

Perceptual Differences and Conflict in Packaged Software Acquisition: Results from a Multi-perspective Framing Analysis

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Abstract

Packaged software has gained importance across organizations. While literature has studied the adoption and implementation of packaged software extensively, research on software acquisition has been limited. Software acquisition projects are complex endeavors during which multiple stakeholders interact. With this study, we strive to illustrate the crucial aspects in software acquisition decisions from the perspectives of IT, business, and procurement. Therefore, we conducted a multiple case study with 19 experts, applying technological frames of reference as a focusing lens. We find evidence for distinct technological frames across departments, which often results in conflicts among the involved parties. Our findings however indicate that emerging conflicts and perceptual differences are resolved during the acquisition process. Thereby, mutual understanding can be achieved which facilitates decision-making by taking into account all participants' viewpoints. Our results allow for an extension of technological frames of reference theory and support decision makers in optimizing their software acquisition decisions.

1. Introduction

Packaged software has gained importance over the last years. According to IDC, a market research firm, organizations will spend more than 350 billion USD in 2013 for packaged software [1]. More than 63 % of organizations want to buy or utilize packaged software in the future [Forrester 2]. As heterogeneous IT landscapes comprising different and individualized custom software solutions across functions and departments constitute one of the primary pain points for IS managers [3], many firms tend to prefer standardized packaged software when choosing new software solutions [4].

While scholars have dealt extensively with issues

around the adoption of packaged software [5] and its implementation, research on the acquisition of packaged software has been limited and is underrepresented [6, 7]. In our work, we follow Palanisamy et al. [8, p. 613] regarding the conceptual understanding of enterprise software acquisition as “the execution of activities such as specification of the need, selection of one or more suitable vendors for the software, negotiation, contracting, placing the order, and monitoring the actual delivery”. Because packaged software is configured [7] but not developed to suit custom needs, choosing the optimal software is a crucial task which has severe consequences for the subsequent implementation and use [9]. Furthermore, the selection and acquisition of packaged software itself is carried out in complex and expensive projects that make up a significant portion of an organization's IT budget [10].

During the process of software acquisition (SA), many different stakeholders are engaged [11, 12]. These stakeholders possess different backgrounds, experiences, and knowledge on certain aspects of the acquisition process. “While package software is viewed as a bounded artifact, the same technology may be perceived differently by distinct groups of people” [6, p. 142]. With this paper, we strive to answer calls for research focusing on social interactions in software acquisition [e.g., 13] by studying SA decisions from multiple perspectives. Precisely, this paper examines software acquisition decisions through the theoretical lens of ‘technological frames of reference’ [14]. We followed a triadic case study approach with five cases and focus in particular on how IT, business, and procurement possess distinct expectations and goals about SA decisions.

This paper aims to contribute in the following ways. (1) We study SA decisions from multiple perspectives and gain new insights into the viewpoints and key tasks of different SA stakeholders. (2) We present results on perceptual differences and

contrasting views of stakeholders, which contributes to technological frames of reference literature both on a methodological and theoretical level. (3) We evaluate the emergence, causes, and effects of conflicts in SA decisions. For the five cases we studied, we find that conflicts occurring due to perceptual differences are resolved during the acquisition.

The remainder of the paper is structured as follows: In the next section, we give an overview of the relevant literature in the context of this study. In section three, we describe our multiple case study approach and provide general information on our cases. Afterwards, we present our results on technological frames and perceptual differences. The paper ends with a short discussion and conclusion in which we highlight our key findings, discuss limitations, and indicate avenues for future research.

2. Related work

To provide a theoretical background for our study, the following three literature streams are of main interest. First, we briefly describe the state-of-the-art concerning software acquisition. Second, we present key findings of previous technological frames of reference (TFR) research which has been a popular theory in IS research [15]. TFR provides the basis for our analysis and enables us to describe understandings and perceptions of all involved parties. Third, we present related findings on conflicts and perceptual differences. For the purpose of the reported study, these distinct streams of research will be brought together and combined.

2.1. Related work on software acquisition

In IS literature, a process-oriented view on the topic of software acquisition has been predominantly adopted. This study is based on a generic software acquisition process depicted in Figure 1.

