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TOWARDS UNDERSTANDING HOW TO BUILD STRATEGIC FLEXIBILITY OF AN IT ORGANIZATION

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ABSTRACT

IT organizations need to react to changes in the business, the domain (e.g., regulatory issues), and the technological development. While some of these changes can be handled by adopting agile practices, others might have large, irreversible effects on the organization as a whole. While flexibility and agility have found their way into software project methodologies, IT organizations struggle with their adaptation at organizational level. This paper presents preliminary results of a grounded-theory study aimed at understanding how experienced managers handle flexibility. The results are a rich empirical source for improving flexibility of an IT organization at the strategic level and also a good starting point for further research towards generalizing agile ideas beyond software projects.

KEY WORDS

IT Organization, Strategic Flexibility, Change, Grounded Theory, Software Methodologies.

1. Introduction

Information Technology (IT) has become an integral part of an organization's business strategy [1]. An IT organization helps in implementing these strategies by developing, operating, and managing software systems that support the organization's work. To offer its services to the business units, the IT organization provides relevant expertise, skills, processes, and infrastructure [2, 3].

An IT organization needs to be able to cope with changes of business demands [3]. Such changes can influence the IT organization's structure, processes, workforce, IT infrastructure, and services. Changes that require such strategic flexibility can originate from customers, suppliers, competitors, governing bodies, and developments in technology [2, 4–6]. To handle changes in a turbulent business environment, IT organizations need to develop and improve their strategic flexibility. Without a flexible IT organization, a company might lose its market position and competitive advantage [3].

Today, a holistic understanding of how to achieve strategic flexibility is missing. Advice can be found at the level of product planning decisions [7], development processes [8], [9] and software architecture [10–12]. However, frameworks that target the strategic levels of a software organization, such as ITIL and CMMI, merely

state that the organization needs to be flexible. They fail at explaining how to assess and improve such flexibility.

When best practices for specific improvement goals have not been established yet, inductive approaches are used to guide process improvements [13, 14]. An inductive approach elicits past experience and exposes it to the organization to learn from it [15]. If the results from inductive process improvement are attractive, they should be spread and used for enhancing prescriptive benchmarking frameworks or for creating new ones.

This paper reports on early results of a grounded-theory study to better understand how strategic flexibility is built in an IT organization. To elicit past experience, interviews were conducted with managers of the IT organization about representative changes that they encountered. The results illuminate when managers initiate flexibility-related strategic change and how they act when improving strategic flexibility.

The remainder of this paper is organized as follows. Section 2 presents the background and related work. Section 3 describes the research approach. Section 4 presents the results, which are discussed in Section 5. Section 6 summarizes and concludes the paper.

2. Background and Related Work

To handle changes in technology, markets, regulations, and budget, flexibility has become an important concern for IT executives. Such changes may affect any aspect of the IT organization, including infrastructure, applications, data, hardware, knowledge, capabilities, and staff needed to build, manage, and evolve the IT resources.

Flexibility is the ability to change easily and effectively [16, 17] and is characterized as follows:

- Up-to-dateness and effectiveness of a change and satisfaction with the results of the change [18–20],
- Difficulty, cost, time, effort, and risk of implementing a change [16, 17, 21–23],
- Extent of change and stability [24], and
- Universality of the entity expected to be flexible [2].

Strategic flexibility is the ability of an organization to adapt quickly to changes and thereby be in a position of competitive advantage [25]. Such adaptation leads to acceptance of new inputs, modification of the organization's constituents, and production of new results [2, 25, 26]. The *inputs* are the goals, constraints, and resources the organization considers to create outputs.

The *constituents* refer to the workforce, management and leadership, processes, organizational structures, and infrastructure that are used to transform the inputs into value [27]. The *outputs* are the things of value, such as products and services that the organization produces and releases to the environment.

Strategic flexibility has been studied extensively in engineering and the manufacturing of physical goods, where changes are addressed by raw material volumes, routings, production capacities, and product mixes [17]. Software, in contrast to manufacturing systems, is characterized as being intangible, knowledge-intensive, and having complex interdependencies [28, 29]. These differences shift interest away from material routing and logistics to development, evolution, and integration of new or changed software. Existing knowledge on strategic flexibility of manufacturing organizations has therefore limited applicability for IT organizations.

The understanding of how an IT organization builds flexibility is limited to tactics and to the process and infrastructure constituents [26]. Development is made flexible with agile processes that enable collective code ownership, incremental delivery, and rapid feedback [8, 9]. The IT infrastructure is made flexible by planning the reuse of core assets across multiple products and services [10–12].

