It governance impact factors

Carsten Müller
Department of Information Technologies
University of Economics, Prague

Abstract
Information technology is a critical component of an organization’s day-to-day operations and its strategic capabilities. It represents a large component of many company’s capital expenditures. It is critical for businesses to design and implement an IT Governance structure that fits the business strategy and structure of the organization and engages key stakeholders throughout the enterprise in productive dialogue and decision making regarding IT. A significant amount of research has brought to light factors that affect the choice of IT Governance structures within organizations.

This article develops insights into the impact factors IT Principles, IT Architecture, Ownership and Accountability, Regulation, Organization, Transparency, Outsourcing and Service Level Agreements for which there are currently none or less research articles available.

Keywords: IT Governance, IT Management, IT Principles, IT Architecture, Ownership and Accountability, Regulation, Organization, Transparency, Outsourcing, Service Level Agreements

Introduction
The business environment has become increasingly complex and competitive due to the rapid advances in technology and globalization of the world economy over the last two decades. As a consequence the role of IT in these organizations has changed significantly over the last decade. The traditional relationship of IT providing support services to individual departments within an organization has evolved into one where IT now plays a broader role in achieving the overall strategic goals of the organization via a focus on global enterprise-wide support. As a result, IT Governance in the dynamic and complex business environment has been pushed to the forefront of critical issues facing the management of these organizations, in spite of the fact that little research exists on IT Governance that attempts to identify and explain the multiple factors that may affect the choice of IT Governance structures.

Using frameworks such as COBIT and ITSM/ITIL will help to enhance IT Governance implementation and also provide clear IT management processes identifying the necessary steps in governing integrated IT processes (Guldentops, 2004).

A significant amount of research has brought to light factors that affect the choice of IT Governance structures within organizations (Henderson and Venkatraman, 1993; Barua et al., 1995; Agarwal and Sambamurthy, 2002; Boddy et al., 2005). This body of research can be classified into two categories: research focusing on the impact of a single factor, such as firm size (Brown, 1997; Santhanam and Zmud, 1999; Brown and Grant, 2005), and research utilizing the underlying principles of contingency theory to identify the combination of factors that impact IT Governance decisions within organizations (Henderson and Venkatraman, 1993; Barua et al., 1995; Agarwal and Sambamurthy, 2002; Boddy et al., 2005).
The motivation for this research article is to analyse impact factors that have not been analysed yet - IT Principles, IT Architecture, Ownership and Accountability, Regulation, Organization, Transparency, Outsourcing and Service Level Agreements for which are currently none or less research articles available.

We propose a three-phase approach to addressing this topic. For each impact factor a hypothesis (H) with two possible states (positively/negatively) exists. The first phase would be this article where the eight impact factors mentioned above are isolated analysed by combining existing information found in the literature review and experience. The second phase would be an empirical investigation – based on a standardized questionnaire – to proof the hypothesis and validate the statements.

**Survey Approach**

Respondents were drawn from a wide range of industry sectors (see appendix) from across Europe. An online version of the survey was released on the platform itg-components.com.

The survey was carried out under the Market Research Society and Marketing Research Association codes of conduct, guaranteeing complete anonymity of the participants. None of the information obtained in the interviews has been attributed to any individual, and all comments have been treated in the strictest confidence.

The questionnaire used for the survey has been included in the appendix. In the third phase, the isolated view would be left and the eight impact factors combined and based on hypothesis (including empirical investigation) analysed.

The article addresses the general research question:

*How do the impact factors IT Principles, IT Architecture, Ownership and Accountability, Regulation, Organization, Transparency, Outsourcing and Service Level Agreements influence IT Governance?*

