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Abstract

Defining the allocation of decision rights for enterprise applications is a crucial issue in IT governance and organization design. Today, emerging delivery models such as Software as a Service (SaaS) defy the notion of the internal IT department as the focal point of centralized governance. Recognizing the importance of this issue, we find that the phenomenon of 'SaaS governance' itself is not yet well understood. Based on two cases of SaaS adoption, we take a process-theoretic approach to investigate the complex interaction between factors that influence in the allocation of SaaS authority. The results suggest that some factors, such as the locus of initiative and the decision for SaaS, interact with absorptive capacities and determine the later mode of application governance at a very early stage. Thus, the initiative for introducing SaaS emerges as an important intermediate variable between the overall IT governance mode and the resulting SaaS governance outcome.

1 Introduction

Firms are socio-technical systems. Any change to the technical infrastructure may also imply a change to the internal organization [18]. When implementing new enterprise applications, business and IT decision-makers face the challenge how to allocate decision rights for the use, management and enhancement of such application. This phenomenon has been commonly identified as an important aspect in IT governance.

In the past, the focus of IT governance has been directed on balancing between centralized (i.e. IT departmental) and decentralized (i.e. business units') decision rights. This appears reasonable, as the internal IT department has been regarded as the focal point of IT delivery. However, emerging delivery models such as Software as a Service (SaaS) are likely to defy this view. With SaaS, a third party comes into play providing large parts of IT delivery, so that business departments may be more inclined to take over large parts of decision authority and application-related activities [8][23][24].

Previous work on SaaS governance has proposed a contingency model including organizational and technical categories to explain in which cases authority for the SaaS application is rather allocated to the business or to the IT side [23]. However, such models follow a variance-theoretic paradigm. Thus, they are hardly able to embrace complex temporal and causal interrelationships between the factors and fail to explain exactly how they are related [16].

In this work, we build on previous models and take a process-theoretic approach to examine the governance of SaaS-based applications. For this purpose, we first define a process model that considers the three actors business, IT and external provider. Then, we illustrate the applicability of this model in two cases of SaaS adoption to explain different governance outcomes. The comparison of the cases reveals some of the complex relationships and path dependencies between the variance-theoretic factors. The model can be used to study further cases of application adoption and better understand the allocation of application governance in each respective case.

The remainder is structured as follows: In the next section we review related work on IT governance, Software as a Service and process theory. Then, in Section 3 we present our process approach for investigating SaaS governance. Section 4 empirically demonstrates the approach in two cases of SaaS adoption. Section 5 summarizes the results and outlines limitations as well as future work.

2 Related Work

2.1 IT Governance and Subdomains

IT governance is commonly understood as a subset of corporate governance aiming to ensure that the IT organization sustains the organization's strategy and objectives [7]. Governance mechanisms are installed on structural, procedural and relational level to connect the stakeholders (i.e. the business) and the entities in authority of information technology (i.e. the IT department or external providers) [17]. While practitioner literature has much focused much on procedural mechanisms and developed several governance frameworks, such as ITIL and CoBIT [17], earlier IS research has related IT governance primarily to the "locus of authority for IT functions" [4], thus to the structural level [17].

Commonly, allocations of IT authority can be classified into *centralized, decentralized and federal* archetypes [4][20]. Weill and Ross [22] propose a more sophisticated framework comprising six governance archetypes (*business monarchy, IT monarchy, IT duopoly, etc.*), which essentially combine the horizontal (i.e. business vs. IT) with the vertical (i.e. executive vs. employee level) distribution of authority. Building on that, a few works demonstrate that firms need to allocate decision authority depending on their strategic goals, context and environment, for example in order to balance between the need for local flexibility versus global standardization [22]. Some authors have also broken down the concept of IT governance to different subdomains, such as infrastructure governance [9] and data governance [11]. Therefore it appears conceivable to draw on governance theory also to explain the mode of governance for Software as a Service, i.e. to explain 'SaaS governance'.

2.2 Software as a Service and Application Governance

Software as a Service (SaaS) refers to an increasingly deployed delivery model, where standard enterprise applications are provided as a service over the Internet [6]. Conceptually, SaaS is attributed to the highest layer of the cloud computing stack [1]. SaaS applications differ from traditional IT delivery inasmuch as they are designed for multiple tenants (i.e. user organizations) that share the same underlying infrastructure [6]. Economically, this often correlates with a subscription-based pricing model as opposed to a perpetual-use pricing model for traditional applications [5].

