UNDERSTANDING IT GOVERNANCE SUCCESS AND ITS IMPACT: RESULTS FROM AN INTERVIEW STUDY

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Abstract

Owing to the increasing regulatory pressure and the need for aligned IT decisions, governance of IT has become important for both academia and practice. However, knowledge that integrates the determinants and consequences of IT governance success remains scarce. Although some studies investigate single aspects of IT governance success and its impact, none of these combine these factors into a comprehensive and integrated model. To address this gap, our research aims at understanding what factors influence and result from successful IT governance, and at determining how they can be translated into a model to explain IT governance success and its impact. Therefore, we conducted 28 interviews in 19 companies across different industries. Based on the analysis, we present a model that helps understanding what factors make IT governance successful and how IT governance contributes to an IT organization's success and, eventually, unfolds to the overall organization. Thus, it allows organizational decision-makers to develop an effective IT governance implementation and to explain the implications of successful IT governance.

Keywords: IT governance, IS management, IS success/failure.

1   Introduction

Today, organizations increasingly use and depend on information technology (IT) to achieve their business objectives (Lazic et al., 2011b). The use of IT is grained through an amalgam of organizational, technical, and cultural influences (Sethibe et al., 2007). Effective IT governance is required to orchestrate this mixture, which has become an important issue in both academic research and organizational practice. According to Weill and Ross (2004), IT governance (ITG) refers to an actively designed set of mechanisms that encourages behaviors consistent with the organization's mission, strategy, and culture. These ITG mechanisms are directed towards a variety of IT-related matters, such as the manner in which critical IT decision processes are carried out, the policies put in place to guide these decision processes, and the assignment of accountabilities and participation rights regarding these processes (Sambamurthy and Zmud, 1999; Weill and Ross, 2004).

Despite its popularity, the ITG notion remains vague (Webb et al., 2006). The term ITG has been widely used by many parties, such as IT managers, consultants, auditors, and software providers, for various aspects of corporate IT management. Practitioners' perceptions of ITG objectives, properties, and responsibilities thus appear as unclear and heterogeneous as they do in the literature. In addition, comprehensive knowledge of the factors influencing ITG success and its subsequent impact in terms of a unifying model is scarce. Existing practitioner guides (e.g., ITGI, 2007) do provide helpful advice, but are often not generalized from specific implementations, display limited rigor, and do not provide sufficient explanation of the cause-effect relationships. Furthermore, previous academic research has only provided studies on individual ITG success determinants (e.g., Ali and Green, 2007; Guldentops, 2004; Huang et al., 2010) and consequences (e.g., De Haes and Van Grembergen, 2009a; Heart et al., 2010; Weill and Ross, 2004). However, none of these studies combine ITG success determinants and consequences into a comprehensive and integrated model of ITG success and its impact. The contribution of such a holistic model is twofold: In terms of practice, it allows organizational decision-makers to derive effective ITG implementation recommendations and to explain the implications of ITG, thus justify the respective investments. With regard to research, a holistic model elucidates how ITG contributes to an IT organization's success, thus closing an evident gap by combining heretofore fragmented research. While ITG success, specifically, refers to the IT organization and the effective and efficient relationship between it and the business divisions, it finally unfolds its impact in terms of utility to the overall organization.

Accordingly, this paper addresses attempts to answer two research questions: (1) Which factors influence and result from successful ITG? (2) How can these factors be integrated into a model that explains ITG success and its impact? Given the rather limited theoretical body of knowledge that underpins ITG success research, we address the abovementioned research gap by following a qualitative-explorative approach. We conducted 25 interviews in 19 companies across different industries, analyzed and interpreted the collected data by applying extensive content analysis, and compared our findings with prior research results.

To present our research, we structure this paper as follows: The next section briefly reviews the most important ITG conceptualizations and studies that inform our research. We then outline our methodological approach for answering the research questions. Subsequently, we present our findings and synthesize them into a model that explains how IT governance works and how it is impacted. Finally, we summarize our results, as well as discuss our limitations and research contribution.