1. **Theoretical background**

The term "IT Governance" was used by Loh and Venkatraman (Loh and Venkatraman, 1992) and Henderson and Venkatraman (Henderson and Venkatraman, 1993) to describe the set of mechanisms for ensuring the attainment of necessary IT capabilities (De Haes and Grembergen, 2005), but did not feature prominently in the academic literature until the late 1990’s when Brown (Brown, 1997) and Sambamurthy and Zmud (Santhanam and Zmud, 1999) began to refer to a notion of "IS governance frameworks" and then later to "IT Governance frameworks" in their papers. If we adopt Weill’s definition of IT Governance, the concept of defining IT decision rights and accountabilities is, in fact, well researched long before the 1990’s. This work represents substantial progress in studying governance. Computer systems management controls (Garrity, 1963), control of information services (Olson et al., 1980), IS organizational structure (Von Simson, 1990), IT standards (Kayworth and Sambamurthy, 2000), IT decision making responsibilities (Boynton et al., 1992), IT management architecture and locus of IT decision making (Boynton et al., 1992), IS organizational role, and location of IS responsibility (Brown and Magill, 1994) all represent terms or concepts that contributed to the fundamental research of IT Governance.
A succinct definition of IT Governance is: “specifying the decision rights and accountability framework to encourage desirable behaviour in the use of IT” (Weill and Ross, 2004).

IT Governance defined by Webb et al (Webb et al., 2006) is “the strategic alignment of IT with the business such that maximum business value is achieved through the development and maintenance of effective IT control and accountability, performance management, and risk management”.

Simonsson and Johnson (Simonsson and Johnson, 2005) provide an IT Governance definition based on a consolidation of literature. Their definition, based on an analysis of sixty different articles on IT Governance (ITG), is:

IT Governance is about IT decision-making: The preparation for, making of and implementation of decisions regarding goals, processes, people and technology on a tactical and strategic level (Simonsson and Johnson, 2005).

To solve the time gap between decisions concerning IT Governance and company performance effectiveness the decision-making process can be viewed from two perspectives. Firstly, it is a iterative strategic decision-making process in which IT Governance foundations and controls are created (proactive monitoring). Secondly, it is a decision making process that is triggered by or ideally coherent with other aspects of IT Governance management, especially organizational strategy formation. Commonly, decision making seems to be understood as a cognitive process leading to the selection of a course of action among variations. Every decision making process produces a final choice, which can be action or an opinion. According to Malone and Crowston, (Malone and Crowston, 1994) coordination is the act of managing interdependencies between activities performed to achieve a goal. Structural integration reduces uncertainty, process integration reduces equivocality, and collaborative integration creates mutual understanding. According to Galbraith (Galbraith, 2004), these levels depict a cumulative hierarchy, in which process integration builds on structural connections, and collaboration builds on process integration.

While the original practice of IT outsourcing contracts involved complicated measures to safeguard the client’s interest against the many potential mishaps, a more modern approach has focused on a system of penalties and rewards based on observed quality of service, serving as a monetary compensation that insures the client in case the service is suboptimal.

**IT Governance effectiveness is a measure for increasing the production and performance within the organization due to the IT. Decrease of production and performance result from negative IT Governance effectiveness.**

We consider two measures of firm performance: Return on assets (ROA) and Tobin’s q. Return on assets identifies a firm’s ability to generate profits from its assets. This measure has been widely used in prior studies (e.g., Hitt and Brynjolfsson, 1996; Tanriverdi, 2006; Kohli and Devaraj, 2003). One drawback of the ROA measure is its narrow focus on firm profitability in the current fiscal year (Tanriverdi, 2006). The correlation between the impact factors and ROA / Tobin’s q is determined based on mathematical methods (Mathematica). The value of IT governance, however, could take years to materialize. To capture the long-term influence of IT governance, we also use Tobin’s q as a measure of firm performance. Tobin's q is a forward-looking measure that reflects market expectations of future firm performance (Bharadwaj, 2000).
We employ a logistic regression model to measure the IT Governance effectiveness. In the logistic regression model, a positive (negative) coefficient indicates that the corresponding independent variable increases (decreases) the IT Governance effectiveness.

2. It principles

H1: Defining abstract IT Principles is positively associated with IT Governance effectiveness.

IT principles are high-level statements directly related to what the business is trying to achieve.