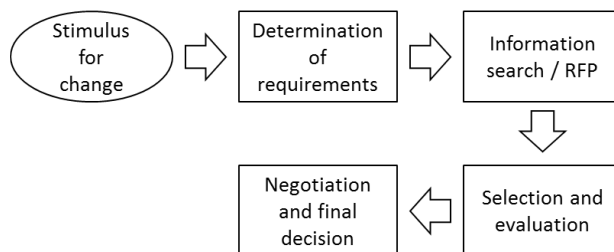


Figure 1: SA process based on [11, 16]

The software acquisition process usually starts with a stimulus for change [16]. Once the project is approved, requirements have to be determined [17]. These requirements are used as a basis for identifying vendors that are able to fulfill these requirements

(active information search [11]) or included in the request for proposals (RFP [18]). The possible solutions and vendors are evaluated [19], and a shortlist is selected [16]. Finally, negotiations with one or more vendors take place until a decision is made [8]. It is important to note that the sequence of the illustrated activities is not linear per se, but iterations between phases can prevail [11].

The selection and evaluation phase within the process is another topic extensively discussed. Results from a recent literature review indicate seven salient clusters of selection criteria: functional, software quality, software vendor, cost & benefits, soft- & hardware, opinions, and output [20]. Many more publications discuss factors or criteria for selection and evaluation [e.g., 21] or study the importance of particular criteria in certain software acquisition decisions [e.g., 22, 23]. Moreover, there is research dealing with influencing factors on SA decisions [e.g., 8] that is, however, out of scope of this study.

2.2. Technological frames of reference

The concept of technological frames of reference was introduced by Orlikowski and Gash [14], drawing on social cognitive research but also on sociological literature examining the social construction of technology [24]. Technological frames of reference are defined as a group's common cognitive structures "that concern the assumptions, expectations, and knowledge they use to understand technology in organizations" [14, p. 178]. Also included within technological frames are conditions, applications, and consequences of the technology [14]. Technological frames constitute templates for problem solving and serve to filter newly obtained information [25]. They determine what is perceived as possible and what is not [26]. Technological frames facilitate the understanding of sense-making processes. This is important because, from an interpretive view, technologies are social artifacts that can only be understood in their social contexts. Altogether, TFR provide a foundation for assessing and understanding social interactions related to a certain technology.

An example of distinct technological frames that illustrates the concept well is given in the study of Yeow and Sia [27]. Regarding the implementation of an e-procurement system, three identified social groups possess distinct frames. The operations department hopes to increase efficiency by adopting unified policies and best practices. The finance department primarily expects the system to reduce risks by implementing a defined, comprehensive, and limited version of the system. The management aims to have a stronger control over their units' procurement budgets

through the software. During implementation, the system is shaped according to elements of these frames.

In the TFR literature stream, much research has investigated the phenomenon of frame congruence or incongruence [28]. Congruence of technological frames refers to “the alignment of frames on key elements”. Congruent frames are not “identical but related in structure (i.e., common categories of frames) and content (i.e., similar values on the common categories)” [14, p. 180]. Incongruence, in contrast, refers to significant differences in frame content.

The majority of empirical results indicate that incongruence between frames leads to difficulties and problems in software or IS implementation projects [25]. Frame congruence, on the other hand, is found to be positively related to end-user satisfaction [29], success [9], and allows for more efficient decision-making [30]. In summary, it is usually argued that various stakeholders in projects need to possess congruent technological frames of reference when final decisions are made.

However, whereas most research describes frame congruence as advantageous, some studies challenge these results. Socio-cognitive differences may facilitate diverse interpretations of information and improve group decision making [25]. Cognitive differences within a team are found to be positively related to team performance [31]. Broad knowledge and decreased consensus can be important in early stages of decision making [30]. Tying together these findings, Davidson [15] summarizes that frame incongruence cannot necessarily be considered harmful.

