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# Enhancing IT Governance Through Liking Mechanisms

Christina Garner Sixhøi  
*Aarhus University, Denmark, [Christinasixhoi@gmail.com](mailto:Christinasixhoi@gmail.com)*

Lea Lucie Larsen  
*Aarhus University, Denmark, [Lea\\_lucie@hotmail.com](mailto:Lea_lucie@hotmail.com)*

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# ENHANCING IT GOVERNANCE THROUGH LINKING MECHANISMS

*Research full-length paper  
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Sixhøi, Christina Garner, Aarhus University, Denmark, Christinasixhoi@gmail.com

Larsen, Lea Lucie Askholm, Aarhus University, Denmark, Lea\_lucie@hotmail.com

## Abstract

*IT governance, the allocation of IT decision rights and the organizational IS structure, becomes more and more relevant, as it addresses the activities using IT in achieving the company goals and increasing company performance. The focus in this research is on the alignment and coordination of the six stakeholder groups introduced in the IT engagement model by Fonstad and Robertson, 2006.*

*The researchers present a case study of a well-founded organization with successful business units. The company has multiple franchises and few company-owned subsets to be coordinated and aligned. This paper suggests potential linking mechanism-initiatives with multiple attributes for increasing company performance by the use of IT governance.*

*This research contributes to the problem setting of the case company by providing initiatives for the problem at hand. The research further contributes to the area of concern in the confirmation of the applicability of combining theories within an IT governance theory. The combination was essential to the results of the analysis. Furthermore, the research contributes to expanding the area of concern by presenting suggestions of linking mechanisms that ease the understanding of the applicability of IT governance theories. Finally, the applicability of the IT engagement model as a structuration theory is confirmed and characterized as a contribution to the framing theory.*

Keywords: IT Governance, IT Engagement Model, Linking Mechanisms, IT Decisions, IT Archetypes, Organizational IS Structure, Technological Frames, Alignment, Coordination

## 1 Introduction

IT governance is about encouraging desirable behavior when using IT to achieve the company goals (Weil & Ross, 2004). Within IT Governance the IT engagement model by Fonstad and Robertson (2006) is applied. According to the model, alignment between business and IT and coordination between company, business unit (BU) and project team level will optimize company performance.

A company may have considered their use of IT governance and have successful BU's, but without the linking mechanisms, the corporate strategy may not be aligned. Without the strategic alignment between business and IT initiatives firms may not be competitive and successful. Engagement leads to IT effectiveness, which leads to greater business profitability (Avison, et al., 2004).

Søstrene Grene Import A/S, a Danish company founded in Aarhus, is an example of a large, international company with a solid corporate strategy and successful BU's. The company has multiple franchises and company-owned subsets (Søstrene Grene, 2016), which implies that the company might be dependent on IT governance to support the company performance.

Through a preliminary explorative conversation with a representative of Søstrene Grene (SG), it became noticeable that the company may not coach their store managers thoroughly enough, the headquarter (HQ) may be too busy to pay attention to suggestions of improvement which could lead to missed opportunities and in general a delayed understanding of the operational processes in the BU's. All elements indicate that SG may not emphasize the linking mechanisms coordinating the company from project team level through to company level.

This research seeks to analyze IT governance in SG with focus on the structure and decision rights of the company and the alignment and coordination of the six stakeholder groups introduced by the IT engagement model.

The purpose of the analysis is to have the results conclude whether there can be executed any initiatives in decision rights allocations, organizational IS structure and potential linking mechanisms for reaching a possible ideal for a company wanting to improve IT governance. From the problem statement following research questions have been derived;

1. *How could decision rights allocation reflect in a company's organizational IS structure, in constituting the IT governance?*
2. *How can a company's performance be improved, based on their competencies, by IT governance?*

The research evolves upon the style composition by Mathiassen et. al. (2012). The style composition describes how the research questions are formed by the methodology, problem setting, area of concern and framing theory. The analysis provides the findings and from the findings the contributions derive (Mathiassen, et al., 2012). The area of concern and the framing theory are described in 'Theoretical Background'. The methodology is the described the section, 'Research Approach' and the problem setting is described in the introduction and the case section. The research contributions are to be discussed in the discussion section of this paper.