2   Foundations

2.1   IT Governance

The term ITG was first used in academic literature in the early 1990s (Henderson and Venkatraman, 1993; Loh and Venkatraman, 1992), although similar phenomena had been studied for some time (Garrity, 1963;

Olson and Chervany, 1980). A few years later, a research stream emerged with the first specific studies of this topic (Brown, 1997; Sambamurthy and Zmud, 1999). Since then, research has produced various definitions of ITG, leading to a lack of clarity concerning the meaning of the term (Brown and Grant, 2005; Peterson, 2004; Webb et al., 2006). In a relatively focused definition, Weill and Ross (2004, p. 2) define ITG as "specifying the decision rights and accountability framework to encourage desirable behavior in using IT." Highlighting the importance of organizational structures and processes, the IT Governance Institute (ITGI) understands ITG as a responsibility of the board of directors and executive management. According to its broader, more dynamic definition, ITG "is an integral part of enterprise governance and consists of the leadership and organizational structures and processes that ensure that the organization's IT sustains and extends the organization's strategies and objectives" (ITGI, 2003, p. 10). A similar definition that focuses on business-IT alignment was formulated by Van Grembergen (2002, p. 1), who considers ITG "the organizational capacity exercised by the board, executive management and IT management to control the formulation and implementation of IT strategy and in this way ensure the fusion of business and IT." In order to make a clear distinction between IT management and IT governance and to correspond to established definitions of corporate governance, we follow the ITGI's definition.

Although the literature emphasizes different ITG focus areas, most of the publications share certain central aspects. ITG is commonly referred to as a subset of corporate governance (Heart et al., 2010; Webb et al., 2006). As various authors have indicated, ITG comprises five basic content domains (ITGI, 2003; Meyer et al., 2003; Webb et al., 2006): Ensuring the linkage between business and IT plans (*strategic alignment*); optimizing IT expenses and proving the value of IT (*value delivery*); the optimal investment in and the proper management of critical IT resources (*resource management*); addressing the safeguarding of IT assets, disaster recovery, and the continuity of operations (*risk management*); and tracking project delivery and monitoring IT services (*performance measurement*). Furthermore, there is broad consensus that ITG deployment comprises *structures* (e.g., CIO organization, IT committees), *processes* (e.g., strategic IT decision-making, monitoring procedures), and *relational mechanisms* (e.g., business-IT participation and partnerships, strategic dialogue, and shared learning) (De Haes and Van Grembergen, 2009a; Van Grembergen et al., 2004).

2.2   IT Governance Success Determinants

Several studies have been published that identify single ITG success determinants from empirical observations. Based on a case study investigation of large complex organizations in Europe and North America, Ribbers et al. (2002) conclude that effective ITG is influenced by the strategic integration of business and IT decisions, as well as by collaborative relationships and a shared understanding among the key stakeholders. On the basis of conceptual considerations, Guldentops (2004) presents five key success factors for IT control and governance focused on establishing appropriate IT structures and processes, as well as aligning business and IT in strategy and operations. Weill (2004), who undertook a survey of CIOs and case studies of multinational firms, suggests that managers consider eight critical success factors when assessing or implementing ITG. Some of these factors are: The transparency of the IT decisions, the simplicity of the governance arrangements, and whether the incentive and reward systems are aligned. Having analyzed survey data obtained from members of the Information Systems and Audit Control Association (ISACA) Australia, Ali and Green (2005) find significant positive relationships between ITG effectiveness and the four ITG mechanisms: The IT strategy committee, senior management involvement, a culture of compliance, and the corporate communication systems. Using sample data from auditors working in Australian public sector organizations, these authors (2007) again confirm that the IT strategy committee and corporate communication systems are success factors.