2.3. Perceptual differences and conflict

Perceptual differences are conceptually related to the incongruence of technological frames [e.g., 32]. Along with aspects of frame incongruence (e.g., disagreements in expectations, goals, and role understandings [33]), perceptual differences have been found to account for conflict in marketing research [e.g., 34]. In an IS context, perceptual differences may be caused by differences in domains of participants, people’s tendency to attribute more importance to themselves than to others, a ‘gap’ between business and IT, and dynamics inherent in interactions [35]. Conflict, on the other hand, is neither good nor bad per se [36] but has been found to be predominantly associated with negative effects, such as personal frustration and decreases in performance and decision-making effectiveness [37]. Interpersonal conflict is a major source of project failure [38]. In contrast, the constructive resolution of conflicts positively affects success in IS projects. Success is also

found to be contingent upon the extent to which consensus is reached and incompatible goals are resolved [39].

The described literature streams are able to cross-fertilize each other. By bringing research on software acquisition, technological frames of reference, conflict, and perceptual differences together within this paper, we respond to calls for more research on social aspects in software acquisition decisions [6, 13]. We examine the acquisition of packaged software through the lens of technological frames of reference. Thereby, we aim at gaining insights in SA decisions as social products with differing perceptions which have not been considered so far.

3. Research approach

In order to understand the sense-making process in the context of packaged software acquisition decisions, we follow an interpretative case study approach. Qualitative interpretive case studies are suited ideally to explore cognitive processes behind judgments of technology [40]. In our approach, TFR theory was used as a theoretical lens or “as part of an iterative process of data collection and analysis” [41, p. 76].

3.1. Case study design

We decided to apply a multiple-case design following mostly literal replication but also theoretical replication logic [42]. We studied five software acquisition cases from four different large-scale organizations. The purchased software was associated with differing importance and impact for the respective organizations. The units of analysis are singular software acquisition decisions [42]. We identified three relevant social groups that are present in software acquisition projects, following Pinch and Bijker [43]. These groups represent three different departments: IT, the primary business unit initiating the acquisition, and the purchasing department [11, 27]. Hence, by taking into account these three groups, we apply a triadic case study approach.

To enhance construct validity we used multiple sources of evidence (data triangulation) [42] and collected data within two waves: First, we conducted in-depth interviews with at least one member of each department. In addition, we assembled supplementary documents (company information, process descriptions, and project specific documents), which were used to corroborate results. Yet, the interviews constitute our primary data source [41]. In total, we carried out 17 interviews with 19 interviewees, who had on average 16 years of experience in their respective fields. The interviews lasted 67 minutes on

Table 1: Descriptive Information on Cases and Case Firms

Case	ALPHA (A)	BETA (B)	GAMMA (Γ)	DELTA (Δ)	EPSILON (Ε)
Industry	Process industry	Finance	Transport	Transport	Manufacturing
Employees	>30,000	>50,000	>100,000	>100,000	>100,000
Sales	> € 10,000 m	> € 500,000 m	> € 20,000 m	>€ 20,000 m	>€ 20,000m
Type of purchased software	Audit management	Payment transactions	Operating system and office software	Website-related systems	Human resources management software
Total duration	1 year	9 months	1 year	1 year	18 months
Total volume	> € 50,000	> € 5,000,000	> € 5,000,000	> € 5,000,000	> € 5,000,000
Current project phase	Final evaluation	Negotiation	Acquisition completed	Acquisition completed	Acquisition completed
Interviewees	3	3	5 ^{*)}	5 ^{*)}	4
Positions of interviewees	P: ITC procurement agent IT: Information manager B: IT auditor (project manager)	P: Director IT procurement IT: Managing IT director B: Director of operations	P: IT Procurement manager, IT procurement agent ^{*)} IT: Head of IT, IT supplier relationship manager B: Director license management	P: 2 IT procurement agents ^{*)} IT: 2 IT project managers B: Online sales manager	P: IT procurement manager IT: IT project manager, IT supplier relationship manager B: Director human resources

^{*)} The IT procurement agent in GAMMA was also involved in DELTA. We interviewed him about both SA projects in one interview. Therefore, we have a total of 19 (not 20) interviewees.

average, were recorded (if permission was obtained, else extensive field notes were taken), and transcribed. Furthermore, informal discussions during field-site visits provided valuable insights, which were also written down in field notes, resulting in a total of 276 analyzable pages.