A holistic understanding of how to build strategic flexibility is required to allow an IT organization to embrace change. All constituents of the IT organization should be considered as well as possible trade-offs between flexibility and other concerns such as cost and control [21]. If not addressed holistically, the achieved flexibility might be limited or compromised by unforeseen rework and cost [26].

3. Research Methodology

The present study aims at developing a generic understanding of the processes decision-makers in an IT organization use when they build strategic flexibility. It used grounded theory, as suggested by Charmaz [30] to uncover the processes that decision-makers go through as they build IT organization strategic flexibility. Grounded theory is a well-established research method used in software engineering, IT, and IS research [31].

To obtain relevant information, we formulated the following leading research question: *how do decision-makers of an IT organization improve strategic flexibility?* The study elicited and analyzed experiences from actual changes that the managers performed for improving their IT organization's strategic flexibility.

We used a combination of typical case and maximum variation sampling [32] to identify the cases of strategic change to be studied. First, management representatives of the IT organization identified a large set of recent, relevant change cases. From this list they then selected a small set of representative, but diverse cases. For each

case, the responsible manager and other staff, suggested by the manager, were identified and interviewed.

Semi-structured interviews were used as the primary data collection method [33]. Each interview lasted approximately 60 minutes. Prior research was used to frame the initial interview questions. Following the grounded theory guidelines [30], we made modifications to these questions during data collection as our understanding of strategic flexibility evolved. The interviews helped us to develop detailed descriptions of the change process, how the decision-makers perceived the changes, and how they reacted and reflected on them. This helped us to develop a holistic understanding of the different phases in implementing a change [34].

Analysis and coding were conducted iteratively as encouraged by grounded theory methodology [30]. All interviews were transcribed and coded line by line with a-priori codes that allowed us to focus the study of flexibility around changes and their impacts [35]. Documentation obtained from the interviewees and field notes were also included in the coding steps. That analysis allowed us to understand the managers' perspectives on the changes, identify the important processes that took place along the changes, and understand the impact of the changes on the organization.

During axial coding [30] we sorted the coded materials into problem-based initiation of change, the situations before the change where change impact predictions were made, and the results achieved with the change. This axial coding resulted in a structured, rich description of the decision-makers' views on the phases of a change that aimed at building strategic flexibility.

The results of axial coding presented in this paper, give a rich empirical basis for theory-building and the construction of an assessment and improvement framework for strategic flexibility.

3.1 Case Organization

We studied the IT organization of the business units of a Fortune Global 500 company in the financial services market. At the time of the study, the IT organization had 200 employees who were responsible for developing, hosting, and managing software solutions. According to independent consultants, the IT organization is representative for other IT organizations in the services industry.

We studied the following four change cases. In *Reorganization 1*, the organization built project staffing flexibility by shifting from a hierarchical organization to a matrix organization. In *Reorganization 2*, the organization simplified management by shifting from the matrix organization to a pool organization. In the third case, *RUP Introduction*, the organization built process and staffing flexibility by adopting the Rational Unified Process as an organization-wide development methodology. In the fourth case, *Regulatory Change*, the organization adapted its IT infrastructure to flexibly implement changes enforced by legislation.

Taken together, these four cases had an impact on a broad set of constituents of the IT organization. Reorganization 1 and Reorganization 2 affected the workforce, organization structure, and management. RUP Introduction affected the processes and the workforce. The Regulatory Change case affected the infrastructure of the organization and the services provided to the company's business units. As a result, the four analyzed cases give a good base for a generic understanding of how decision-makers improve strategic flexibility of an IT organization.

3.2 Threats to Validity

This research is subject to the validity threats common to grounded theory, including credibility, resonance, originality, and usefulness [30].

Credibility refers to whether sufficiently broad and deep data was used for analysis. This was achieved through interviews with multiple interviewees, as well as access to the organization's documentation of processes and lessons learned for triangulation. Credibility was also supported by studying representative cases that together covered all important constituents of an IT organization.

Resonance refers to whether the research performed was able to capture the actual experience. We addressed this threat by informing our interviewees of our presence, the purpose of the study, and the kind of information to be elicited. Interviewees also participated on their own will and interest in the study. Company representatives confirmed the correctness of the results presented here.

Originality refers to the novelty from the outcome of the study. The study was undertaken because of the limited understanding of how to build strategic flexibility in an IT organization. It resulted in an illumination of the decision-makers' perspectives on this management task.