Via an in-depth study within an Australian organization, Bowen et al. (2007) explore the factors influencing ITG structures, processes, and outcome metrics. Their results indicate that more effective ITG performance outcomes are associated with a shared understanding of the business and IT objectives, the active involvement of IT steering committees, a balance of business and IT representatives in IT decisions, and comprehensive and well-communicated IT strategies and policies. The work of De Haes and Van

Grembergen (2008) provides insights into the effectiveness and ease of ITG practices' implementation, and provides a minimum baseline of practices that organizations should have; these include IT leadership and strategic information systems planning. Adopting an inductive research strategy to examine qualitative data, Huang et al. (2010) provide evidence of the influence of IT steering committees and IT-related communication policies on ITG effectiveness. On the basis of a literature review and case study research, Nfuka and Rusu (2010) identify a set of 11 critical success factors for effective ITG in Tanzanian public sector organizations. These include the governance of IT structures, stakeholders' involvement, the defining and tracking of benefits, as well as well-communicated IT strategies and policies. In a follow-up publication, Nfuka and Rusu (2011) empirically investigate and confirm the positive effect of the previously identified factors on ITG performance by using survey data from 51 organizations.

In contrast to the aforementioned studies identifying critical success factors, Lee et al. (2008a; 2008b) empirically examine how inhibiting features associated with ITG affect its success. On the basis of a literature review and a survey of leading Korean enterprises, a lack of clear IT principles and policies, as well as the inadequate support of financial resources, were identified as some of the inhibiting factors.

2.3   Consequences of IT Governance Success

In comparison to its determinants, the consequences of ITG success have received relatively little attention. In their influential book, Weill and Ross (2004) define *ITG performance* as ITG's effectiveness in delivering four outcomes weighted by their importance to the organization: the cost-effective use of IT, the effective use of IT for asset utilization, the effective use of IT for growth, and the effective use of IT for business flexibility. This measure's straightforwardness and ease of use, specifically led to researchers adopting it widely (Nfuka and Rusu, 2011; Simonsson et al., 2010). Bowen et al. (2007) extended this measure by including a fifth objective, compliance with the legal and regulatory requirements, in their assessment. Huang et al. (2010) operationalize ITG effectiveness in terms of the *organizational success of IT use*. Therefore, they consider the *efficiency of IT use*, which refers to the extent to which cost and productivity advantages accrue in the deployment of IT assets and capabilities, as well as the *breadth of IT use*, as reflecting the extent to which IT assets and capabilities are used to support work processes across the organization.

According to the ITGI (2007), effective ITG generates real business benefits, such as enhanced reputation, trust, product leadership, time-to-market, and reduced costs, all of which increase stakeholder value. Lee et al. (2008a; 2008b) agree on these outcomes and emphasize the additional role of ITG in mitigating IT risks. Based on their analysis of extreme cases, De Haes and Van Grembergen (2009a; 2009b) conclude that business-IT alignment maturity is higher in organizations that apply a mix of mature ITG practices. Heart et al. (2010) confirm a positive relationship between ITG and IT-enabled enterprise adaptability by analyzing survey data gathered from executives in medium-sized to large Israeli organizations. A study by Weill and Ross (2004) indicates that well-structured ITG can have positive effects on corporate performance. The results of their survey of 256 corporations suggest that the best-performing enterprises show more than a 40% return on assets (ROA) compared to the values achieved by their competitors. Similarly, on the basis of 19 case studies of major multinational corporations, Lazic et al. (2011a; 2011b) suggest that IT governance is positively related to business performance through the mediators *IT relatedness* and *business process relatedness*. Finally, drawing on strategic alignment and coordination theories, Liang et al. (2011) show that strategic alignment is a major factor that mediates the effect of IT governance on firm performance.

3   Methods

ITG is a notion that is hard to grasp (Webb et al., 2006). Furthermore, previous research examined different aspects of ITG in diverse contexts that often have differing understandings of the concepts under investigation. Theory building is further hampered by ITG success's lack of theoretical underpinnings. We therefore chose an exploratory approach for this research endeavor. Accordingly, we followed a qualitative-

empirical research design – an established approach for analyzing strategic IT planning issues in practice (Wu et al., 2006) – to address our research questions. According to Benbasat et al. (1987, p. 369), this kind of research is particularly applicable to "sticky, practice-based problems where the experiences of the actors are important and the context of action is critical." Drawing on recommendations by Klein and Myers (Klein and Myers, 1999), we subsequently initiated a field study based on interviews to look for empirical patterns that would explain ITG success and its impact.