ITG is an integral part of corporate governance and analogously combines leadership, organizational structures, and processes that ensure that IT sustains and extends the organization's strategies and objectives. IT systems will be shared and common data repositories will be used, taking in consideration security, risk management, and mandates. The underlying focus of the organisation, i.e. growth or profit, needs to be considered at this level. If the organisation is aiming to grow, then IT needs to be agile. Business units will require quite a lot of autonomy so that new technologies and processes can be rapidly implemented. On the other hand, if the organisation has a profit focus the aim should be centralised decision making and implementation, leading to economies of scale and optimised processes. In large multi-business unit enterprises it is necessary to consider ITG at several levels. The starting point is enterprise-wide ITG driven by a small number of enterprise-wide strategies and goals. Enterprises with separate IT functions in divisions, business units, or geographies require a separate but connected layer of ITG.

An effective set of IT principles will have a clear relationship to the overall institutional mission and its goals and objectives. Each IT principle is supported by a rationale and implications. Enterprises must ensure that fundamental IT principles and decision-making authority are supported by mechanisms that ensure participation and enhance effectiveness.

Empirical Investigation
A. IT PRINCIPLES

One choice is possible as an answer.

Has your organization an IT strategy? (0) No (1) Yes

How frequently is IT included on your organization's board agenda? (0) Never (1) Sometimes - depends on projects (2) Regularly at least once a year (3) Always

Thinking about your overall corporate strategy or vision, how important do you consider IT Principles to be to the delivery of this strategy or vision? (0) Not important at all (1) Not very important (2) Quite important (3) Very important

How frequently are IT Principles (e.g. outsourcing) discussed on your organization's board? (0) Never (1) Sometimes - depends on projects (2) Regularly at least once a year (3) Always
3. IT Architecture

H2: The maturity of IT Architecture is positively associated with IT Governance effectiveness.

IT Architecture is the collection of principles, guidelines and modelling standards that guide an organisation with the development, change and use of IT-resources within the whole organisation (Allen and Boynton, 1991; Weill and Broadbent, 1998; Ross, 2003).

To improve business responsiveness and support cost reduction goals, IT leaders must determine how to structure their IT architectures so that they can facilitate the addition of new business functions and changes to the existing ones. The process of determining technological direction via IT Architecture satisfies the business requirement to take advantage of available and emerging technology to drive and make possible the business strategy. This is enabled by creation and maintenance of a technological infrastructure plan that sets and manages clear and realistic expectations and standards, of what technology can offer in terms of products, services and delivery mechanisms. Given the significant amount of outsourcing of IT services, the effective governance of architectures in these situations is a key consideration. Once process improvement initiatives are identified and prioritized, requirements for each initiative can be defined. These requirements should include specifics regarding the use of people, processes, technology, and controls. To help drive architectural leverage and consistency, new requirements should be analysed to determine (1) how existing architectural services (e.g., a control service or security process) might be used and (2) how new services that must be created can be effectively integrated into the architecture to enhance its overall processing capabilities (e.g., improving its structure, its service capabilities, or its overall processing control and work management).

When the architecture is organized around business functions, IT leaders can communicate more effectively with the business units, and business changes can be carried out more efficiently.

Flexibility of the IT architecture has gained importance in IT systems planning as a driver of business value (Byrd, 2000).

Multiple choices are possible as an answer.
What types of architectures is set up in your organisation? (Multiple choice)
(1) Business Process Architecture
(2) IT Service Architecture
(3) IT Application Architecture
(4) Data Architecture
(5) IT Infrastructure Architecture
(6) None

One choice is possible as an answer.
What type of architecture has the most influence on IT effectiveness?
(1) Business Process Architecture
(2) IT Service Architecture
(3) IT Application Architecture
(4) Data Architecture
(5) IT Infrastructure Architecture

Do the architectures for IT infrastructure, applications, information, and the central processes in your organisation form a compatible and functioning whole?
(0) Strongly disagree
(1) Disagree
(2) Agree
(3) Strongly agree
Does the IT Architecture fulfil the business requirements for the next three years?
(0) Strongly disagree
(1) Disagree
(2) Agree
(3) Strongly agree

What trends are impacting your IT Architecture? (Multiple choice)
(0) Software as a Service
(1) Offshoring/Globalization
(2) Standardization
(3) Others

4. Ownership and Accountability

H3: The maturity of Ownership and Accountability is positively associated with IT Governance effectiveness.