In order to reach a broad market, many SaaS offerings are designed for web-based mass customization, making it easier for user organizations to adopt and adjust the application to their own company-specific needs [21]. This in turn is likely to have an effect on internal governance structures, as some anecdotal evidence suggests [24]. Once business departments can source new software virtually on a mouse click and practically without upfront capital investment, it becomes harder for IT organizations to justify a 'man in the middle staffing' for SaaS applications [8]. Thus, the SaaS-based delivery model is about to defy the conventional logic behind centralized and decentralized governance.

2.3 Contingency Factors of SaaS Governance

Empirical work suggests that firms allocate responsibility for the same SaaS application in different ways [23]. These authors operationalize application governance by two variables capturing the decision as well as the execution level: *decision authority* and *task responsibility*. Both variables can be either allocated to business, the IT department or an external services provider. Furthermore, their work draws on previous contingency theories [20] and a grounded theory analysis of four cases to propose a number of factors that influence in the allocation of SaaS governance. The following five factors will also be used in course of this research to develop our process approach:

Corporate governance comprises the degree of *managerial autonomy* and the *strategic IT goals*, which can be either efficiency- or growth-oriented. Firms with higher autonomy in the business units are expected to be more inclined to allocate SaaS authority to business. The influence of strategic IS goals has been ambiguous. While IT governance literature suggests that efficiency-oriented IT goals generally correlate with more centralized autonomy [4][17] [22], some evidence suggest that this is not necessarily the case for SaaS applications [23].

Absorptive capacities in this context refer to business and IT knowledge. The more IT knowledge the business organization has 'absorbed', the more likely it is to take over application governance. Reversely, the more business knowledge IT employees possess, the more likely they are to govern the application [23].

Initiative characterizes the part of the organization (either business or IT) that brings up the idea for, and is driving the implementation of the application. It is proposed that the initiating party is also more likely to take over application governance [23].

Specificity refers to the degree of adapting the application to company-specific requirements. For SaaS, this typically takes place through customization [21]. High specificity is reflected in the degree of integration with the existing application landscape as well as with the amount of training required for the users of that application [23]. Therefore it is proposed that a higher specificity also demands more IT involvement in application governance [23].

Finally, the *scope of use* measures whether an application is used by the whole company or only a small fraction of employees [23]. Drawing on the rational of economies of scale, a wider scope of use is expected to correlate with more centralized application governance.

2.4 Variance and Process Theories

The contingency model presented in [23] follows a variance-theoretic paradigm. This class of research seeks to provide empirical associations based on the levels of an outcome (here: allocation of application governance) and its potential predictor variables [16]. While possessing the strength to aim for more generalizable results, variance-based approaches do not explain how the outcomes exactly occur [13]. Process theories are a complementary alternative which focuses on sequences of events over time in order to explain how and why particular outcomes are reached. Thus, the outcomes become at least partially predictable from the knowledge of the process, not from the level of predictor variables [15].

Process theories provide a vocabulary which is apt to study the phenomenon of interest [13]. When integrating factors from variance theories in such vocabulary, however, one should be cautious. Factors should not be understood as predictors of certain events (e.g. the degree of *specificity* of the system causes more work on system integration), but rather as a social action that helps to produce the outcome of interest (i.e. the activity of specifying the system is followed by system integration) [16]. In this study, we bear in mind these fundamental differences when connecting process models with factor models.

3 A Process Model for SaaS Adoption and Governance

In the following we propose a model to analyze the adoption process of SaaS applications with a special focus on explaining the arrangements regarding the governance outcomes of that application. The model comprises elements that define the phases, states, relationships, actors, and domains of governance factors in SaaS adoption.

3.1 Phases

Several approaches have been taken to describe the phases in the adoption of enterprise systems [14][19]. To structure the temporal sequence of action regarding our phenomenon, we define five phases.

The first phase of the model refers to *antecedent conditions and pre-decision* activities. Antecedent conditions are important for any process theory. They refer to the context and historical relationships, which are essentially the outcome of a history of prior activities likely to affect subsequent events [16]. We also aggregate relevant activities here that occur prior to the decision for implementing a certain SaaS application.

Second, the *decision phase* refers to activities and events that are related to the decision for the SaaS application, such as evaluating vendors and preparing the implementation project. This largely correlates with the project chartering phase in [14]. The third phase is the *implementation* itself [19]. It typically comprises a number of activities related to specifying and customizing the SaaS solution as well as rolling it out to the organization. In [14] this is simply referred to as ‘the project’.