We carried out guided interviews with IT decision-makers at the medium and top management levels (CIO, CFO, CEO, Director of IT Governance, etc.) to collect data, since they are usually responsible for establishing and maintaining ITG (ITGI, 2003). The sample included 28 interviewees from 19 multinational organizations headquartered in Germany, Austria, and the Netherlands. Our selection of organizations can be considered a convenience sample that allowed us to achieve this relatively large number of interviewees. However, drawing on the concept of theoretical replication (Benbasat et al., 1987; Yin, 2009), we tried to achieve sufficient variation across the organizations with respect to industry, size, IT / business structure, and IT / business strategy in order to avoid any bias in this regard. We consequently considered companies from very different fields and industries displaying very different structures and strategies (Table 1).

#	Industry	Revenues (bn. EUR)	Employees	Interviews (interviewees)	IT characteristics	Interviewee role(s)
1	Higher education	0.035	500	1 (1)	Low IT dependency	Chief Information Officer
2	Manufacturing	4	21,000	1 (1)	High degree of outsourcing Strong focus on compliance	Chief Information Officer
3	Stock exchange	100[1]	300	1 (2)	Strong focus on compliance	Chief Information Officer, Head of IT Service Management
4	Financial services	1,850[2]	102,000	2 (3)	High degree of outsourcing	Head of IT Transformation, Delivery & Program Manager, Director of Central Program Office
5	Financial services (IT service provider)	1.4	2,800	3 (3)	Strong focus on compliance	Head of Organization Department, Key Account Manager, Head of Information Systems Group
6	Automotive	127	435,000	1 (1)	High centrality of IT Strong focus on IT security	Head of Information Systems, Communication & Governance, Risk and Compliance
7	Chemicals and pharmacy	9	22,000	1 (1)	High degree of outsourcing	Chief Financial Officer
8	Consulting	0.1	450	1 (1)	High cost-orientation	Chief Information Officer
9	Financial services (IT service provider)	0.03	70	1 (1)	Strong focus on compliance	Head of Administration & Controlling
10	Financial services	10[2]	5,000	1 (1)	Strong focus on compliance	Chief Information Officer
11	Telecommu-nications	62	247,000	3 (3)	Heterogeneous IT structure High cost-orientation	Head of HR Demand & Vendor Management, Head of Program Management & Strategy, Head of Project Management
12	Consumer goods	6	18,000	1 (1)	High cost-orientation	Director of IT Governance
13	Automotive	15	48,000	1 (1)	High degree of outsourcing	Head of IT Governance & Strategy
14	Aid organization	0.3	8,000	1 (1)	Heterogeneous IT structure	Chief Information Officer

15	Professional association	0.125	1,100	1 (1)	Low cost-orientation	Chief Information Officer
16	Chemicals and pharmacy	23	47,000	1 (1)	High IT dependency High degree of outsourcing	Chief Information Officer
17	Media and publishing	0.07	400	1 (2)	High cost-orientation	Chief Executive Officer, Chief Information Officer
18	Manufacturing	6	24,000	2 (2)	Heterogeneous IT structure High cost-orientation	Chief Information Officer
19	Transportation	0.3	3,000	1 (1)	High centrality of IT	Chief Information Officer

[1]Trading turnover [2]Balance sheet total

Table 1.   Profiles of Companies

The interviewees were collected by means of invitation letters sent out via post and email to 152 IT decision-makers. We conducted 25 interviews with one or – in specific cases – two interviewees simultaneously between May and September 2011. The interview process was supported by an interview guide with 37 questions on the interviewees' and their organizations' demographics, as well as their understanding, implementation status, development path, and – very important for the research presented in this paper – the determinants and consequences of ITG. The questions in the interview guide were developed according to the recommendations of Myers and Newman (Myers and Newman, 2007). Furthermore, the interview guide was pretested and the interviewees given access to it and an information package about the study beforehand to support their pre-preparation. The interviews lasted between 1.5 and 2 hours each. We conveyed the interview length to the interviewees beforehand, thus addressing their time constraints and increasing the likelihood of cooperation. In addition, all the interviewees were briefed on the guaranteed anonymity and gave permission for the interviews to be recorded. Furthermore, we took additional field notes to support the analysis process. At the beginning of the interviews, we asked the informants how they understood ITG and presented our concept of it to avoid misunderstandings and assure content validity. During the interviews, we used the interviewee's answers to steer the conversation in order to take advantage of emergent themes and unique case features (Eisenhardt, 1989). All the interviews were then transcribed and coded for further analysis in two stages (open, axial), as recommended by Strauss and Corbin (Strauss and Corbin, 1990).