Usefulness is a risk to applicability of the results obtained beyond the studied setting. To address usefulness, we selected a varied set of cases from a representative IT organization. The results provide a rich basis to identify models and frameworks for assessing and improving strategic flexibility of an IT organization. The results are also useful for creating theories by looking at the reoccurring patterns.

4. Results and Analysis

The data collected during the study showed that decision-makers had a key role in building strategic flexibility. They reacted to problems that implied uncertainty for the IT organization. Change was initiated because the uncertainty was uncomfortable for the decision-maker. He adapted the organization's constituents and thereby built uncertainty-matching flexibility. Each adaptation implied a set of trade-offs for the organization, some of which were predicted and some not. Some trade-offs represented so severe problems that yet another change was initiated.

We identified three phases that a decision-maker went through for each change. The first phase was *recognize problem and initiate change*. Such initiation required that the decision-maker perceived the problem to be causing enough discomfort. The second phase was *predict the effects of one or more alternative changes and select one of these options*. Here the decision-maker identified the aspects of the organization that had to be changed and evaluated possible options in implementing the change. The decision was based upon an option that yielded the desired flexibility and led to acceptable strengths and weaknesses of the future IT organization. The third phase was *to reflect on results*. Here the decision-maker reviewed the change outcome and reflected on the flexibility, strengths, and weaknesses achieved with the change. The following subsections describe each of the three phases in detail.

4.1 Recognize Problem and Initiate Change

In the first phase, the decision-maker recognized the problem that had to be addressed. He or other initiators identified the problem and saw that it led to uncertainties for the IT organization. In each of the cases, the decision-maker then initiated a change because the uncertainties were of too great discomfort for him.

The core roles in this phase were the initiators who reported the problem and the decision-maker who decided on the problem's resolution. The initiators were individuals or groups of people who perceived the need for a change. Reorganization 1 and Reorganization 2 were initiated by the Chief Information Officer (CIO). RUP Introduction was initiated by the IT organization's internal governance board. Regulatory Change was initiated by the concerned program manager. The decision-makers were also the initiators and had the authority to alter the respective organization constituents.

"[The CIO] decided to merge them [the business-oriented key accounts] into one big pool organization."

The problems that implied change originated not only in the organization's environment, but could also relate to issues internal to the IT organization. Reorganization 1 and Regulatory Change originated from problems external to the IT organization. Reorganization 2 and RUP Introduction originated from internal problems.

In **Reorganization 1**, the organization structure was hierarchical (see Figure 1, left); structured in departments and sections. Each section had a fixed number of people and was responsible for the development and maintenance of a particular solution.

The strength of the hierarchical structure was the ability of the development teams to produce software solutions quickly and with high quality. The people who worked on the product were experts in their domain.

A problem then emerged related to reduced financing of the IT organization. Budget reductions led to uncertainties about the focus of the development projects.

“Now, [...] sometimes they like to invest on [consumer e-services], a year later they like to invest money on a different topic.”

The uncertain project foci implied that development sections risked losing budgets that were allocated previously. The hierarchical structure of the organization hindered team members of one development section to be reallocated to another one. Preferred staff were running idle because their managers would not let them to be reallocated. This ineffective resource utilization was such a discomfort for the decision-maker that he initiated a reorganization.

“We had a situation where in one [section] we had no money.” “For instance, [the group] SAP implementation had 180 people. After a year you don’t really need the [rest] 60 people, but these 60 people could not be relocated, and they did not have anything to do.”

Figure 1: Reorganization from hierarchical organization (left) to matrix organization (right)

In **Reorganization 2**, the organization was organized in a matrix structure (see Figure 2, left) with three main Service Provider Units (SPUs). Each SPU was responsible for the development and maintenance of a product and had pools of people grouped by functional roles. Across the pools there were Key Accounts who acted as product owners and were responsible for conveying business needs to the development team.

The matrix organization’s strengths were the flexibility and mobility of the team members to move across different projects. Also, it provided excellent career perspectives for the staff.

In **Reorganization 2**, the problem was related to process inconsistency across the SPUs. The inconsistent processes led to uncertainties regarding how to escalate projects issues when two SPUs had to work together. A common issue would be escalated to different bosses. The resulting confusions and delays caused such a discomfort for the decision-maker that he initiated a reorganization.