## **2 Theoretical Background**

This section provides an overview and a description of the theories applied to this research.

### **2.1 IT Governance**

IT governance is the area of concern, also referred to as the main theory from which the following models applied are derived.

IT governance focuses on the decision rights, granting authority and defining expectation within the company (Pearlson & Saunders, 2013). The decision rights must be granted throughout the company, as it indicates who gains responsibility, to initiative, supply information for, approve, implement and control various types of decisions (Pearlson & Saunders, 2013). The decision rights granted should match with the accountability for the decisions made (Pearlson & Saunders, 2013; Weill & Ross, 2004; Weill, 2004).

Within IT governance, Weil (2004) proposes five major IT decisions and six IT archetypes. The five major IT decisions are categorized to be decisions within; IT principles, IT architecture, IT infrastructure strategies, business applications needs and IT investments and prioritization. The archetypes are decision right allocation patterns. The IT archetypes are used to identify the combination of individuals who either input information or have decision rights for the key IT decisions (Pearlson & Saunders,

2013; Weill, 2004). The IT archetypes are ‘Business Monarchy’, ‘IT Monarchy’, ‘Feudal’, ‘Federal’, ‘IT Duopoly’ and ‘Anarchy’ (Weill, 2004). Depending on how the decision rights are allocated, they will reflect a centralized, decentralized or federalized IS structure.

The organizational IS structure theory reflecting a centralized, decentralized or federalized IS structure is primarily an independent theory from the archetypes. A centralized IS organization involves having all resources at a single position. Decentralization spreads these resources into different positions to obtain BU needs (Pearlson & Saunders, 2013). The hybrid approach to organizational IS structure, the federal approach, allows the organization to obtain the best of both polar positions.

The organizational IS structures are paired with the IT archetypes. IT archetypes granting decision rights and input rights on C-level only reflect a centralized IS structure. The archetypes reflecting centralized structure are ‘Business Monarchy’, ‘IT Monarchy’ and one of the two ‘IT Duopoly’ combinations, which is decisions made in agreement between business and IT executives, the centralized ‘IT Duopoly’. Archetypes granting decision rights and input rights only at BU level or group level are perceived to reflect the decentralized structure of IS. These archetypes include ‘Feudal’ and ‘Anarchy’. Federalized organizational IS structures are archetypes that combine the executive level with the BU and/or group level. These archetypes include ‘Federal’ and the second version of ‘IT Duopoly’, which is when decisions are made between business and IT at different organizational levels.

The two theories, ‘Organizational IS Structure’ and the ‘IT Archetypes’ reflecting the different organizational IS structure, are applied independently and the organizational IS structure results of each are then compared.

## **2.2 The IT Engagement Model**

The IT engagement model is a model developed within the IT governance. The IT engagement model is based on two fundamental goals; alignment between IT and business, and coordination across organizational levels (Fonstad & Robertson, 2006).

The model is used as a tool to analyze SG through all six stakeholder groups and the linking mechanisms, providing deep insight to the structure and performance of SG. The IT engagement model consists of three components; company-wide IT governance, project management and linking mechanisms, where the importance of linking mechanisms may often be overlooked (Fonstad & Robertson, 2006).

‘Company-wide IT Governance’ in the IT engagement model refers to the decision rights allocation of company level and BU level (Fonstad & Robertson, 2006). It is important to stress, that these are not viewed as one component in this analysis, as this research will handle the organizational levels individually. Another key element is developed as a fourth element for the theoretical application of the IT engagement model, ‘Business Unit Management’.

Within ‘Company-wide IT governance’, this research will analyze each theory under IT governance at company level. Such analysis will reflect how well the company is able to develop, perform and communicate IT governance.