We relied on the guidelines for case-based theory building (Dooley, 2002; Eisenhardt, 1989; Eisenhardt, 1991) to analyze the collected empirical data, and proceeded in two phases. First, in the within-case analysis, we focused on identifying the concepts that either contributed to ITG success or caused problems that the companies had to overcome, as well as on the impact that ITG success had on the cases observed. Second, we carried out a cross-case analysis to search for similarities and differences between the case organizations. This approach enabled us to identify patterns that could potentially be included in a framework to explain ITG success and its impact. The interviews thus helped us gradually identify the framework's constituent elements.

We thus started without a fixed coding scheme; all the data was initially open-coded. This refers to dividing, comparing, forming, and categorizing data into meaningful elements. We scanned the interview transcripts and the field notes for similarities and differences, and assigned these to codes. Overall, we created 576 codes in this first step. Later, the codes used were reconciled by merging analogous codes and resolving conflicting codes, which resulted in 430 codes. During axial coding, the constructs identified in the open-coding process were grouped into synthesizing categories. We then condensed the codes resulting from the open coding process to 45 categories. Table 2 provides a summary of excerpts from the codes included in exemplary axial categories. The data analysis was conducted using the qualitative data analysis software Atlas.ti version 6.2, which also served as our field study database.

Category	Sample of the code
Success Determinant: Adequateness of Regulations	- Right relation between latitude and limit - Practical and compact governance - Helpful guideline for daily work
Success Determinant: Top Management Commitment	- IT reports to the board of directors - CIO is part of the board of directors - IT awareness by the board of directors - Board of directors provides required resources
Success Determinant: Persuasiveness of Communication	- Explain the reasoning behind the ITG process - Communicate ITG process in work groups - Set an example of ITG
Impact Factor: Increase in Transparency	- Increase process transparency - Increase costs transparency - Emphasize the added-value of IT
Impact Factor: Increase in Business/IT Alignment	- IT supports the divisions better - IT is a business enabler - Sustainable integration of business and IT
Goal Factor: Increase in efficiency	- Optimize resource allocation - Achieve consistent quality standards - Reap synergy effects

Table 2.   Sample Categories Resulting From Axial Coding

4   Findings

Aggregating what we learned from the 25 interviews, we propose a model that describes how the various observed constructs are interrelated and how they contribute to or result from successful ITG (Figure 1).
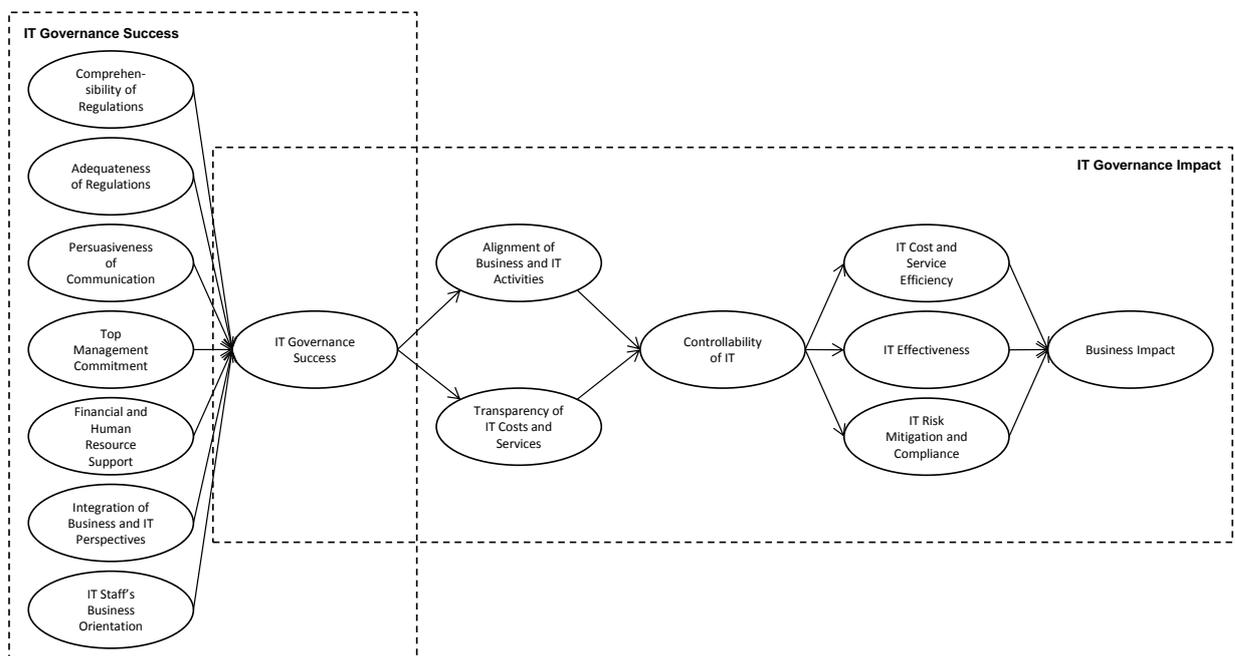