Any implementation project is followed by application operation and system use, denominated as the *assimilation phase*. Assimilation in this sense refers to the process in which the application is becoming a routinized element of the firm's activities [2]. Finally, we aggregate a *future phase* capturing such developments prospected to occur induced by the current use of the system.

3.2 States

As indicated, our process model follows the goal to describe the sequence of action that takes place in these phases. The choice on how to discretize this sequence is ultimately a question of the conceptualization of change [3]. While the *radical view* describes change as revolutionary punctuations followed by episodes of stability, the *incremental view* suggest that change rather occurs as a sequence of small evolutionary adjustments. The punctuated equilibrium view combines elements of both views, stating that change can alternate between both forms [3].

We adopt the latter view and define four types of states: *events*, *decisions*, *episodes* and *actions*. Events and decisions represent punctuations which can either follow episodes of stability or concrete actions of small incremental change. For example, the decision to use SaaS is a punctuation within the SaaS adoption process. It can be followed by a series of actions to implement that application, thus causing incremental change. The use of that application can be seen as an episode of stability that, however, may lead to further socio-technical changes.

3.3 Direct and Indirect Relationships

The relationships between these states are directed and characterized by temporal and causal dependencies. We differentiate between direct and indirect relationships. *Direct relationships* exhibit a clear temporal sequence and causal dependency, and thus can also be regarded as transitions that form the process. For example, the decision for SaaS (state A) leads to the action of making a contract with the SaaS provider (state B). This refers to a counterfactual understanding of event causality, if A had not occurred B would not have happened [12].

An *indirect relationship* can be regarded as a weaker causal dependency. For example, the decision for SaaS (state A) is one of the reasons for an IT representative to leave the firm (state C). Here, causality is used in a probabilistic way, A increases the likelihood of C to happen, however, C could also have occurred without the event A and vice versa [12]. Regarding the sequence of action, the time between two indirectly related states may be longer.

3.4 Actors

Most process theories relate the states to different categories regarding the outcome. For example, a social process model on system development maps each event to any of the three outcomes of acceptance, equivocation, or rejection [16]. However, as our change process is less concerned with success outcomes, but with the question of governance between business, IT and the external provider, our mapping relates to the actors. For each state it defines the actor who is mostly concerned with the respective decision, event, episode or action. This does not exclude hybrid mappings, e.g. to business and IT parallely. Graphically this can be illustrated by the use of swimlanes and overlapping boxes.

3.5 Domains of Governance Factors

As Boudreau and Robey [3] note “researchers must specify the actual content of theory”, i.e. the elements that are connected with each other within the theory’s logic. We relate the process states to the factors that are hypothesized to influence in the governance of SaaS applications (see 2.3). These factors are per se scaled to different dimensions. Therefore, we widen their notion to factor domains, or ‘second-order factors’ as Lyytinen and Newman suggest [13], which abstract from these narrow dimensions.

4 Empirical Illustration of the Process Approach: Two Cases

The purpose of this section is to demonstrate the applicability of the proposed model to study governance phenomena by analyzing two cases of SaaS adoption.

4.1 Case Selection

The case material presented here has been drawn from a previous study. SaaS user organizations were drawn from a customer references sites and contacted formally (see [23] for the detailed sampling strategy). Several interviews have been conducted, transcribed, and complemented by secondary material such as company reports and press clippings [23].

Out of this collection, we chose to compare two cases which exhibit strong similarities in variables external to the model (e.g. size, industry, and application type), and a strong variance in the outcome variable (i.e. SaaS governance). The two companies chosen are both large and internationally operating, German manufacturing firms that have adopted the wide-spread SaaS solution Salesforce.com (SF) for customer relationship managment (CRM). Company A has allocated decision authority and task responsibility for SF to the IT organization whereas in company B, SF is governed entirely by the business. The key figures of both companies are given in Table 1.

4.2 Case Descriptions

We use the table structure to compare the cases, describe the major developments during the phases of SF CRM adoption, and complement these with relevant quotations.