The ‘Business Unit Management’ will include an analysis of how BU’s are managed, and if and to what degree the two stakeholder groups of the BU level reflect SG’s IT governance.

The ‘Project Management’ element is approached by analyzing if and how SG assess and controls projects, and if and to what degree SG incorporate their IT governance in projects.

The six stakeholder groups are analyzed in terms of how well they reflect IT governance across all three organizational levels. The six stakeholder groups are; ‘Company Strategy’, ‘Business Unit Strategy’, ‘Project Plan’, ‘Enterprise Architecture’, ‘Business Unit Architecture’, ‘Project IT Architecture’ (Fonstad & Robertson, 2006).

‘Linking Mechanisms’ is the element of the IT engagement model, that aids coordination and alignment. By using linking mechanisms, the company can distribute the risks and responsibilities for achieving the company strategies and goals (Fonstad & Robertson, 2006). The company will balance the different organizational levels’ interdependency against the corporate standardization through linking mechanisms (Fonstad & Robertson, 2006). The IT engagement model introduces three types of linking mechanisms; ‘Business Linkage Mechanisms’, ‘Architecture Linkage Mechanisms’ and ‘Alignment Linkage Mechanisms’.

The IT engagement model is part of both area of concern and the framing theory. When the IT engagement model is part of the area of concern, it is used to interpret the data for the problem-solving. The model is part of the content analysis. As the framing theory, it guides the actions towards problem solving. It is used as the theoretical structure of the analysis.

### 2.3 Technological Frames

Technological frames are included as a theory applied to grasp the respondents’ understanding of technology, which influence their interaction with and use of technology. Individuals have different opinions, interpretations and expectations about the function, value and role of technology (Orlikowski & Gash, 1994).

This research interprets technological frames group-based, which constitutes that a group of individuals shares assumptions, knowledges and expectations (Orlikowski & Gash, 1994). In this research, the understanding of technology will depend on the positioning in the organization, e.g. IT department, BU managers and corporate level executives in SG.

Perceived by the researchers, incongruence is when there are missing linking mechanisms as a risk introduced by the IT engagement model. Congruence may reflect the overall goal of the IT engagement model; to engage all six stakeholder groups through coordination and alignment.

### 2.4 Framing of The Analysis

The analysis will follow the structure of the IT engagement model, already introduced as the framing theory. Within the framing theory, the additional theories are applied to the analysis. These can be viewed in table 1. Each subsection will provide an analysis that will be coherent with the next subsection.

<b>Framing of The Analysis</b>	
<b>Company-wide IT Governance</b>	IT Decisions & Archetypes
	Decision rights & Allocation
	Organizational IS Structure
	Company Level

<b>Business Unit Management</b>	Business Unit Level
<b>Project Management</b>	Project Team Level
<b>Linking Mechanisms</b>	Technological Frames
	Linking Mechanisms

Table 1. Framing of The Analysis

### 3 Research Approach

This research applies a qualitative research method. The qualitative approach encourages complex elements best measured through participant perspectives and experiences (Curry, 2015). This research takes a deductive approach to the qualitative research, as theory is used as the first source of knowledge (Bryman & Bell, 2015). This research approach is done to support the explanatory approach of the research question.

The philosophical considerations are based on the social constructivism, as subjective meaning is taken into consideration when interpreting the findings. In order to understand these subjective perspectives of social actions the research uses the epistemology approach interpretivism.

This research is based on a case study of a single organization, Søstre Grene. It is an intrinsic case study, because of the insight to the particularity of SG's situation (Bryman & Bell, 2015; Lee & Baskerville, 2003). The aim of this thesis is through empirical application to confirm a theory. The findings of the analysis were sought to be a confirmation of the utility of the combined theories in SG's setting. If the setting is similar to the SG setting the findings should provide some generalizability.