Figure 1.   Model of IT Governance Success and Impact

Table 3 depicts the identified determinants of ITG success in more detail, along with their empirical and theoretical foundations. According to these factors, successful ITG is determined by the comprehensibility of the regulations, the adequateness of the regulations, the persuasiveness of the communication, top management commitment, financial and human resource support, the integration of business and IT perspectives, as well as the business orientation of the IT staff.

Construct	Description	Companies	Related literature
Comprehensibility of Regulations	Extent to which the regulations defined by the ITG are clear, simple, and consistent, and thus understandable to the whole organization.	1, 4, 5, 9, 10, 11, 12	(Bowen et al., 2007), (Lee et al., 2008a), (Lee et al., 2008b), (Weill, 2004)
Adequateness of Regulations	Extent to which the ITG offers an adequate balance between binding regulations and freedom of action.	1, 2, 3, 4, 5, 9, 10, 12, 13, 18	
Persuasiveness of Communication	Extent to which the IT management has the necessary persuasiveness to establish ITG throughout the organization.	1, 6, 9, 11, 12, 13, 14, 18	(Ali and Green, 2005), (Ali and Green, 2007), (Lee et al., 2008a), (Lee et al., 2008b), (Nfuka and Rusu, 2010), (Nfuka and Rusu, 2011)
Top Management Commitment	Extent to which top management promotes the ITG activities by steering, communicating and advising.	1, 3, 4, 5, 8, 10, 11, 12, 13, 14, 15, 16, 18	(Ali and Green, 2005), (De Haes and Van Grembergen, 2008), (Lee et al., 2008a), (Lee et al., 2008b), (Nfuka and Rusu, 2010), (Nfuka and Rusu, 2011)
Financial and Human Resource Support	Extent to which the business sponsors provide sufficient financial and human resources for defining, asserting, maintaining, and developing the ITG further.	4, 5, 9, 10	(Lee et al., 2008a), (Lee et al., 2008b)
Integration of Business and IT Perspectives	Extent to which the ITG considers the needs and requirements of both business and IT, as well as explicitly incorporates and addresses both perspectives.	2, 3, 4, 7, 9, 10	(Bowen et al., 2007), (Guldentops, 2004), (Nfuka and Rusu, 2010), (Nfuka and Rusu, 2011), (Ribbers et al., 2002)
IT Staff's Business Orientation	Extent to which the IT employees have the necessary skills and attitudes to adequately support the business function and act as business enablers.	4, 6, 7, 9, 18,	(Nfuka and Rusu, 2010), (Nfuka and Rusu, 2011), (Weill, 2004)

Table 3.   IT Governance Success Determinants

The central construct *IT Governance Success*, as indicated by various interviewees (4, 5, 8, 9, 10, 11, 12, 13, 15), refers to the extent to which a clearly defined and transparent set of structures, processes, and standards exist that are accepted throughout the organization and integrated into the daily work routines. Thus, this understanding corresponds to the enterprise-wide maturity level of ITG performance proposed by the ITGI (2007) and adopted by Lee et al. (2008a; 2008b).