Case A	**Case B**
Key figures	
High-tech manufacturing	Machine tools manufacturing
150 m EUR revenue	70 m EUR revenue
1,700 employees	600 employees
40 employees in IT	7 employees in IT
3.5 months SF implementation time (pilot)	1 week SF implementation time
150 pilot SF users, 400 global	60 SF users
Interviewee: Head of Competence Center CRM (A1)	Interviewees: Sales Organizer and SF Key User (B1), IT-Application Manager SAP (B2)

Antecedent conditions and pre-decision phase	
Since its foundation in the late 90s, company A had rapidly grown in an emerging high-tech segment and strongly diversified through mergers and acquisitions. IT-wise, the conglomerate was hardly integrated. For example, sales people did not have real-time information about stocks. Interviewee A1 tells: “IT had a bad image before I started here, ticketing took too long, etc. Also, CRM was a burnt issue. Several initiatives for CRM had been attempted earlier by the business and failed.” In late 2007, the company was forced to restructure and focus on core business. The new strategy called for more global harmonization. In 2008, a new CIO was nominated to lead the new operating model implementation and a corresponding ERP initiative. The new CIO reports on board level, i.e. the IT governance model can be regarded as a duopoly between C-level business and IT [22]. A CRM expert with a strong background in CRM and business consulting (A1) was staffed to address the open issue of CRM, and to find a supplementary solution to the new ERP system.	Company B has a long tradition in producing machine tools and serving customers worldwide. IT had formerly been a department with more than 20 employees, separated into applications and infrastructure management. However, during the times of economic crisis (2003 to 2005), IT has been gradually reduced to a small department of 7 employees. Regarding IT governance, thisndepartment is run as a business monarchy [22]. Our interviewee from IT (B2) explains that “when the board is in the driver’s seat, the head of IT, who is positioned much below this, only has to serve.” Regarding CRM, the business representative (B1) tells: “By the time it turned out that we urgently needed a CRM system. We only used self-made solutions. For example, we exported data from the ERP to Excel files and our sales people wrote their reports on an in-house developed software. Reports were then transferred via email to the headquarters and read into the ERP. Every sales representation had its own database, also the subsidiaries. This caused us to set up something more integrated.”
Decision phase	
The new CRM Manager started the vendor evaluation. “I evaluated the classics, SAP, Siebel, Microsoft and Salesforce, until it was decided that we want to go for on-demand [i.e. SaaS], not on-premise. Then, we went further in the area of SaaS and rated different criteria until we said, ok SF is what we liked best. The decision to go for on-demand came directly from the IT strategy. We had this outsourcing project and the guideline was to operate internally as few servers as possible.” The reasons that spoke in favor of SF were usability, support for mobile devices and foremost “our CIO wanted transparent costs”. Security issues were not a concern, particularly not in comparison to traditional outsourcing: “If you look at the security concept of SF, I would even say that this is better than the security concepts of our outsourcing partners”. Costs were not major criterion either: “Of course, at some point you are break-even, for example after four years, but we did not calculate this scientifically.” The company decided to conduct a pilot rollout of SF in one region (Spain) first, in order not to interfere with the ongoing ERP rollout in Germany.	The business started the CRM vendor evaluation. “Finally three vendors were at choice, two server-based systems and Salesforce.” The IT raised concerns regarding data security for the SaaS solution, but finally needed to make an exception. B2 says “it went back and forth who decided, and finally business has won”. B1 opposes that “it was only the decision of our CEO, who was at the vendor presentation. I had agreed on SF beforehand with the Head of Sales, so it was just a matter of giving the final ‘Go’.” The main motivation for SF was to disburden the IT department. Besides, other criteria such as multi-language support mattered. According to B1 “functionality was not decisive” and cost was no major criterion either: “Over a period of five years there was no major difference in total cost.”. In course of the decision for SaaS, the SF responsible on IT side left the company and handed over the topic to our interviewee B2, who states: “If the thing [CRM system] had been with us, my colleague would probably not have left the company that fast.” The contract with SF was closed in 2006.