Second, we developed a structured questionnaire based on the findings in the first wave that was sent to all interviewees. The questionnaire consisted of three parts. Part one was concerned with descriptive information on the individual software acquisition cases and personal experiences of the interviewees. In part two, we asked about the specific SA decision and different perspectives of participants using 7-point Likert-scale items. In the final part, we surveyed the degree of involvement with topics found to be relevant in SA projects and process activities. The results were used to strengthen and support our findings [44]. Finally, when answers or statements were not clear, we contacted the interviewees via mail or telephone for clarification.

An overview of our case firms, the investigated software acquisition projects, and involved interviewees is given in Table 1.

3.2. Data analysis

Our data analysis approach for identifying technological frames of reference is consistent with Orlikowski and Gash [14]'s analysis. In order to avoid getting locked into certain themes, as cautioned by Walsham [44], we employed an inductive grounded

method [45]. Using technological frames of reference as a focusing lens, our methodology broadly follows Robey and Sahay [46].

The process of data analysis is illustrated in Figure 2. In the first step, we used a technique of first-level coding [47] and assigned codes to all statements that reflect frame content domains in TFR theory. During this step, we coded all interviewees' statements concerning own knowledge, expectations, and assumptions, as well as all statements regarding the mirrored, perceived knowledge, expectations, and assumptions the interviewees attributed to the other departments. Coding was done using the software package Atlas.ti. The first-level coding process resulted in a total of 453 different codes. In the second step, we clustered the codes concerning own knowledge, expectations, and assumptions into different frame content domains, conducting a sort of pattern coding (step 2a in the figure) [47]. The complete process was repeated iteratively throughout the data collection phase in order to reflect new findings and ideas [14, 42]. For the complete sample, five frame content domains emerged and theoretical saturation was reached (step 3) [48]. The final domains reflect themes that were found to be common across all cases and groups. In step (4a), we evaluated the codes and underlying statements for the perspectives' frame content domains on an individual case level, since frame content cannot simply be compared across cases [15]. In step (4b), the codes regarding perceived or mirrored frames were clustered into the same five

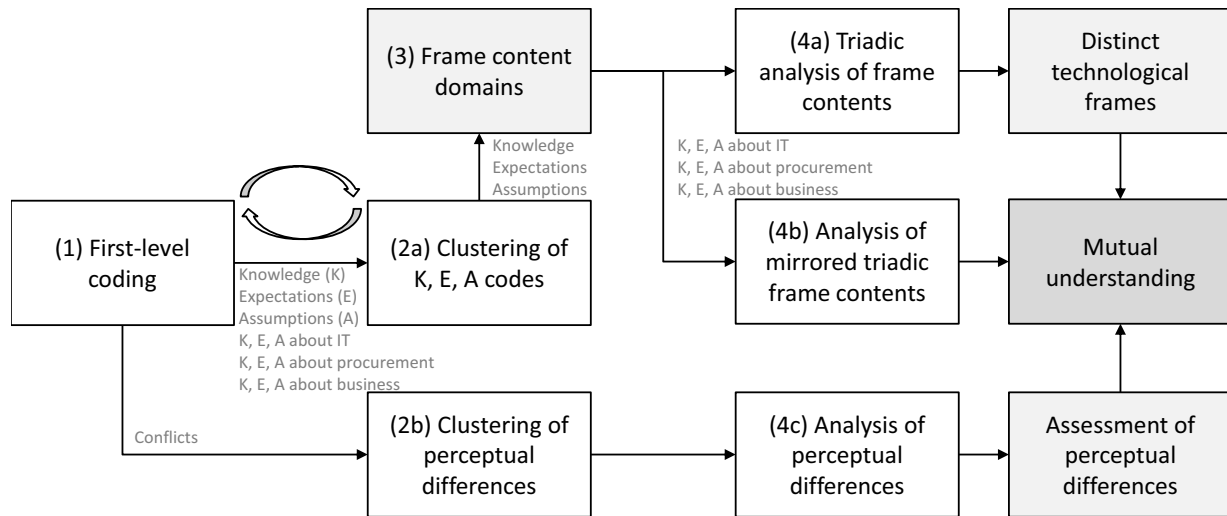


Figure 2: Overview of data analysis in this study

frame content domains and analyzed.

