately not able to deal with the turbulence properly, despite the decision being actively supported by the team.

Work hard - Play hard

The work hard, play hard features low risk and rapid feedback. Employees are risk averse; however, the feedback on how well they are performing is almost immediate. Employees in this culture have to maintain high levels of energy and stay upbeat. Stress is coming from quantity of work rather than uncertainty.

Case 8 is less an example for work hard - play hard cultures but better understood as a project in a high competitive market: Here, stakeholders systematically and intentionally under-estimate project costs and are over-optimistic about project benefits and schedule in order to get the projects approved (Sanderson, 2012). The medium complex, external, medium large, international customer project was won with a high competitive offer. Compared to the original estimates, the project management effort was greatly reduced, the effort for customer workshops was far too low. Already in the first weeks, it became clear that the project was not feasible within budget and time. On the one hand, the customers insisted on adherence to the schedule, but on the other hand, they were not able to persuade their own employees to work efficiently. The project manager soon identified these issues and analyzed it together with external experts. The project sponsor and the project steering committee decided to re-calculate, and to order overtime and weekend work. Contradictory arrangements, detailed records, receivables and counterclaims followed, crisis meetings led to tight-knit controlling. Ultimately, the project was called to a halt. Contrary to all the other projects, communication even after the decision was very inefficient and very chaotic.

Discussion

In the case reports no systematic connections between successful handling of the unexpected and features normally ascribed to resilient organizations, i.e. orientation towards the environment, sensitivity and mindfulness, higher readiness to accept diversity and equality in the team, were found. Even more so, successful organizations are overall characterized by a higher formalization grade, decision-making is centralized and individualistic, and bilateral information relations prevail. In addition, not just the complex projects were most likely to fail, as predicted by literature (Sanderson, 2012; Saunders et al., 2015). To some extent, the missing nexus can be explained by the fact that all organizations studied ranked very high on the respective dimensions of resilience orientation mentioned above. Now, is literature wrong to suggest this correlation, or is my dataset weak? However, organizations that defined themselves as project-oriented are more apt to manage sudden incidents. We did not explicitly ask for structural or strategical characteristics of project-oriented organizations (PM methodology, PMO, PM standards a.s.o.), so the study might fail to see the role of structured and formal instruments of project management. Nevertheless, based on answers to more general questions all organizations seem to have the appropriate PM-institutions and instruments at their disposal.

Looking more closely to the vignettes, data suggests a more convincing answer. Project-oriented organizations are not more successful in handling sudden events because they show typical instruments and institutions of project-oriented organizations, but because they respond smarter by making a flexible use of these characteristics. I found that smart project managers used to integrate the team in both the detection and analysis phase and in the preparation of the decision. Moreover, turning to experts obviously did not improve results. Contrary to the rather flat and empowering features in the coping phase, communication after the decision how to proceed was very efficiently organized and centralized again. Obviously, organizations managed swiftly to adapt their style of management to the needs of the situation.

This behavior is in line with recent insights in research on organizational resilience (Barton & Sutcliffe, 2017). Välikangas (2010), Hamel and Välikangas (2003) define resilience as the ability of a system to resist major changes and thus endure perturbation without systemic change, while Ortiz-de-Mandojana and Bansal (2016) stress the organization's ability to sense and correct maladaptive tendencies and cope positively with unexpected situations. Summarizing, organizational resilience is the ability of the organization to rebound from adverse and unexpected situations towards the right path to success. When being confronted with the unexpected, resilient project managers, project teams and the organization align their actions along the timeline: (1) anticipation, (2) detection, (3) recovery and (4) adoption. I will concentrate on the second and third phase.