Figure 2: Reorganization from matrix organization (left) to pool organization (right)

In **RUP Introduction**, the organization lacked a common development methodology. It had templates, for example for requirement specifications, but no common guidelines

for how to use the templates. The lack of a common methodology was problematic because it implied uncertainties in the allocation of staff to projects. Each allocation had to consider whether the staff was compatible with the project. If no compatible staff could be identified, the project got delayed due to the time spent by the new staff for learning how to work in that project.

“We wanted to standardize the way of working so we can support each other, if a new architect coming to your team and [he/she] knows how you work.”

The uncertainty of how projects work and how to effectively train staff caused such discomfort for the decision-maker that he initiated the RUP introduction for standardizing ways of working.

In **Regulatory Change**, the problem was related to bilateral agreements that the company’s home country planned to sign with other countries. The agreements varied across countries, and the exact terms and rules that were going to be defined were not known.

“No one really knew the [country Y] or [country Z] [...] law. Sometimes it was surprising what ideas that [country Y] government has or what the [country Z] government [considers relevant].”

The problem generated uncertainty about the services to be provided by the company. The company needed to comply with each agreement once it would be in place, or it would be considered non-compliant. It was unclear, however, how the company could ramp up each respective service rapidly enough. Each ramp-up would generate significant work. This discomfort encouraged the decision-maker to build the necessary flexibility.

This subsection showed that each change of the IT organization was triggered by a problem that caused uncertainty. The uncertainty became such a discomfort for the respective decision-maker that he initiated a change that would address the uncertainty or mitigate its impacts.

4.2 Predict Effects of Options and Select One

In the second phase, the decision-makers selected a change of one of the IT organization’s constituents for addressing the uncertainty. If multiple options were identified, each such option was evaluated in terms of its positive and negative effects on the organization. In **Reorganization 1**, **Reorganization 2**, and **RUP Introduction** only one option was explored. In **Regulatory Change**, the decision-maker used multiple options.

In **Reorganization 1**, the decision-maker addressed the project focus uncertainty by changing the organization structure to a matrix (see Figure 1, right). Staff would be grouped according to functional roles and could be assigned to different projects. This reorganization was expected to increase the flexibility of staff allocation because staff would have the possibility to move between development projects without being bound to a particular section or department.

In **Reorganization 2**, the decision-maker decided to address the escalation uncertainty by removing the SPUs and transforming the organization into one single pool organization (see figure 2, right). The removal of the SPUs was expected to clarify the decision-making authority and thereby avoid confusions. Also staff would have clear roles and responsibilities: one pool of staff would handle the development of new business solutions, one pool would handle solution provision, and one pool would be responsible for testing and support. Each pool reported to the CIO only. The existing strength, the flexible resource utilization, was expected to be retained.

In **RUP Introduction**, the decision-maker decided to address the uncertainty about the ways of working by adopting RUP as the standard development methodology for the whole IT organization. The adoption of RUP was anticipated to help staff to move between projects. Staff reallocation was simplified because RUP would introduce a common way of working. A common terminology would also ease communication between staffs. Decision-makers selected RUP because some teams were already using RUP, and RUP was perceived to be an industry standard.

“Some of them did RUP already, RUP was kind of the industry standard at that time.”

In **Regulatory Change**, the decision-maker addressed the uncertainty by exploring two options: to procure an IT solution from a third-party, or to build its own IT solution.

The option to procure was discarded, even though it was estimated to be cheaper than the other options. However, no tailored solution existed in the market and integration of an off-the-shelf product would have required significant modification effort.

The decision-maker selected to build an own IT solution. It was expected to provide the advantage of influencing the industry of how the regulations would be implemented and that it would fit the rest of the organization's IT systems and the company's operations.

“We decided that this [buy approach] cannot be the right way because there's nothing on the market available, so whatever solution they buy they have to change that system [...]. We clearly said, OK, do it on a [build] approach in our infrastructure. It will be not cheaper, but in the end the system will fit in our environment.”

In developing the IT solution, there were again alternative options. Maintainability and development speed needed to be traded-off with usability. Maintainability required decoupling the solution from the rest of the IT systems. However such decoupling would sacrifice usability for the clients.

“[The system was] simplified in a way that we could we created a known system just for the [regulation]. So we could test it independent to all of the system.”

“We clearly have chosen the option which has the fewest impact on all of the system. It might not be the best

for the clients, because clients will get 2 confirmations out of one [...] transaction.”

Given the time constraints to deliver the solution, maintainability was favored over usability. To further accelerate the critical project, the IT organization's three most senior business analysts were allocated and received the task to closely follow the whole development project.