In parallel, we clustered all statements pointing to conflicts with regard to perceptual differences (2b). Three clusters of perceptual differences emerged. In step (4c), we analyzed each occurrence of conflict with regard to the level of perceptual differences and intensity of conflict (low, medium, high).

The combination of results (displayed in light grey in the figure) suggests that distinct frames on the one hand and perceptual differences on the other exist, but still, mutual understanding is developed.

4. Results of the multiple case study

Within this section, we present the results of the previously described analysis.

4.1. Frame Analysis

In total, we found five different frame domains that are present at different levels throughout relevant social groups and cases. These five frame content domains are:

1. **Strategy implementation:** Refers to aspects concerning strategic options an organization has or acquires through the procured software but also includes notions about a more general environment the software has to fit in. The core of this domain resembles the technology strategy frame by Orlikowski and Gash [14].
2. **Project management:** Refers to people's views that the acquisition project itself is in focus and plays an important role, as well as notions about the management of the respective project.
3. **Provision of functionality:** Refers to people's understanding which functionality the software has to provide. This domain also includes viewpoints

and ideas about future applications of the software. Thus, it is similar to the original technology in use frame [14].

4. **IT operations:** Refers to the view by participants in the software acquisition project that the procured software has to be managed in a technical sense. Operations must be ensured, technical requirements fulfilled, and the software must be compatible with the existing IT infrastructure.
5. **Cost & supplier management:** Refers to people's understanding and attitudes toward cost, budget, and the management of (potential) suppliers during and after software acquisition.

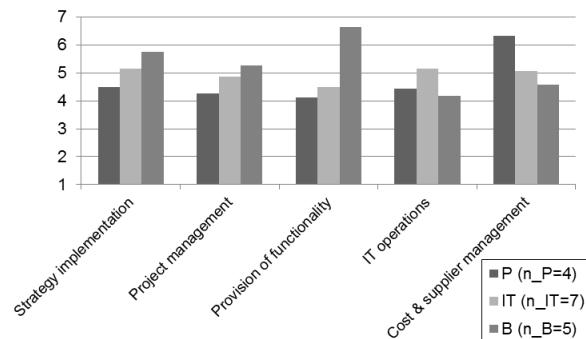


Figure 3: Degree of involvement with frame domains, n=16¹

Figure 3 shows the degree of involvement of procurement (P), IT, and business (B) with the identified frame domains, based on items from our questionnaire. For the business units, the provision of functionality (frame content domain #3) is clearly

¹ The questionnaire was sent out to all interviewees. In total, we received 16 responses. However, the response from the procurement agent at ALPHA is missing. All other perspectives are covered. The measurement scale ranged from 1 ("not involved at all") to 7 ("very strongly involved").

primarily in focus, as evidenced by this statement:

“Our favorite [solution] incorporates more functionality. Thus, it is better all in all than the other one.” (Business, ALPHA)

Analogously, procurement is mostly concerned with cost and supplier management. Its relevance was illustrated by one interviewee as follows:

“We need opportunities to talk about costs and prices with the vendor” (Procurement, GAMMA)

The results for the IT department, however, reveal a rather homogeneous degree of involvement across all five domains. Most salient are the strategy implementation (domain #1) and IT operations (#4) domains. These results might be owed to the fact that we spoke to IT project managers and IT supplier relationship managers who concentrate on differing aspects of procurement projects.

Both topics did also emerge as important from the interviews, as highlighted by the following two quotes regarding IT strategy and operations, respectively:

“If there is a strategy for IT, you have to adhere to it with your standards – else, there is uncontrolled growth.” (IT, BETA)

“Where is the know-how about how to operate software? It has always been in house.” (IT, ALPHA)

Altogether, we found evidence for significantly differing technological frames of reference across groups in our five cases. These results are supported by the data analysis (cf., e.g., Table 3), but they are also acknowledged directly by interviewees:

“After all, everybody argues for his own interests, procurement, business, and so on.” (IT, DELTA)

“All departments follow their specific goals. These goals are not necessarily ours.” (IT, EPSILON)

“Procurement has a different point of view than business. These are two worlds colliding.” (Business, GAMMA)

4.2. Perceptual differences and conflict

We have shown that procurement, IT, and business possess distinct technological frames. Thus, goals within SA projects differ, and conflicts between participants occur. During the evaluation of our interview data, we found 36 data points that indicate conflicts. Three potential causes of conflicts regarding perceptual differences ultimately emerged from the inductive clustering process. They are displayed in Figure 4. We will discuss the three types of perceptual differences in the following.