In the cases, I find proof for the hypothesis that the unexpected – or at least the surprising momentum of the unexpected – depends on the observer. The surprising occurs mainly in those areas, which run counter to the basic assumptions of the respective organizational culture. Expectations can develop into blind spots where unexpected events can develop and become unmanageable (Weick & Sutcliffe, 2007). For example, process cultures were challenged by new and quick to implement regulations, and loss of clear-cut direction. Tough-guy cultures took the risky road by ill-

defined project charters, and analytic project cultures had troubles to handle unexpected issues and deviations from plans.
In the phase of detection, individuals, the team and the organization focus on traces of the unexpected by the application of a wide range of tools, including weak signals. Questioning known routines is crucial in this phase, and this might explain why project managers in complex projects are better prepared to handle the unexpected. Put simply, they are readier to expect the unexpected, while in simpler contexts they might stick to their well-trained routines for too long. Barton, Sutcliffe, Vogus and DeWitt (2015) talk about a-normalizing, taking proactive steps to become attentive to deviations, to understand them better and more fully, and to be less attached to history.

Coping starts with accepting the unexpected. While not every unexpected event triggers a crisis, the potentially threatening unexpected that requires a short-term response breaks up the organization's normal operations. Especially for stable organizations and strong organizational cultures, accepting a serious problem or a potential crisis is difficult. Denying and repressing the need for change are common mechanisms. The final stage of the detection phase is sense making (Weick, 1988, 1993) and the search for targeted action. In this situations openness, team learning and knowledge sharing, helps the team to discuss and negotiate its way to a plan of action matching the specific project situation.

Once decided on necessary actions, quick response and unquestioned direction is needed again: Undisputed hierarchies and rules have a relieving effect for decision makers, both subordinates and supervisors: they need to take into account those facts only that are within their formally. To avoid information overload and allow for quick action, communication must be intensified and at the same time more restricted, specific and selective (Sutcliffe, & Vogus, 2003, Barton & Sutcliffe, 2010). Clear and bilateral communication structures and a shared language accomplish that. Smooth coordination, common orientations towards a new goal and a strong sense of mission instil both a basis to act on and stabilize the emotional situation

Obviously, in these phases different capabilities and mind-sets are necessary, both of the organization and the individuals involved (Duchek, 2014). Initially, empathy and attention for small deviations are needed. Later, clear and decisive actions and interactions connected to leadership should prevail (Barton et al., 2015). The subsequent learning process should again include the entire organization.

Summary and limitations

Successful project-oriented organizations tend to relax structures and empower teams when confronted with the sudden events in the detection phase. What is seen as an unexpected event depends on the organization's perception. Specific weaknesses in perception – organization-specific „blind spots"– constitute the main gate for surprises. In this phase, integrating diverse viewpoints beyond well-trained and immediate answers seems to be vital. Outcome of this phase is a shared situation awareness of the project's state and joint sense making. Once the decision on actions needed to address the turbulence is made, smart organizations swiftly rebound to formalized hierarchies and clear communication structures, allowing for quick and coordinated action in the recovery phase.

To sum up, properly handling the unexpected depends on the concrete action, while general success factors are too simple and single-sided. Managing the unexpected demands, the combination of centralization in a culture of clear decision-making structures and responsibilities before and after the event, but decentralization with a high degree of flexibility and open communication within the event.

With this paper, I intend to contribute to the practice of project management, especially when handling unexpected events. However, more and broader empirical research is needed to analyze projects' processes of organizing and decision-making in the context of uncertainty. Self-selection of respondents might distort and bias results. Future research based on in-depth case studies and theory-driven samples may stress the effects of a larger project's complex organizational structure, with many different layers and autonomous entities involved on managing the unexpected. Another empirical research line may gather quantitative data to clarify antecedences, course and consequences of the process of anticipation, detection, recovery and adoption for projects and project-oriented organization. We did not explicitly ask for structural or strategical characteristics of project-oriented organizations, for instance methodology, existence and role of PMO, process and project management standards, though they might play a vital role when addressing the unexpected. Given the limits of this article and the concentration on another argumentative strand, we believe that these issues should be tackled in separate papers. Ultimately, more theoretical consideration is needed to combine research on project management and research on resilience in organizations.

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