“In the normal project, [...] you would not waste the most senior guy doing some functional test on the code level [...]. We need the best guy to ensure that [...] the calculation is correct. Otherwise we are searching bugs and we do not know where we can find it and can search on the wrong place and just lose time”.

Also, the decision-maker accepted that the project temporarily deviated from the IT organization's standard development processes to cope with time constraints. Such deviation was expected to require correction of the project results once the system would be in place.

This subsection showed that decision-makers explored one or multiple alternative options for addressing each of the uncertainties the IT organization was confronted with. Each option targeted an uncertainty-matching flexibility and was evaluated in terms of advantages and disadvantages for the IT organization.

4.3 Reflect on Results

In the third phase, decision-makers reflected on the results that were achieved with the change. They assessed how the change addressed the uncertainty and the strengths and weaknesses it implied for the organization.

All four changes were concluded successfully and achieved the intended flexibility. However, not all outcomes were acceptable and some generated unpredicted weaknesses. In particular, Reorganization 1 generated new problems that could not be mitigated.

In **Reorganization 1**, the matrix organization structure (Figure 1, right) delivered the flexible resource utilization that was anticipated by the decision-maker. It provided additional strengths, in particular by improving the career perspectives of the organization's staff.

However, the matrix organization led to inconsistent escalation processes for projects that spanned multiple SPUs. This weakness was not anticipated. The uncertainty of how issues would be escalated again caused so much discomfort for the decision-maker that he initiated Reorganization 2.

In **Reorganization 2**, the change resulted in a pool organization structure (Figure 2, right). Staff was grouped into large pools based on their roles: Solution Provision, Development Projects, Testing and Support, and Managed Services. The Key Accounts from the three SPUs in the previous matrix organization were merged into one large Solution Provision pool. The Development Project pool was responsible for development activities. It contained five sub-pools: project management (PM), business analysis (BA), development (DEV), and integration

(INT). The Testing and Support pool was responsible for deploying the solutions that resulted from the development projects into the IT infrastructure.

The pool organization resolved the uncertainty of how project issues had to be escalated. It established clear responsibilities for each of the pools. Each pool was headed by a common manager for resolving project issues, the CIO.

"So if we have some escalations between these two organizations [pools], then you have to go to [CIO]."

Another strength of the pool organization was resource utilization flexibility that was further improved. The organization of staff into role-specific pools made allocations to projects easy and allowed respecting changing business needs.

"We are sourcing the project depending the business needs and budget they have."

"The way things are working is that the project lead [...] would be the first one assigned to the project. [...] solution provision [...] would request a project lead and the project lead would staff the remaining team and plan the whole project."

The pool organization also had weaknesses, which concerned staff motivation, knowledge management, and lead-time for staffing. Motivation suffered because employees did not feel to belong to a group. Colleagues changed when project teams would be recomposed. In-depth product knowledge got lost when people moved from one project to another. Since the roles required for a project were spread over multiple pools, it took more time than before to find the right people to source a project.

"Normally the lead time to find resources is 4 weeks."

Even though the weaknesses did not lead to a reorganization, they had to be mitigated. For example, the loss of product knowledge was mitigated by active sharing of lessons learned.

"We have some specialists groups, they have very strong interactivity, so they learn from each other and then the group will communicate this lessons learned to the whole organization."

As a result of **RUP Introduction**, all development projects followed the same process. The introduction of RUP increased flexibility of resource allocation and improved the mobility of employees that switched between projects. These advantages were anticipated.

"We wanted to standardize the way of working so we can support each other, if a new architect coming to your team and [he/she] knows how you work."

The introduction of RUP also delivered another strength: a common terminology. It eased the communication among team members, particularly when a team member joined a new project team.

RUP also introduced a need for documentation, a weakness from the perspective of the staff. Project milestones obliged projects to deliver documentation.

Employees felt they were being watched and were reluctant to adopt the change.

"They just want to work as they have always worked, for them it is just an overhead. When we introduced the milestones it was just additional work for them they did not see the benefit."

This weakness only occurred at the beginning of RUP adoption. The temporary nature of the weakness did not warrant additional strategic changes.

Regulatory Change Implementation resulted in the deployment of a new software solution into the IT infrastructure of the organization. To address the uncertain contents and timing of the agreements, the system allowed switching tailored services on and off. This was the intended and anticipated purpose of the software solution.

"Unfortunately, [country X] jumped off few days before going live, but nevertheless the software is ready."

"We prepared the software in a way we could switch on or off a country."