4.2.1 Perceptual differences regarding roles. These differences concern the perception of SA team members about roles and responsibilities of other participants. The occurrence of these differences and their effects on conflicts are summarized in Table 2.

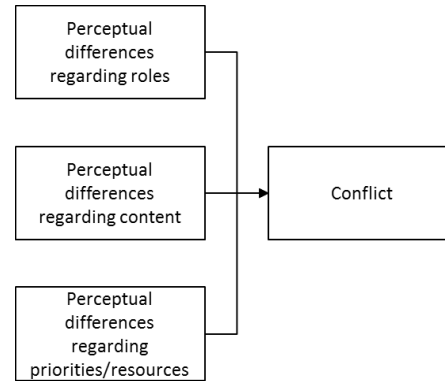


Figure 4: Perceptual differences in our cases

The table shows that differences regarding roles are low most of the times. However, if strong differences exist, they tend to bring forth high conflict (potential).

Table 2: Numbers of perceptual differences regarding roles

Level of perceptual differences regarding roles	Level of conflict			Total
	Low	Medium	High	
Low	6	12	4	22
Medium	0	2	6	8
High	0	1	5	6
Total	6	15	15	36

The two exceptional ‘high’ conflicts that are displayed in the low differences row cause high conflict because of high perceptual differences regarding resources, not roles. Our findings are supported by the insights we gained from our detailed and mirrored frame analysis.

As an example, the contents of the ‘provision of functionality’ domain per case and perspective are displayed in Table 3. We conclude from both tables (2 and 3) that differences in perceptions of roles are generally not significant. Although not all frame content elements across perspectives and cases are acknowledged by the departments themselves and in the mirrored view, the most salient aspects are transparent for all participants – as illustrated for the provision of functionality domain and the business units’ views in the table.

In general, with respect to the domains the departments are mostly concerned with, the other departments seem to know very well which aspects are in focus, as highlighted by the following three quotes about perceived key elements of other departments.

*“The business side considers **functionality** and often states: ‘We need that, too’, or, ‘we like that!’”* (IT about business, BETA)

*“IT wants to be heard when it is about general **technological** parameters. [...] Concerning changes in technology, they don’t want us to decide for a dead technology that will be displaced in **two years**.”* (Business about **IT**, ALPHA)

*“Whether it fulfills **commercial** assumptions? That is the job of procurement to decide.”* (IT about **procurement**, DELTA)

The fact of knowing what the other participants within the SA project aim for provides a basis which only allows for low perceptual differences.

4.2.2 Perceptual differences regarding content. In contrast, these differences (displayed in Table 3) summarize topics perceived differently within the project. Compared to the results on role perception, high perceptual differences regarding content are more

Table 3: Number of perceptual differences regarding content

Level of perceptual differences regarding content	Level of conflict			Total
	Low	Medium	High	
Low	0	2	2	4
Medium	0	5	3	8
High	6	8	10	24
Total	6	15	15	36

common (24 data points). The effect of content differences seems to be less grave, though. Strong differences do not necessarily have strong effects on conflict. Again, the existence of high conflict for the data point with low perceptual difference is due to high perceptual differences regarding priorities.

The conflict that occurred most often is the dispute between functionality and costs. Both topics are of crucial importance to one group of SA participants (business and procurement, respectively). Whereas the business units would always prefer solutions that offer the most functionality, in doing so giving less importance to cost aspects, procurement does not really care about functionality. They concentrate on finding a cheap supplier and solution. The following quote illustrates the underlying problem well:

“Sometimes, there are participants who want just that one solution. Usually, they argue based on the functional suitability of the software. In moments like these, the experts from business lose their ways. Then, the project takes too long, and it becomes too expensive.” (Procurement, DELTA)

4.2.3 Perceptual differences with regard to priorities and/or resources. These differences constitute the third category that emerged from our data. They occur, whenever two (or more) departments prioritize projects, tasks or goals differently. The results are displayed in Table 5.