#### 3.1 The Case

The case company, Søstre Grene Import A/S, is a Danish retail chain established in Aarhus in 1973. SG operates after six values representing the concept of the stores, which are considered when operating at the company level and throughout to the project level. SG do not have one major strategy; they have several strategies depending on the goal. The main focus of SG is expansion, which is an important part of the business development and strategy. The strategy of the BU's is to make sure that the customers get the same experience no matter which store they enter.

The business model of SG is primarily franchises, company-owned subsets and a few joint-venture stores (Søstre Grene, 2016). SG is represented in 12 countries with approximately 140 stores (Søstre Grene, 2017). SG has four company-owned stores which are run by a district manager. The HQ of SG is placed in Aarhus. SG employs approximately 260 individuals at the HQ and their own stores. The IT department is placed at the HQ and supports the worldwide network of stores. The IT department consists of 13 employees, exclusive any external consultants included in projects. It is a centralized approach when considering the resource allocation concerning IT.

Part of the franchise agreement that SG sign with their partners, include that the franchisees must do the majority of what SG asks for, which includes the use of IT in the BU's. The HQ has a lot of control over the concept and business operations, as the franchise agreement is very strict. It is described by the CEO, how it is a major part of the company's development to maintain the control of the BU's in a realistic extent considering the BU's being franchises. When the company engages with a new

partner, SG delivers all IT and the additional support to the stores, this includes the ERP; Microsoft Dynamics NAV, the POS system and other hardware. By having the same main IT systems in all BU's, SG is able to compare data between the stores and across countries from the department in Denmark. This centralized approach provides SG with a common system standard and subsequently common standard operations. When SG develops a new system or function, they push the initiative to the BU's. Every store gets any new functions and systems developed at HQ, thereby the same setup.

The BU's of SG have control of some IT priorities, as they hold ownership of secondary IT systems. BU's can e.g. apply their own wage systems. It is not part of the franchise agreement, what systems they should use besides the NAV and POS system.

Every time SG considers developing a new project, they contemplate how their values may reflect in the project at hand. According to the CIO the six values are incorporated in every decision making concerned with the development of new functions. SG are currently developing a system for handling request for business application needs. The intention is to gather ideas to be considered when new projects are being developed, reflecting responsiveness to BU needs.

The case takes its offset in one of the company-owned business unit. The business unit is placed in Denmark, at Søndergade in Aarhus C. It is managed by the district manager of the company owned stores.

### **3.2 Data Collection**

This thesis collects empirical data through semi-structured interviewing. The research applied purposeful sampling, which allowed for choosing respondents based on the relation to the topic, ensuring the comprehensive insight to the context (Curry, 2015). The purposeful sampling is done to ensure information rich answers.

An interview with the CEO was chosen to define the overall strategy of SG and get an insight in the corporate level of the company. An interview with the CIO was conducted to learn about the IT architecture and the considerations behind the IT related decisions in SG. A third interview was conducted with the district manager, as he represents all the BU's of SG. The purpose of the interview with the district manager is to establish a knowledge about the operations of the BU's and their connection to the HQ, including the IT department. It was relevant to explore the district managers understanding and use of IT in the business.

### **3.3 Data Analysis**

When analyzing the data, codes are applied and a code structure is developed. There was developed a brief justification of each code to serve as guidance for when and how to use the codes (Curry, 2015). The data analysis approach is deductive, and represents an iterative interpretation of the data by applying the constant comparative method (Curry, 2015). An overview of code categories and the amount of appearances in the data can be viewed in appendix 1. The amount of appearances was used to identify areas of interest.

## **4 Findings**

SG was analyzed by considering the IT decisions and IT archetypes in each type of IT decisions and through analysis on how this might reflect in the independent analysis of the organizational IS structure. The findings of the decision rights allocation patterns showed the IT archetype, 'IT Duopoly', to

be the most dominant decision archetype within SG. This archetype reflects central organizational IS structure, as it was decided upon c-level between business and IT representatives.