Table 4 introduces and defines the identified consequences of ITG success. These include the alignment of business and IT activities, the transparency of IT costs and services, the controllability of IT, IT service and cost efficiency, IT effectiveness, IT risk mitigation and facilitation of compliance, and the overall business impact.

Construct	Description	Companies	Related literature
Alignment of Business and IT Activities	Extent to which the IT activities directly or indirectly aim to satisfy business needs.	1, 3, 4, 5, 7, 12	(De Haes and Van Grembergen, 2009a), (De Haes and Van Grembergen, 2009b)
Transparency of IT Costs and Services	Extent to which the IT costs and the IT service portfolio is transparent.	1, 4, 5, 6, 9, 10, 11, 13, 14, 18	
Controllability of IT	Extent to which the IT management is able to control all IT activities along the value chain of IT services.	5, 10, 11, 12, 15, 18	
IT Cost and Service Efficiency	Extent to which IT is able to deliver IT service quickly and cost-efficiently.	2, 4, 5, 6, 7, 9, 10, 11, 13, 14, 15, 16, 18	(Nfuka and Rusu, 2011), (Simonsson et al., 2010), (Weill and Ross, 2004)

IT Effectiveness	Extent to which IT delivers the right services to the organization in order to create value for the business.	2, 4, 5, 6, 7, 11, 12, 13, 14, 16	(Nfuka and Rusu, 2011), (Simonsson et al., 2010), (Weill and Ross, 2004)
IT Risk Mitigation and Compliance	Extent to which IT is able to mitigate IT risks and to facilitate compliance with legal and regulatory requirements.	10, 13, 14, 18	(Bowen et al., 2007), (Lee et al., 2008a), (Lee et al., 2008b)
Business Impact	Extent to which IT has a positive effect on corporate performance.	4, 5, 7, 11, 14, 15, 16, 18	(Huang et al., 2010), (Weill and Ross, 2004)

Table 4.   Consequences of IT Governance Success

Carefully evaluating the narratives from the interviews reveals a set of relationships between these constructs that highlights the mechanisms that generate and result from ITG success. Using the relationships between the constructs, we suggest a set of propositions that illustrate the mechanisms of ITG success and its impact. Table 5 highlights these propositions, as well as their empirical and theoretical foundations.

#	Proposition	Exemplary Quote	Companies	Related Literature
P1	The greater the clarity, simplicity, and consistency of ITG regulations, the greater the ITG success.	"IT governance needs to determine which processes should be subject to definition and thus to regulation. In any case, the decision to go for IT governance needs to be backed by top management, and the regulations have to be simple, traceable, and provide guidelines for daily work. This is quite important to overcome the loss of flexibility and the power of the divisions." [# 12]	1, 4, 5, 9, 10, 11, 12	(Bowen et al., 2007), (Lee et al., 2008a), (Lee et al., 2008b), (Weill, 2004)
P2	The greater the adequateness of ITG regulations, the greater ITG success.		1, 2, 3, 4, 5, 9, 10, 12, 13, 18	
P3	The greater the persuasiveness of communication, the greater the ITG success.		1, 6, 9, 11, 12, 13, 14, 18	(Ali and Green, 2005), (Ali and Green, 2007), (Lee et al., 2008a), (Lee et al., 2008b), (Nfuka and Rusu, 2010), (Nfuka and Rusu, 2011)
P4	The greater the top management commitment, the greater the ITG success.		1, 3, 4, 5, 8, 10, 11, 12, 13, 14, 15, 16, 18	(Ali and Green, 2005), (De Haes and Van Grembergen, 2008), (Lee et al., 2008a), (Lee et al., 2008b), (Nfuka and Rusu, 2010), (Nfuka and Rusu, 2011)
P5	The greater the financial and human resource support, the greater the ITG success.	"Without both committed people and the necessary budget, I would not recommend starting to implement IT governance. In our case, it also paid off to form working groups within our divisions. If someone did not succeed in convincing the others, it was apparently not the best solution" [# 4]	4, 5, 9, 10	(Lee et al., 2008a), (Lee et al., 2008b)
P6	The greater the integration of business and IT perspectives, the greater the ITG success.		2, 3, 4, 7, 9, 10	(Bowen et al., 2007), (Guldentops, 2004), (Nfuka and Rusu, 2010), (Nfuka and Rusu, 2011), (Ribbers et al., 2002)
P7	The greater the IT staff's business orientation, the greater the ITG success.		4, 6, 7, 9, 18,	(Nfuka and Rusu, 2010), (Nfuka and Rusu, 2011), (Weill, 2004)
P8	The greater the ITG success, the greater the alignment of the business and IT goals.	"When we established our IT governance, we had two objectives in mind: to achieve transparency regarding the services costs and to ensure that IT no longer acted in almost complete isolation from our divisions" [# 4]	1, 3, 4, 5, 7, 12	(De Haes and Van Grembergen, 2009a), (De Haes and Van Grembergen, 2009b), (Liang et al., 2011)
P9	The greater the ITG success, the greater the transparency of the IT costs and services.		1, 4, 5, 6, 9, 10, 11, 13, 14, 18	