In this article we draw on the theory of managerial discretion to define CIO decision making authority. Like any major organizational initiatives, ITG must have an owner and accountabilities. Ultimately, the board is responsible for all governance, but the board will expect or delegate an individual (probably the CEO or CIO) or group to be accountable for ITG design, implementation, and performance-similar to the finance committee or CFO being accountable for financial asset governance. In choosing the right person or group, the board, or the CEO as their designate, should consider three issues. IT executives must understand business environment and technology change in their specific industries, and implement governance programs that address structure, principles and decision processes. A dedicated advanced technology group that focuses and drives emerging technology activities should be linked to overall ITG. (1) ITG cannot be designed in isolation from the other key assets of the firm (financial, human, and so on). Thus the person or group owning ITG must have an enterprise-wide view that goes beyond IT, as well as credibility with all business leaders. (2) The person or group cannot implement ITG alone. The board or CEO must make it clear that all managers are expected to contribute to ITG as they would contribute to governance of financial or any other key asset. (3) IT assets are more and more important to the performance of most enterprises. A reliable, cost-effective, regulation-compliant, secure, and strategic IT portfolio is more critical today than ever before. The person or group owning ITG must understand what the technology is and is not capable of. It is not the technical details that are critical but a feel for the two-way symbiotic connection between strategy and IT. ITG initiatives are very often instigated by top management of the organisation; hence they certainly have the initial support of senior management. It is important that this support is sustained, and that ITG is part of the strategic vision of senior managers. A major governance and incentive alignment issue is business unit synergy.

Empirical Investigation

C. OWNERSHIP AND ACCOUNTABILITY

One choice is possible as an answer.

Who is responsible for IT Governance in your company?
(0) Board
(1) CEO
(2) CIO
(3) other

To which organizational unit does the IT department belong to?
(0) CEO
(1) CFO
(2) Production
(3) other
**It governance impact factors**

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<th>Question</th>
<th>Options</th>
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</table>
| Is there an IT steering committee or council in place to oversee and provide direction to IT activities? | (0) No and Informal  
(1) Formal |
| Did your organisation manages and develops IT as a strategic resource?   | (0) Strongly disagree  
(1) Disagree  
(2) Agree  
(3) Strongly agree |

5. **Regulation**

H4: The range of Regulation is negatively associated with IT Governance effectiveness.

There are wide range of laws and regulations, some specific to industry sectors that can have an impact on IT. Every organisation must identify the specific regulations affecting them and respond accordingly, and ensure that the roles and responsibilities for understanding legal and regulatory matters are properly defined for each group of stakeholder so that each group can apply its specific expertise effectively. External advice must be sought whenever the issues are sufficiently risky or complex. Every organisation relies on a growing number of third parties for support of IT services. From a legal and regulatory perspective this means that there is potentially a complex hierarchy of responsibilities that combine to meet the legal and regulatory needs of the organization. Ultimately it is the organization's responsibility to ensure that all the right controls are in place with any third party that is relied upon for legal and regulatory compliance. In practice, it is recommended that a framework for dealing with legal and regulatory issues be established. Ideally organisations should deal with legal and regulatory requirements on a 'business as usual' basis instead of reacting on a case-by-case basis - because IT is fast changing and new regulations are also emerging, any such framework must be flexible and responsive to new requirements.

Regulations have an impact on IT systems, e.g., all scientific data regarding pharmaceutical products have to be preserved for at least 30 years which may hinder the upgrade to more modern systems.

**Empirical Investigation**

D. **REGULATION**

*One choice is possible as an answer.*

<table>
<thead>
<tr>
<th>Question</th>
<th>Options</th>
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</thead>
</table>
| Do regulations hinder the alignment between IT and business?             | (0) Strongly disagree  
(1) Disagree  
(2) Agree  
(3) Strongly agree |
| How many changes (hardware and software) based on regulations were performed in the last three years? | (0) None  
(1) 1-50  
(2) 51-250  
(3) > 250 |
| How has your organization's spending on compliance changed in the last three years? | (0) Decreased  
(1) Stayed Same  
(2) Increased |
| What is the common barrier to implement a successful compliance process? | (0) Legal  
(1) Technical  
(2) Organizational |
6. Organization

H5: Relational mechanisms in the organization are positively associated with ITG Performance.