The analysis independent of the archetypes, showed centralized and decentralized elements of SG's organizational IS structure. From these findings, the researchers concluded, that through the individually done analyses, the organizational IS structures, did not concur. It was the combination of the two analyses, that made it possible for the researchers to comment on these differences, determine any misalignment or lack of alignment, and how to solve these by implementing linking mechanisms. The theory application of the combined IT archetypes and organizational IS structure proved to be empirical for the identification of the present and future linking mechanisms.

Through the above-mentioned analyses, a preliminary IT governance of the case company was determined to be the effort to place decision rights with the individual(s) most competent to make the decision. Afterwards, the three organizational levels of the IT engagement model were analyzed in terms of how well the stakeholder groups of each level reflect and/or affect the preliminary IT governance.

Through the analyses of the stakeholder groups at each organizational level, the linking mechanisms are the initiatives to be analyzed, reflecting how SG uses IT governance in becoming a good IT organization. In general, the linking mechanisms are initiatives enabling coordination and alignment, hence engagement leading to good IT governance.

The linking mechanisms identified and proposed through the analysis are viewable in table 2. The business linkages are represented by number 1 and 2, the architecture linkages by number 3 and 4 and the alignment linkages by number 5.

Type of Linkage					Linking Mechanism	Description
1	2	3	4	5		
		✓	✓		Common System Standard	Having a standard main system throughout the entire business.
				✓	IT capabilities in strategic decisions	Making business and IT key decisions in collaboration.
				✓	BI reports	IT department performs analysis on data to improve business processes.
		✓	✓	✓	Communication	Informing the employees of IT initiatives.
✓	✓	✓	✓	✓	Idea gathering	Learn about and fulfill business needs towards IT.
✓	✓				The values of the company	Strategic values must be incorporated through the organizational levels of the IT engagement model.

✓	✓				Concept manuals + education	Having the education of the concept being the main source of knowledge and the concept manuals to serve as continues guidance.
		✓	✓	✓	IT manuals + education	Having the IT education being the main source of knowledge and the IT manuals to serve as continues guidance.
✓	✓			✓	Business linkage position	Having a position being representative for all the BU's and to pull any potential IT initiatives from the business needs.
		✓	✓	✓	Shared technological frames	Secure a shared technological frame between IT and business; executives and BU managers.
				✓	Congruence in IT decision rights	Agreeing on who decides what kind of IT decisions.

Table 2. The Linking Mechanisms

A specific combination of two identified linking mechanisms and the preliminary IT governance of the case company, are analyzed to be the key initiatives for SG to improve IT governance and how such will improve company performance. This is to be described in detail.

### IT governance enhancing company performance

The linking mechanism proposing to educate the BU managers, leads to an increase in the managers' knowledge about essential IT aspects. The essential IT aspects are within three categories; function, value and the role of technology. An example of such could be to understand how the different information systems interact.

When their knowledge increases to a certain level of understanding about how IT benefits can support business strategy at all organizational levels, the individuals come to share a part of the technological understanding with the C-level, which aids in the architecture coordination. If the BU's see the benefits of using IT and improve their usage, the business processes become more efficient and company performance improves.

Additionally, if the BU managers get educated about the essential IT aspects, they can represent the BU level as an individual with a competent level of information to become part of the decision-making process, thus gaining possible decision rights or input rights.

The IT governance of SG is to place decision rights at the individual with the best competencies and capabilities to make the type of decision at hand, which the above-mentioned will aid towards by including BU's in the decision-making process. Enabling and enhancing IT governance is done through constantly building common understanding through continuous engagement and by summarizing business needs. The steps analyzed to be useful in practical application, based on this case study, are presented as an iterative process and can be visualized in figure 1 below.