P10	*The greater the alignment of the business and IT goals, the greater the IT controllability.*	"Both transparency and business-IT alignment are not ends in themselves, but means to achieve and/or improve the steering. Steering, in turn, is a means to achieve economic benefits, while the overall goal is to better assign and direct our limited resources." [# 5]	5, 12	
P11	*The greater the transparency of the IT costs and services, the greater the IT controllability.*		5, 10, 11, 18	
P12	*The greater the IT controllability, the greater the IT cost and service efficiency.*		5, 10, 11, 15, 18	
P13	*The greater the IT controllability, the greater the IT effectiveness.*		5, 11, 12	
P14	*The greater the IT controllability, the greater the IT risk mitigation and compliance.*	"Compliance is a topic for us, even though we are not yet very good in it. The better IT governance is understood and practiced throughout all parts of our organization, the more likely we are to be compliant, which in turn is good for the firm's standing" [# 18]	10, 18	
P15	*The greater the IT cost and service efficiency, the greater the business impact.*	"By practicing advanced IT governance, we strive to become more effective and more efficient, and, thus, support our divisions better." [# 16]	4, 5, 7, 11, 14, 15, 16, 18	
P16	*The greater the IT effectiveness, the greater the business impact.*		4, 5, 7, 11, 16	
P17	*The greater the IT risk mitigation and compliance, the greater the business impact.*	(see exemplary quote of P14)	14, 18	

Table 5.   Propositions Explaining IT Governance Success and Impact

5   Discussion and Outlook

This study was carried out as an integral part of an ongoing research program to understand how ITG helps organizations handle the growing complexity in managing corporate IT departments in the context of an increasing business orientation. We thereby set out to identify the factors that influence and result from successful ITG and to understand how knowledge of these factors can be translated into a model for explaining ITG success and its impact.

Before we discuss our research contributions, we acknowledge a few limitations. The generalizability of our results is limited due to the qualitative approach based on convenience sampling. However, despite the variation in the interviewees' companies, we did find stable elements and relationships. While acknowledging that our results must be tested on a larger sample, we believe that the developed model is a promising basis for future research on the success and impact of ITG.

Bearing these limitations in mind, this paper contributes to research on ITG by providing a model that explains how ITG should be designed in order to be successful and what the organizational impact of successful ITG will be. Our research identified several constructs and relationships that are strongly supported by empirical evidence, some of which previous research has not investigated. Practitioners will benefit from this model, because it enables them to better set up and develop ITG, as well as to understand and promote its potential impact.

Future research activities could comprise the testing of our inductive propositions by means of a large-scale quantitative study that includes structural equation modeling (Straub et al., 2004; Urbach and Ahlemann, 2010). While we acknowledge the substantial work that remains to be done in the context of operationalizing our constructs and collecting survey data, testing our propositions will produce a deeper understanding of how the various concepts relate to one another.

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