The construction of a completely new system yielded the other anticipated strengths. It allowed the decision-maker to influence how the agreements would be implemented. Also it led to a low solution integration effort and good maintainability.

"[The system was] simplified in a way that we could create a known system just for the [agreement]. So we could test it independent to all other systems."

This solution also had drawbacks. The decision to build the system from scratch required a large investment. The decision to prioritize system maintainability reduced usability for the clients.

In this case, the decision-maker was aware of the strengths and weaknesses prior to the delivery of the software solution. However, the weaknesses were not severe enough to initiate mitigation actions or further strategic change.

This subsection showed that each change delivered the intended flexibility, other strengths, and both expected and unexpected weaknesses. Some of these weaknesses could be mitigated, while others initiated another strategic flexibility improvement project.

5. Discussion

The cases suggest that when building strategic flexibility, one is concerned with two levels of change: strategic and operational changes. The strategic changes pertained to the organization, the development process, and the IT infrastructure. The operational changes concerned the re-allocation of staff to projects and switching on and off services. Each strategic change was performed by the decision-maker for building flexibility at an operational level. The operational flexibility was then utilized for addressing the uncertainty caused by the problem the IT organization was confronted with.

The two levels of change can be seen as a dichotomy of flexibility by change and flexibility by design [25, 36]. Strategic change is used for (re-)designing the flexibility of the IT organization. Operational change is thereby enabled to rapidly and easily answer the outcomes of the uncertainty the change has been designed for.

Hitt et al. [25] suggested that for an organization to become flexible, it needs to engage in strategic actions such as to build dynamic core competences. Hitt et al. also recommended specific actions to be undertaken. Our analysis results suggest that the actions are the pragmatic result of the decision-maker's knowledge of the change evaluation of the change options in terms of strengths and weaknesses for the organization. Furthermore, although the studied organization addressed the kinds of conversions suggested by Hitt et al., it did well by not following the recommendations. Instead of building a horizontal organization, a pool organization was built in which horizontal projects could be easily ramped up and down. This suggests that there is a broader set of options for achieving flexibility than was anticipated earlier. This also suggests that trade-offs of strengths and weaknesses of a change need to be evaluated in the situation, in which an organizational change is performed.

Earlier research had proposed that organizations adapt to change by adjusting to new inputs, by modifying its processes, and by producing outcomes [2]. We could confirm this inputs-conversion-outputs view of flexibility. Reorganization 1 and Reorganization 2 addressed variation of inputs, pertaining to budget instability. RUP Introduction is an example of process modification as part of achieving flexibility. Regulatory Change Implementation is an example of producing outcome variation, as the services of the IT solution could be modified depending on the services required for each agreement.

Our data also confirms the view that IT organizations adapt their constituents for building flexibility. Each of the cases involved a change of one of the constituents suggested by Tapanainen et al. [27]. Strategic flexibility involved much more than operational tactics such as those suggested by Benamati and Lederer [26]. While practices like IT compliance, staff motivation, customized education, and staying up-to-date provide good tactical advice for flexible IT organizations, our cases provided evidence that strategic change is at least as important to build a flexible IT organization.

The present paper presents the cases in a way that gives rich insights into how decision-makers regard strategic flexibility and how the change process for building such flexibility unfolds. Future research is needed to identify a model of how strategic flexibility is built for an IT organization and to develop a framework for assessing and improving such flexibility.

6. Summary and Conclusions

This research has studied how decision-makers build strategic flexibility of an IT organization. Earlier research

on flexibility in the IT context focused on the development process, on the software infrastructure, or on flexibility tactics only. Our industry partner, though, wanted an approach that allows improving flexibility while considering the whole IT organization and the trade-offs flexibility implies.

We used grounded theory as a research method for understanding how decision-makers interact with the IT organization when building strategic flexibility. We studied four diverse cases of flexibility improvement that our industry partner considered representative. Data was collected by interviewing decision-makers about the actual cases they were involved in. The results presented here are the results of the open and axial coding procedures suggested by grounded theory methodology.

Up to axial coding step, the research resulted in a rich description of the four cases. Each description explains how the decision-maker interacted with the IT organization for evolving the IT organization's strategic flexibility. The results indicate that strategic flexibility of an IT organization relates to two levels of change: strategic and operational. It is the result of pragmatic decision-making based on predicted strengths and weaknesses of the strategic change.

Future research is needed to describe a fitting model of how strategic flexibility is built for an IT organization and to develop a framework for assessing and improving such flexibility.

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