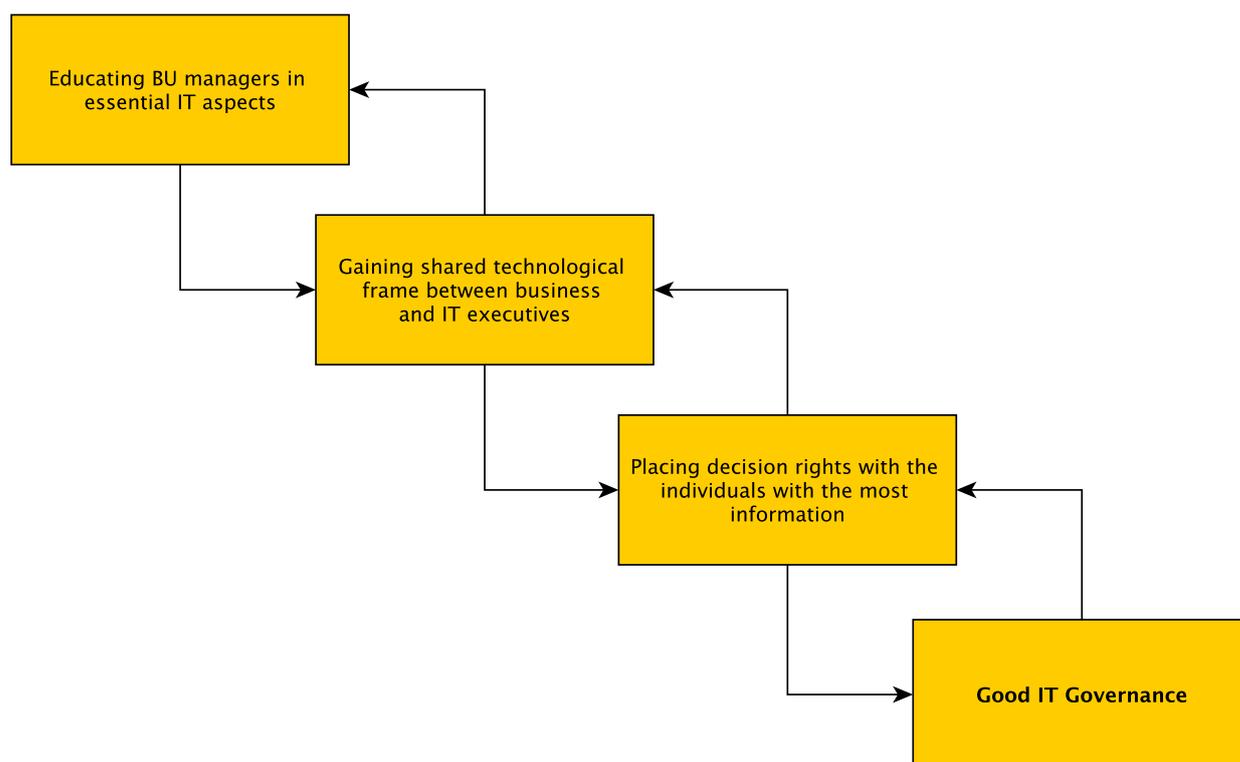


Figure 1. IT Governance Enhancing Company Performance

## 5 Discussion

This discussion section will evolve around the style composition of this research. The researchers will discuss to what degree this research will contribute to the four elements of the style composition; 'Methodology', 'Framing Theory', 'Area of Concern' and 'Problem Setting'. As mentioned the findings are guided by the RQ's and the contributions are based on the findings.

### The contribution to the Methodology

Through this research there have not been contributed to the method being applicable in a new context, but a confirmation that the chosen methodology aided towards answering the RQ's.

### The contribution to the Framing Theory

The researchers can confirm that the IT engagement model helped structure the actions and analysis throughout the study. The essential aspects of the IT engagement model were used as framing elements to especially support findings that would aid towards answering the RQ's. The result of this analysis contributes to the framing theory, as it is shown that it can be used practically to structure an analysis. The additional element 'Business Unit Management' reflects a limited contribution to the framing theory.