Table 5: Number of perceptual differences regarding priorities/resources

Perceptual differences regarding priorities	Level of conflict			Total
	Low	Medium	High	
Low	5	4	2	11
Medium	1	6	1	8
High	0	5	12	17
Total	6	15	15	36

Table 4: Detailed contents of the 'provision of functionality' frame domain

Cases Departments	ALPHA	BETA	GAMMA	DELTA	EPSILON
Procurement	<ul style="list-style-type: none"> Strive for the best for the whole concern (✓✕) 	<ul style="list-style-type: none"> Goal of the system is important (✓✕) 	<ul style="list-style-type: none"> Certain requirements must be fulfilled (✓✕) 	<ul style="list-style-type: none"> Functional requirements must be fulfilled (✓✕) 	<ul style="list-style-type: none"> Functionality is important (✓✕)
IT	<ul style="list-style-type: none"> Requirements must be elicited and documented (✓✓) System has to be secure and perform well (✓✕) 	<ul style="list-style-type: none"> Functionality must be present (✓✕) Once the software is familiar, profits will emerge (✓✕) Business knowledge is present (✕✓) 	<ul style="list-style-type: none"> Requirements must be determined (✓✓) 	<ul style="list-style-type: none"> Requirements must be described thoroughly (✓✕) All requirements have to be covered (✓✕) Consequences and relations between systems must be managed (✕✓) 	<ul style="list-style-type: none"> Solutions and requirements must fit (✓✓) Degree of process fulfillment matters (✓✓)
Business	<ul style="list-style-type: none"> Functionality is key (✓✓) Software assists our work routine (✓✓) Usability and user guidance are important (✓✕) 	<ul style="list-style-type: none"> Requirements must be fulfilled (✓✓) New opportunities emerge (✓✕) 	<ul style="list-style-type: none"> The problem statement is in focus (✓✓) Needs must be fulfilled (✓✕) Special functionality is needed (✕✓) 	<ul style="list-style-type: none"> Software must deliver business value (✓✓) Requirements have to be determined in a detailed way (✓✓) 	<ul style="list-style-type: none"> Functionality is essential (✓✓) Usability is very important (✓✓)

The notation of ✓ or ✕ indicates whether the content element was present in statements of the departments themselves (first symbol) and mirrored statements of other perspectives about the respective departments (second symbol), i.e., (✓✓) means that the notion was confirmed by both views.

Perceptual differences regarding priorities and resources are present on all levels. Their effect is stronger than the impact of differences regarding content but weaker than the effect of differences in role perceptions. Low differences account mostly for low conflict, high differences for high conflict. This type of perceptual differences is exemplified by the following statement:

“Before the collaboration begins, all our resources are constrained. Only because I believe to have important requirements, it doesn’t mean that IT and procurement hold the people available for the project.” (Business, DELTA)

Choices that might be beneficial for one department (in the example: urgency of action) can present significant challenges for other departments – for example because these choices increase their workload.

Altogether, it is important to note that strong or ‘high’ conflicts are not usually caused by one but multiple perceptual differences, as the data in Table 6 demonstrates. The diagonal elements indicate the incidence of high conflict caused by isolated high levels of only one type (and accordingly low or medium levels of other types) of perceptual differences.

Table 6: Number of causes of high conflict

High perceptual differences regarding	Roles	Content	Priorities/resources	Total
Roles	0	2	3	5
Content	2	1	7	10
Priorities/resources	3	7	2	12

We find that perceptual differences regarding roles never occur singularly but always in combination with other differences. The most common combination is that of perceived differences regarding content and priorities/resources. Moreover, there is no data point with high levels of differences in all three categories.