It is possible that an organisation has all IT Governance structures and processes in place, but that it does not work out because business and IT do not understand each other and/or are not working together (Luftman, 2000). To reach effective ITG, a two-way communication and a good participation/collaboration relationship between the business and IT people is needed. Horovitz called this the social dimension of ITG, with a focus on the people in the alignment process (Reich et al., 2000). Organizational culture is a powerful influence on the success or failure of governance mechanisms. Two types of functional integration exist: strategic and operational integration. Strategic integration is the link between business strategy and IT strategy reflecting the external components, which are important for many companies as IT emerged as a source of strategic advantage. Operational integration covers the internal domain and deals with the link between organizational infrastructure and processes and IT infrastructure and processes. Organizations that view the IT organization as a cost centre often focus on key outcomes such as improving system throughput, enhancing system stability, increasing code productivity and reducing time to delivery. For these organizations, selecting the right metrics and measurement control systems can serve as a pragmatic entry point to improving ITG maturity. Several researchers have argued that it is the management of IT, rather than solely the quantitative investment in IT that can impact firm performance (Byrd et al., 2001). There is empirical evidence that shows that the quality of the IT department can impact firm performance (Santhanam et al., 2003).

Empirical Investigation
E. ORGANIZATION

One choice is possible as an answer.

Is IT linked with organization’s processes to improve business performance?
(0) Strongly disagree
(1) Disagree
(2) Agree
(3) Strongly agree

Is the IT organization viewed as cost centre?
(0) Disagree
(1) Agree

How many IT departments are in your organization?
(0) 1
(1) 1-5
(2) > 5

If there are more IT departments in your organization, how many of them are organized as Shared Service Centre?
(0) None
(1) > 1% - <= 25%
(2) > 25% - <= 50%
(3) > 50%

H6: Transparency of governance processes is positively associated with IT Governance effectiveness.

The more special deals are made, the less confidence there is in the process and the more workarounds are used. The less confidence there is in the governance, the less willingness there is to play by rules designed to lead to increased firm-wide performance. Hidden agendas, measures in provider’s terms and a general lack of
transparency leaving top management in the dark. Special deals and non-transparent governance set off a downward spiral in governance effectiveness. The less transparent the governance processes are, the less people follow them. Furthermore, if there is a lack of clarity and transparency when taking significant IT decisions, this can lead to reluctance to take risks and a failure to seize technology opportunities.

**Empirical Investigation**

**F. TRANSPARENCY**

One choice is possible as an answer.

Does IT play an important role to improve organization’s transparency?  
- (0) Strongly disagree  
- (1) Disagree  
- (2) Agree  
- (3) Strongly agree

Are the employees familiar with the impact of IT on their business based on reliable measurements?  
- (0) Strongly disagree  
- (1) Disagree  
- (2) Agree  
- (3) Strongly agree

Are you able to monitor the added value and effect on business processes that IT innovation brings?  
- (0) Disagree  
- (1) Agree

**7. Outsourcing**

H7: Outsourcing is positively associated with ITG Performance, if the customer ensures that all the right controls are in place with any third party that is relied upon for legal and regulatory compliance.