Implementation phase	
In order to guide the pilot rollout, a Competence Center CRM was established and staffed with a second CRM expert for the Spain rollout. The Spain pilot was rolled out in two legal entities, replacing a number of local databases and Excel tools. A1 emphasizes: "We worked with an external partner there who conducted workshops, documentation, and took over customization, testing and user trainings. We gained a lot of experience by this how SF works and how it's customized. The project took about 3½ months." Integration with backend systems was done later, after the go-live of the ERP system in 2009 and the global rolling of SF. "The integration with the ERP caused some IT efforts since they [the ERP team] implemented the interfaces themselves. […] Now we exchange data such as offers, orders, bills, delivery receipts, products and prices. So there is a lot happening". One of the things that was underestimated during the rollout was the effort for change management. A1 states "you need change management people on the project who explain things to the other users. This is always a very critical point, especially for CRM projects. There are many things that change, sales people need to disclose their figures – a thing which no sales person likes to do." The issue was addressed by trainings, communication and later "developing strong key users in the regions and business units."	The Sales Organizer (our interviewee) wrote the technical specification together with a consultant from Salesforce. The next task was data migration. The business respresentative (B1) "had to prepare the existing spreadsheets, documents and data from the ERP" to import them into SF. At this point, the IT was not involved into the rollout activities at all. The actual rollout activities were carried out by the Sales Organizer, the SF consultant and an external integration partner. B1 notes that "alone we would not have been capable of doing that". Together with the SF consultant, the system was customized according to the specification. B2 states: "We only needed five workdays for the specification, not more". The responsibility of the integration partner was to program an interface to the ERP, which created the largest effort. IT was involved here to provide adequate connectors. B2 explains: "we created a one-way interface to SAP that polls the data from SAP and sends it over an i-doc connector to SF. Our man only provided the things that were required and later took over maintenance of the interface" Trainings were not a major issue. B2 states that "the business [i.e. (B1) himself] trained all the users. That went without complications. It was not more effort than for other applications, maybe even less."
Assimilation phase	
SF was first provided to the 150 users in Spain and then incrementally taken into use by Germany, the US and other legal entities, currently counting about 400 users. First level support is provided by global help desk, second level requests regarding SF are forwarded to the Competence Center CRM, by now a team of three experts. This team also decides on requests for changes and implements them in SF. More than that, it understands itself as a consultant to the business. "We are positioned very consulting-like here and do the specification, implementation, training and testing. Most of us also come from consulting, i.e. they have the business process expertise as well as the technical expertise. Therefore we are also able to customize the system ourselves." In terms of the technical interfaces to SF, there are some discernable efforts also for the ERP team. "I guess the effort is about 1 one person-day per week. That's just because we built this buffer-acknowledge-database. That was programmed by the ERP team, so they have quite some effort with maintaining this." B1 reports that tickets for SF are even increasing due to a certain loop for further enhancements: "The people know that you can do a lot with SF, so they to push further processes into SF. Some business experts are really demanding a lot."	The system is currently used by 55 employees in the sales department, "a hand full of users in the production areas and by the foreign subsidiaries in China, the US and Italy." First level support for these users is provided via the classic incident management by IT, second level requests for SF are then passed to the SF Key User. Requests for changes from the users are collected and evaluated by B1, who is also in charge of implementing them. B1 states: "we have to consider the tight personnel situation overall and in IT. Existing positions have not been staffed […], so that inevitably I have to take over things which are usually not part of my job description" Regarding involvement of internal IT he continues "for SF we only have one touch point with our IT, which is the interface to SAP [i.e. the ERP system]." In case of special customizations, the business would directly contract external partners, for example for a module to print reports of onsite visits: "That was an external partner working for us, and it also went without IT. The requirements came from us, and utimaltely IT was not involved", B1 adds. Regarding future enhancements, B1 gives into consideration that "I would love to do more things in SF, but unfortunately I don't have the time for it."

Future	
Overall, the Head of the Competence Center (A1) would agree that his “IT people can perform higher value work through working with the external solution.” The CIO has received positive feedback from business, “which was not normal. It was just because we can react fast.” Based on the company-wide use and assimilation, a new strategy evolved to exploit SF for further global harmonization. “It was mid last year that we said, there is no use if the CRM templates are different in each country. So now, every country will get the same core template.”	Since introducing SF, further SaaS-based enterprise solutions have been used, such as document management and enterprise content management. However, those are not as widely used and as integrated as SF. B1 also states: “I would appreciate if I could perform minor customizations also in the ERP, without going via IT. That wouldn’t be of a disadvantage for the company. It is just the decision that all customizations of the ERP stay with IT – for other applications this is different.”

Table 1: Case data

4.3 Processes of SaaS Adoption

We modeled the two cases of SaaS adoption according to the proposed model. The resulting processes are depicted in Figure 1. For space constraints we only display a rough overview.