4.3. The development of mutual understanding

In section 4.1, we cited the business manager at GAMMA as follows:

“Procurement has a different point of view than business. These are two worlds colliding” (Business, GAMMA)

Remarkably though, her statement continues:

“These worlds must complement each other, else it doesn’t work out.” (Business, GAMMA)

Again, we find similar notions in the statements of all interviewees, e.g.:

“It is crucial that we come together and that all of us possess the same understanding of [the system].” (IT, ALPHA)

“We had the consensus that all of us could agree at the end of the day with absolute peace of mind” (IT, BETA)

“In the end, we need consensus.” (Procurement, EPSILON)

In all the studied cases, at the end decisions were made uniformly by the whole SA team, taking into account the viewpoints of IT, business, and procurement. In the course of meetings, discussions and project advancement, perceptual differences were reduced and gaps were bridged. Although conflicts emerged, the teams managed to resolve them and mitigate their negative effects. Distinct technological frames of reference were still in place at the end of the projects, but the essential elements had been transported to other participants which minimized perceptual differences regarding roles. Content and priority differences were solved constructively and openly, in doing so considering the frames of all participants.

We find evidence for mutual understanding and the acknowledgment of knowledge, expectations, and assumptions of other participants within the SA process. Therefore, mutual understanding and closure could be achieved. Ultimately, all cases we studied were considered as successful acquisitions by the participants.

5. Discussion and conclusion

The results of this study clearly indicate the existence of distinct technological frames of reference. Previous work has predominantly shown that differences in frames account for difficulties and problems during implementation and use. Perceptual differences cause conflicts, and conflicts impact the success of projects, typically in a negative way. However, in the five cases we studied, we find that decisions were made in consensus and jointly by all participants. Although the goals and expectations of stakeholders with respect to the procured software differed, they eventually arrived at mutual understanding. Our evidence suggests that this is due to the fact that during SA projects, IT, business, and procurement managed to share their views and goals. This does not result in a joint and common technological truce frame [as previously reported, e.g., 49], but still in understanding for needs – or, in TFR terms – knowledge, expectations, and assumptions.

Thus, we conclude that it is of crucial importance during SA projects for participants to communicate their goals, beliefs and expectations. This way, decisions can be based on aspects that are most important for all participants and are less exposed to contestation. Perceptual differences can and should be reduced. We believe that these results do not only

apply for SA cases but whenever distinct technological frames are present for social groups and a common decision has to be made.

Our study does also have some limitations. Case study research is always limited in generalizability, interpretive research even more so. The reported results cannot be generalized as is, but they support the relevance of sharing individual motives to achieve common understanding in organizational settings. Furthermore, due to the interpretive nature of our research, the results we described represent the sense-making process of the researchers. We were careful to rely on observed events and statements, but subjective personal judgments cannot be neglected.

Still, this paper offers a number of methodological and theoretical contributions. It is the first study that we know of featuring a multiple case approach applying TFR theory. By evaluating frame contents of the three perspectives and mirrored, perceived frame content, we believe to offer a methodologically sound way to assess not only frame differences themselves but also the perceptions of differing frames. On a theoretical level, we demonstrated the applicability and suitability of TFR theory to software acquisition cases. We find support for distinct frame contents that are acknowledged by participants, which in turn reduces the negative impacts of frame incongruence and perceptual differences that have been discussed in extant literature. Furthermore, we integrated the related but so far distinct research streams of conflict theory, perceptual differences, and technological frames of reference.

Our research is also of relevance for practice. We studied software acquisition processes in large enterprises from a holistic point of view. Including different perspectives right from the start in SA projects and facilitating the sharing of knowledge, expectations, and assumptions might lead to informed and quick decisions, which are perceived as successful and accepted by all relevant social groups.

As for future research opportunities, we encourage interpretive case studies in the field of IS acquisition and implementation. We found this approach to be very rewarding in the understanding of individual participation and sense-making processes. While our approach focused on multiple cases, we encountered projects that were perceived as successful only. Therefore, studies analyzing unsuccessful or 'failed' SA projects might be capable of detailing and extending our work from another point of view. Given the increasing relevance of packaged software, potentially amplified by the rise of software-as-a-service, further research on software acquisition is of overall high relevance for IS research and practice.

6. References

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