Outsourcing is the mechanism that allows organisations to transfer the delivery of services to third parties. Fundamental to outsourcing is accepting that, while service delivery is transferred, accountability remains firmly with the remit of the client organisation, which must ensure that the risks are managed and there is continued delivery of value from the service provider. In addition, due to the very significant cost of IT investments, and the complexity of customer and supplier relationships, legal contracts for IT services are being given much more careful attention. These contracts in turn demand greater controls be demonstrated by the parties to the contract; over many issues such as security, intellectual property, service availability, ownership of deliverables, support of products etc. As a consequence, IT service providers, vendors, and internal IT functions are all realising that they must be better organised from a control and compliance perspective. It is only a relatively recent realisation that IT related controls should be documented and monitored by IT functions, increasingly driven by regulatory pressure. Effective governance creates an environment in which decisions about IT investments and operations are based on an understanding of how IT delivers business value. Every organisation relies on a growing number of third parties for support of IT services. From a legal and regulatory perspective this means that there is potentially a complex hierarchy of responsibilities that combine to meet the legal and regulatory needs of the customer. Ultimately it is the customer’s responsibility to ensure that all the right controls are in place with any third party that is relied upon for legal and regulatory compliance. In order for both sides to be clear on responsibilities it is essential that sufficient in-house capability is retained.
Most organisations actually get more rigour when they outsource but most contracts are built around existing operations with all their limitations. The onus should be on the provider to spell out the risks - but the provider will not improve controls unless paid to do so, or can see a commercial benefit in making the necessary investment. Given the significant amount of outsourcing of IT services, the effective governance of architectures in these situations is a key consideration. The customer should always take control of his own requirements including architectural decisions even if the provider offers existing solutions and approaches. Unfortunately, weaknesses and bad practices in outsourcing arrangements can lead to architectural misunderstandings or restrictions that can be costly or damaging to business performance. On the other hand the provider may enable a customer to adopt a proven, reliable architecture at much lower cost and in much faster time-scales than agreeing and developing a solution in house (for example hosting services). Business Value Measures are key to sourcing Governance. The role of governance in outsourcing is to establish which decision rights are retained and which are outsourced. The IT Governance aspects of outsourcing arrangements are almost exclusively centrally managed by the corporate CIO office. It is clear that outsourcing does not relieve management or the directors of any responsibility. Indeed, it adds to the complexity of their responsibilities, because they have delegated certain responsibilities to others. However, most outsourcing arrangements lack appropriate IT Governance considerations.

Outsourcing will fail if the customer not ensures that all the right controls are in place with any third party that is relied upon for legal and regulatory compliance. Weaknesses and bad practices in outsourcing arrangements can lead to architectural misunderstandings or restrictions that can be costly or damaging to business performance.

**Empirical Investigation**

**G. OUTSOURCING**

*One choice is possible as an answer.*

<table>
<thead>
<tr>
<th>Question</th>
<th>Options</th>
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<tbody>
<tr>
<td>How comfortable does management feel with sourcing?</td>
<td>(0) Very uncomfortable</td>
</tr>
<tr>
<td></td>
<td>(1) Uncomfortable</td>
</tr>
<tr>
<td></td>
<td>(2) Moderately comfortable</td>
</tr>
<tr>
<td></td>
<td>(3) Very comfortable</td>
</tr>
<tr>
<td>How are relationships between the IT department and service providers arranged?</td>
<td>(0) Verbal</td>
</tr>
<tr>
<td></td>
<td>(1) Informal</td>
</tr>
<tr>
<td></td>
<td>(2) Formal</td>
</tr>
<tr>
<td></td>
<td>(3) Formal with SLA</td>
</tr>
<tr>
<td>What percentage of the IT budget is spent on sourcing activities?</td>
<td>(0) None</td>
</tr>
<tr>
<td></td>
<td>(1) &gt; 1% - &lt;= 25%</td>
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<tr>
<td></td>
<td>(2) &gt; 25% - &lt;= 50%</td>
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<tr>
<td></td>
<td>(3) &gt; 50%</td>
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<tr>
<td>How often do you evaluate the outsourced services with your provider?</td>
<td>(0) Every month</td>
</tr>
<tr>
<td></td>
<td>(1) Every quarter</td>
</tr>
<tr>
<td></td>
<td>(2) Once a year</td>
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<tr>
<td>Do you apply the penalties if the service is out of SLA conditions?</td>
<td>(0) Never</td>
</tr>
<tr>
<td></td>
<td>(1) Only in business-critical down-times</td>
</tr>
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<td></td>
<td>(2) Always</td>
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8. Service Level Agreements

H8: Defining Service Level Agreements is positively associated with ITG Performance.

In a maturing ITG environment, service level agreements (SLAs) and their supporting service level management (SLM) process need to play an important role. A Service Level Agreement (SLA) is a contract between a service provider and a customer that specifies, usually in measurable terms, what services the service provider will furnish.