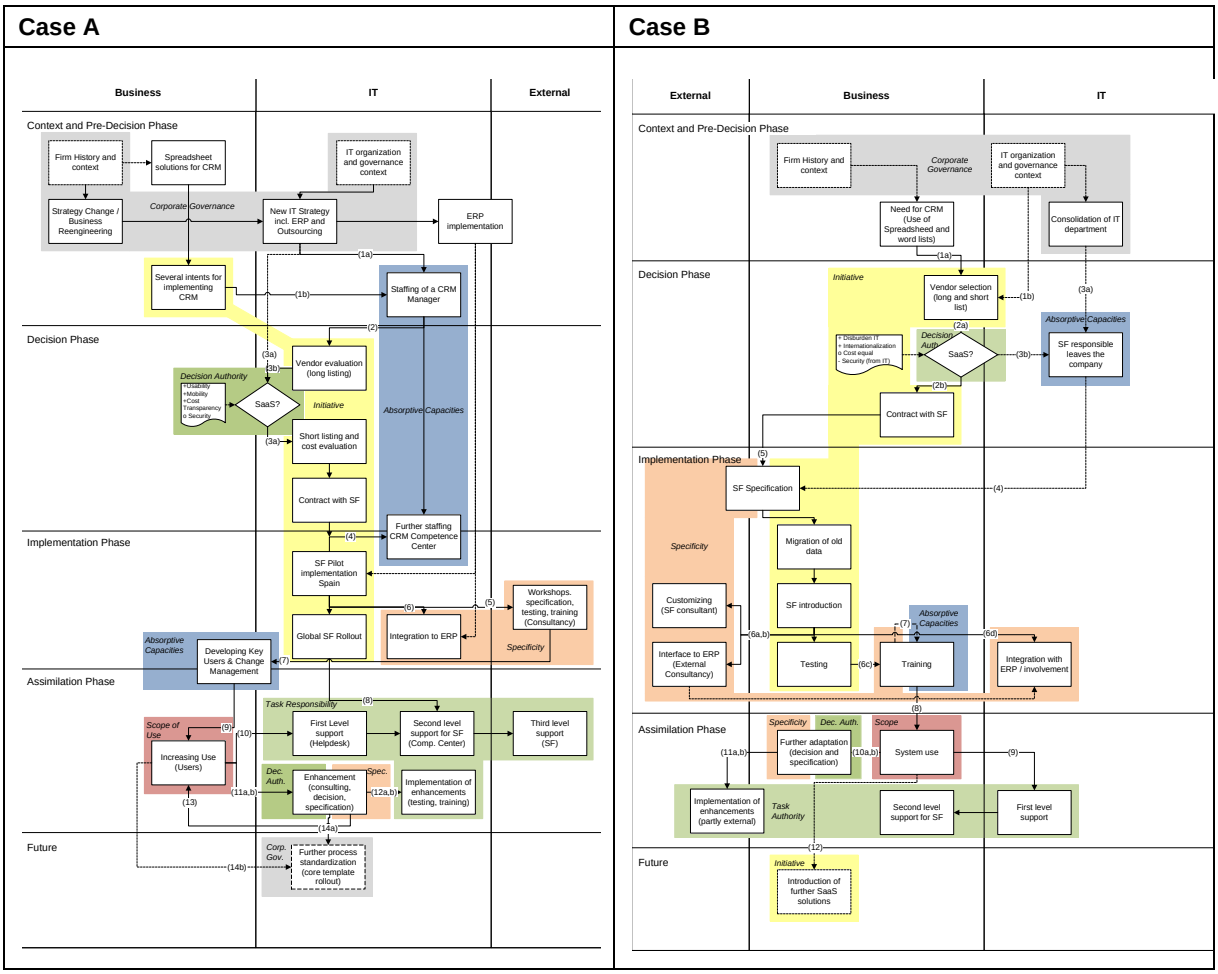

Figure 1: SaaS Adoption Processes

States are represented by rectangular shapes (diamonds for decisions). Direct relationships are depicted as solid lines and indirect by dotted lines. Furthermore, the states have been mapped to the respective factor domains, which are also expressed by different color shades, see Figure 1.

4.4 Factor Interrelationships and Case Comparison

In order to obtain information about the relationships between the factors of SaaS adoption from [23], we aggregate both processes according to the factor domains. This aggregation omits relationships between states of the same domain and therefore focuses on the direct, as well as indirect inter-domain relationships. As a result we obtain a partially directed graph which describes the relationships for each of the cases qualitatively, see the Figure 2.

For coherence, the relevant relationships have been numbered in each of the figures. While the two interrelationship graphs are not identical, we can still identify some common paths through the graph. For the purpose of interpretation we will compare both cases along this dominant common path.