### The contribution to the Problem Setting

The IT governance was implicit in the structure and decision rights of the company. The researchers made it explicit and applied it to the analysis of the six stakeholder groups introduced by the IT en-

agement model. From such analysis, the researchers were able to determine linking mechanisms and how this would aid in enforcing the IT governance identified through the entire analysis.

The contribution to the problem setting was found in the analysis of the linking mechanisms were the researchers introduced several initiatives to help the case company, SG improve their IT governance and thereby improving the company performance.

### **The contribution to the Area of Concern**

The researchers applied and adjusted the IT engagement model to improve how this research gained a special insight in IT governance. The research combined theories within IT governance, and applied the theories as part of the IT engagement model, including 'Technological Frames' as input to linking mechanisms. The researchers used the specific combination throughout the analysis, and can confirm that these are applicable and highly beneficial for the in-depth analysis.

The combination of the five theories; 'IT Decisions & IT Archetypes', 'IT Decision Rights and Allocation', 'Organizational IS Structure', 'IT Engagement Model' and 'Technological Frames', became an enrichment of the findings. The combination was the necessary means to reach the specific results sought to answer the RQ's.

The explanatory efficacy of the IT engagement model is improved by the IT governance applied within the model. The IT Governance theories helped in reflecting the company structure in IT governance organizational approaches and in assessing how company performance could be improved by IT governance.

Throughout the analysis, the researchers arrived upon specific examples of linking mechanisms to improve IT governance. The suggestions on these specific linking mechanism-initiatives expands the area of concern, IT governance. The analysis suggests, that the initiatives can be useful within improving IT governance, hence they become an amplification to the IT governance theories.

The contribution to the area of concern constitutes of the combination of theories, which proved empirically to be very applicable and became essential for the findings in this research. Furthermore, the contribution is found in the suggested linking mechanisms, which was based on substantiated propositions from the analysis. Together these two contributions ease the understanding process of the applicability. Especially, the linking mechanism-initiatives become a suggestion of specific insight to the area of concern, IT governance.

## **6 Conclusion**

The research analyzed how the decision rights allocation of the case company reflected in their organizational IS structure when constituting their IT governance. This was analyzed through independent IS structure analyses and a combination of both. The independent results show a centralized IS structure based on the decision rights allocation patterns, and both centralized and decentralized IS structure elements based on the analysis of organizational IS structure. Comparing the two analyses the decision right allocations do not reflect the decentralized elements, which means that the IT governance is not executed optimally. If IT governance was optimal, there should not have been differences in the two analyses, which confirms how important the combination of both analyses, where to the findings and insight in IT governance.

Secondly, the paper examined how the case company's performance can be improved by IT governance, based on their competencies. Based on the company's competencies, the researchers have ana-

lyzed and proposed multiple linking mechanisms with numerous attributes for enhancing the engagement of the six stakeholder groups, hence improving company performance. IT governance-enhancing initiatives ensure good involvement from both business and IT and increases the alignment and coordination. The linking mechanisms analyzed can be viewed in table 2, 'Linking Mechanisms'. The proposed initiatives enforcing linking throughout organizational levels focus on the strengthening of IT governance.

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## Appendix

Code	Category	Amount	Code	Subcategory	Amount
A	Stakeholders	160	A1	Company strategy	18
			A2	Enterprise architecture	62
			A3	Business unit strategy	17
			A4	Business unit architecture	37
			A5	Project plan	5
			A6	Project IT architecture	21
B	Decision Rights	48	B1	IT decides	10
			B2	Business decides	3
			B3	IT and business decides	14
			B4	Decision rights allocation	21
C	Organizational IS Structure	55	C1	Centralized	31
			C2	Decentralized	21
			C3	Federalized	3
D	Linking Mechanisms	135	D1	Alignment	45
			D2	Missing alignment	22
			D3	Coordination	40
			D4	Missing coordination	28
E	Technological Frames	39	E1	CEO	10
			E2	CIO	14
			E3	DM	15

Table 3. Overview of Code Categories and Amount of Appearances