The functions of SLAs are: (1) to define what levels of service are acceptable by users and are attainable by the service provider, and (2) to define the mutually acceptable and agreed upon set of indicators of the quality of service. Three basic types of SLAs can be defined: in-house, external, and internal SLAs. The differences between those types refer to the parties involved in the definition of the SLA. An in-house SLA is an agreement negotiated between an in-house service provider (e.g., the IT department) and an in-house client or department (e.g., marketing). External SLAs are SLAs between an external service provider (third party) and an organisation. Internal SLAs, finally, are used by a service provider to measure the performance of the groups within its own organisation (Grembergen et al., 2004). The negotiation of SLAs should be completed by an experienced and multi-disciplinary team that equally represents the user group and the service provider.

The SLM process includes the definition of a SLA framework, establishing SLAs including level of service and their corresponding metrics, monitoring, and reporting on the achieved services and problems encountered, reviewing SLAs, and establishing improvement programs. The major governance challenges are that the service levels are to be expressed in business terms and that the right SLM/SLA process has to be put in place (Grembergen et al., 2004).

Empirical Investigation

H. SERVICE LEVEL AGREEMENTS

Multiple choices are possible as an answer.

The main reasons for concluding agreements between the IT department and third parties are to …?

(0) Make service provider responsible
(1) Keep business satisfied
(2) Allocate costs

Which common criteria ranking do you prefer for negotiating service level agreements?

(0) Cost
(1) Quality
(2) Balance between Cost and Quality
(3) Minimum Risk
(4) Other

One choice is possible as an answer.

Do you define the SLA also for the internally delivered IT services?

(0) No
(1) Yes
9. Conclusions

ITG is an integral part of corporate governance and analogously combines leadership, organizational structures, and processes that ensure that IT sustains and extends the organization's strategies and objectives. Effective governance requires the two types of congruence: harmonizing the 'what' of governance and harmonizing the 'how'. The 'what' of governance includes enterprise goals, ITG style and performance measures. The 'how' of governance includes desirable IT behaviours flowing from enterprise goals, the ITG mechanisms in place, and IT metrics and accountabilities. The Framework depicts how enterprise goals, governance styles and performance measures are synchronized and how goals are linked to behaviours, styles are matched with mechanisms and performance measures are linked with IT metrics.

How do the impact factors IT Principles, IT Architecture, Ownership and Accountability, Regulation, Organization, Transparency, Outsourcing and Service Level Agreements influence IT Governance?

The following statements are based on literature review and need the confirmation and refusal by an empiric investigation. The empiric investigation would be an object of the following scientific works.

An effective set of abstract IT principles could have a clear relationship to the overall institutional mission and its goals and objectives are positively associated with ITG Performance. When the architecture is organized around business functions, IT leaders should be able communicate more effectively with the business units, and business changes may be carried out more efficiently. The maturity of IT Architecture is positively associated with ITG performance. A lack of clear roles, responsibilities and accountability may decrease ITG performance. High maturity of Regulation possibly increases the legal- and regulatory complexity (e.g. control objectives) and in turn may decrease the ITG performance. Relational mechanisms based on a two-way communication between the business and IT people (social dimension) in the organization could be positively associated with ITG Performance. The less transparent the governance processes are, the less people are likely follow them. Transparency could be positively associated with ITG Performance. Outsourcing is potentially positively associated with ITG Performance, if the customer ensures that all the right controls are in place with any third party that is relied upon for legal and regulatory compliance. Service Level Agreements and Continual Service Improvement based on key performance indicators and key goal indicators also may be positively associated with ITG Performance.

References


**APPENDIX**

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<tr>
<th>#</th>
<th>Company</th>
<th>Category</th>
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<tbody>
<tr>
<td>01</td>
<td>ABB (Sweden-Switzerland)</td>
<td>Manufacturing</td>
</tr>
<tr>
<td>02</td>
<td>ABN AMRO (Netherlands)</td>
<td>Financial services</td>
</tr>
<tr>
<td>03</td>
<td>ALCATEL (France)</td>
<td>IT/telecom</td>
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<tr>
<td>04</td>
<td>ALLIANZ AG (Germany)</td>
<td>Financial services</td>
</tr>
<tr>
<td>05</td>
<td>ALSTOM (France-UK)</td>
<td>Manufacturing</td>
</tr>
<tr>
<td>06</td>
<td>AVENTIS (France-Germany)</td>
<td>Manufacturing</td>
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<td>07</td>
<td>AXA (France)</td>
<td>Financial services</td>
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