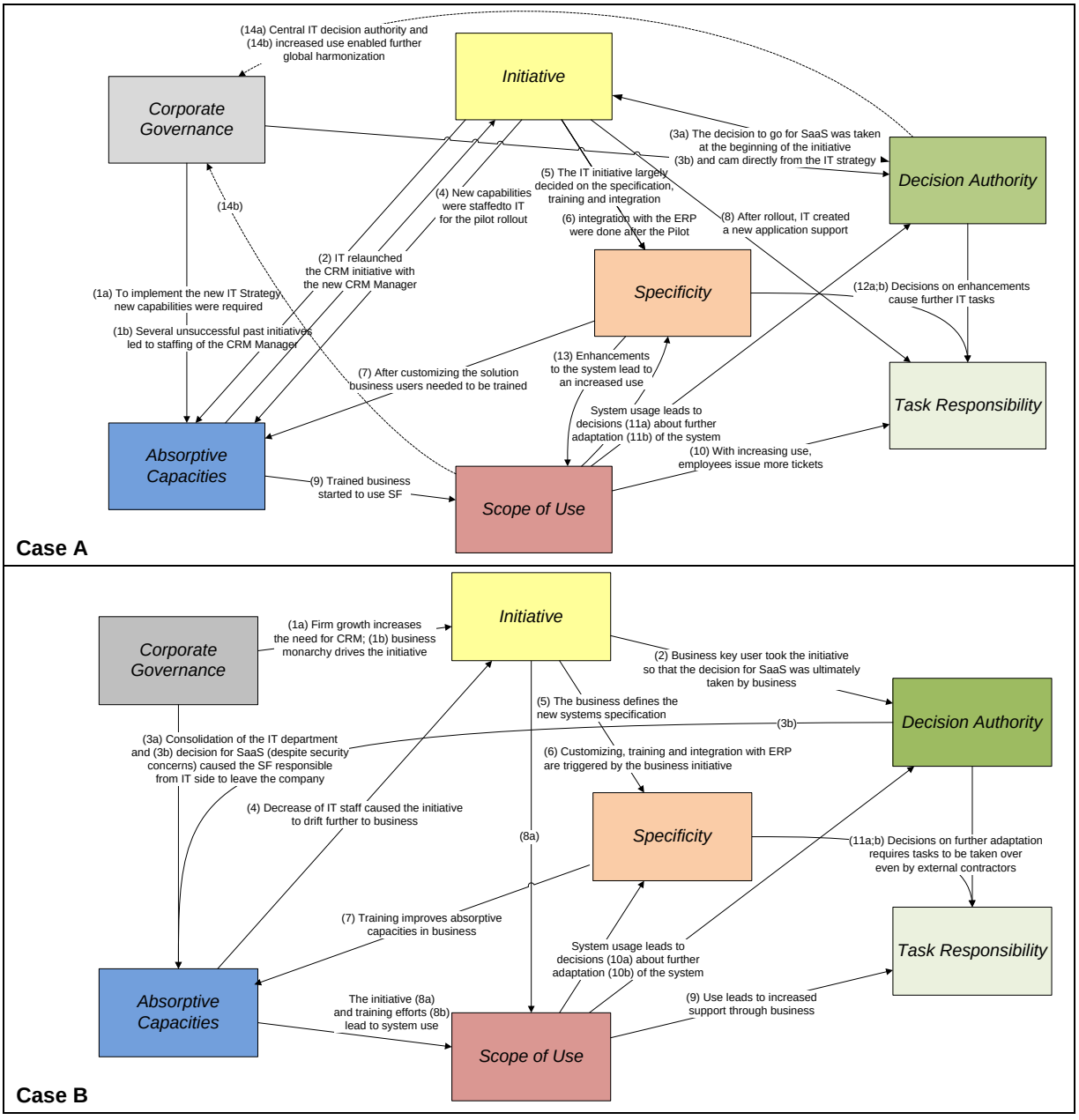

Figure 2: Interrelationship of Governance Factors

Corporate Governance ⇨ Absorptive Capacities ⇦ Initiative: Corporate governance is the starting point for both processes. For company A, the IT strategy led to staffing a new CRM Manager who brought about special business- and IT-specific knowledge (i.e. absorptive capacities) and took over the initiative for the CRM project. In company B, the business-centric overall governance mode, as well as the efficiency focus in corporate and IT governance, led to anchoring the initiative in the business. This tendency was reinforced by losing key IT personnel, such as the SF responsible on IT side, over the discussion on security issues. This, we argue, led to a further shift of the initiative towards the business.

Initiative ⇦ Decision Authority: We observe that the actual decision authority over the later SaaS operation is already manifested in the party that largely decides on the question for or against SaaS. In case A, this is the IT department, where the final decision for SaaS came from the new CIO's IT strategy. For case B, this is the business, so that we assume that these two domains are closely related.

Initiative (*⇦ Absorptive Capacities) ⇨ Specificity:* Next, the initiative driving the SaaS implementation strongly influences the specificity of the system. In case A the IT, more precisely the Competence Center CRM did large parts of the customization work, yet relying strongly on external partners for the pilot rollout. Thereby, and by staffing new capabilities to the Competence Center, IT has also gained crucial knowledge for future application governance.For case B, the system has been largely specified and adapted to company requirements by the business representative and external support. Comparing the project durations and the amount of work for training and integration, we may assume that the degree of specificity is considerably larger in case A. Reversely, we may also conclude, that in case B less change management and training efforts for business users was required, due to the fact that the initiative was already directed from the business organization.

Specificity ⇨ Absorptive Capacities ⇨ Scope of Use: Consequently we deduce that through change management and training, more absorptive capacities are built on the user side. This in turn leads to an increased use, and thus scope of use of the system. Especially in case A we observed that system use did not occur instantly, but as a development. This may also be related to the larger training efforts in case A.

Scope of Use ⇨ Decision Authority ⇨ Task Responsibility: Increasing use of the system consequently leads to more decisions on changes and their respective implementation. Case B shows that, in absence of internal capabilities, the task responsibility for such further enhancements is contracted out to external partners. In contrast in case A, the IT department is handling SF-related activities (i.e. change implementation and support) largely on its own.

Scope of Use ⇨ Specificity (⇨ Scope of Use): At least for case A, the ongoing enhancement of the system and adaptation to specific business processes can also be interpreted as a reinforcing cycle. A higher specificity is leading to an increased use, which in turn creates more demand to enhance specificity, as long as the demand can be satisfied.

Further indirect effects: In case A we learned that this system enhancement is also impacting again the overall governance mode, inasmuch as a further business harmonization is enabled. For case B we might argue that the SaaS initiative itself has triggered further initiatives to implement SaaS for other enterprise applications.

5 Conclusion

In this work we took a process-theoretic approach to better understand the complex interaction of factors that influence the allocation of authority for SaaS-based applications. Therefore we first proposed a process model that is suitable to examine governance in application adoption processes. Then we illustrated the applicability of the model in two cases of companies using SaaS for CRM, and explained the different governance outcomes.

A few conclusions can be drawn regarding the causal relationships and path dependencies between the factors. First, regarding corporate governance we outlined how strategic IT goals as well as the overall mode of IT governance have a bearing on the initiative and where it is coined. The locus of initiative, as well as the decision for SaaS as a culminating point, seem to determine at a very early stage which party is likely to take over decision responsibility for later application operation. Thus, the initiative emerges as a central variable that connects the overall mode of IT govance with the later SaaS governance outcome. However, the initiative as such also interacts with absorptive capacities. On the one hand, existing capacities influence the degree of involvement of the parties, both business and IT, into the initiative. On the other hand, capacities are also increased through the initiative, for example through staffing or training new staff. We also find that application specificity and scope of use cannot necessarily be regarded as exogenous variables. They are determined at a rather late stage of the process and interact with variables such as absorptive capacities and the governance outcomes.

The chosen approach possesses some inherent limitations, foremost regarding generalizability. Since we focused on the SaaS segment for CRM, these results cannot instantly be transferred to all types SaaS applications. Also, the process modeling and assignment to factors may not always be straightforward due to the interpretive approach taken in this research. Finally, the sampling of two cases cannot be regarded as sufficient to produce stable results regarding the relationships between the factors.

However, the results generated here represent valuable insights as they add a new complementary dynamic view to the contingency model presented in [23]. Such temporal and causal interrelationships can be particularly of interest when advancing from a contingency model to more complex path modeling and analysis techniques, such as structural equation modeling. An analysis using a much broader basis of quantitative empirical data is currently underway as further research.

Furthermore, the proposed model can be regarded as a first step to conduct more process-theoretic research in the domain of IT governance. This appears reasonable, as governance can be regarded as a highly dynamic construct that changes throughout various IT implementation contexts. As more research and practical experiences regarding SaaS governance accumulate, our hope is that more precise elements can flesh out the content of the proposed model and improve its predictive power.

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