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Selecting and Ranking IT Governance Practices for Electric Utilities

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ABSTRACT

Although general literature and several frameworks suggest practices for IT Governance, there is still no consensus about which should be considered “best” or “essential”. It seems reasonable to assume that recommendations of specific practices depend on factors such as the target industry, company profile, culture, and IT organization preferences. The literature on the subject for the electric utility industry seems particularly scanty. We have taken a first step in filling this gap by performing a literature review and then discussing our preliminary findings with top level IT executives from an electric utility in Europe and another in South America. We came up with a list of 83 practices that can be used to address distinct dimensions of IT Governance (leadership, structure, process, social, and relational mechanisms) and with a shorter list of 14 key practices classified into Essential, Important, and Good that are deemed the most relevant for electrical utilities.

Keywords

IT Governance, best practices, ranking, electric utility.

INTRODUCTION

The relevance of Information Technology (IT) in today’s competitive market is no longer questioned. A survey indicates that companies which practice good IT Governance could expect an increase of at least 10% in market value (Weill and Ross, 2004). Hence, it makes sense to identify and adopt IT Governance practices that are considered responsible for superior results. However, selecting and prioritizing which IT Governance practices fit with companies’ needs is no trivial task.

The complexity first stands on the understanding of the term “IT Governance”. During the last decade, distinct perceptions of IT Governance have been manifested (Grembergen and Haes, 2008; ITGI, 2007; Peterson, 2004; Weill and Ross, 2004). Even though most of them focused on processes and the distribution of decision-making rights and responsibilities to govern the IT function, there is still no unique and broadly accepted definition. To be prudent, we decided to adopt an open stance regarding all of these previous approaches.

Once IT Governance is defined, the selection of its practices will rely on factors such as the target industry, market of operations, style of management, and IT organizational and operational characteristics (Weill and Ross, 2004). Sambamurthy and Zmud (1999) also emphasize that IT Governance within a company is a result of multiple contingencies: corporate governance, economies of scope, and absorptive capacity. Therefore, the corporate context seems to be determinant to IT Governance choices. In particular, this paper focuses on selecting and ranking IT Governance practices in the context of electric utilities.

Electric utilities depend on IT infrastructures and services that are complex and expensive to operate and whose performance is hard to link to that of the business. IT-business misalignment may be a major source of waste. Often, these utilities rely on outsourcing contracts to keep their IT infrastructure operating at, hopefully, acceptable levels. A problem that frequently

comes to the minds of IT executives at these utilities is which measures to adopt in order to achieve good IT Governance – i.e., IT cost efficiency and effectiveness in contributing to business results.

Because regulation and competition in this industry are relatively stable, with sparse changes in the external environment, it is easier to more directly link company results to internal factors that affect operations (Stratopoulos, 2008). Some of these factors are IT Governance practices. Once practices have been identified and understood for this industry, one could pick another with a more dynamic environment to re-examine the impact of the identified practices and come up with a different ranking or introduce new practices altogether.

Before talking to executives from electric utilities in Europe and South America, to select and grade IT Governance practices for their industry, we came up with a compilation from several sources. Besides general literature review, we included frameworks (ITGI, 2007, Weill and Ross, 2004) and also recommendations from practitioners (CA, 2005; ITPCG, 2008; NCC, 2005; PWC, 2006).

In spite of the fact that IT Governance is the subject of much debate and steady progress, its literature still lacks specialized coverage of applications for the electric industry. This paper contributes to such coverage.

The paper is organized as follows. The next section presents methodological aspects of this research, followed by a brief literature review on IT Governance. Then, we organize IT Governance practices panned from the literature, from contacts with IT executives, and from specialized conferences and workshops. These practices were used for selection and ranking by IT executives from the electric utilities we approached. As a result, we came up with practices organized according to their relevance as indicated by the executives we interviewed. Finally, the last section is dedicated to conclusions and suggestions for future work.

RESEARCH DESIGN

Besides selecting a comprehensive set of general IT Governance practices from the literature, this paper collects practices used in the context of the electric utility sector. For that, a matrix of IT Governance practices was assembled. It contains a summary description of each practice, respective references, and a total of references that were found about it. This preliminary work was conducted through a literature review taking into account academic publications and recommendations from consultants and companies involved with IT Governance.

In order to add practices from the electric utility sector to the matrix, we conducted a field research on IT Governance at two multi-billion dollar electric utility companies – which we identify as “X” and “Y”. In spite of belonging to the same sector, the case studies of the companies enriched the study with complementary contexts, as suggested by Yin (1994). Company X belongs to a private European group and has operations in North America, Africa, and Latin America. Its IT staff consists of 60 professionals who mainly manage outsourcing contracts. Company Y is a government-owned company in South America with a 500 strong in-house IT team.

Formal introductory meetings, followed by presentations and workshops with IT executives in each company X and Y were used to identify each company’s IT Governance model and adopted practices. The process of triangulation of distinct sources of evidence - such as corporate document analysis, literature research, presentations, R&D reports, and formal opinions - was used to improve the confidence on the data inserted in the matrix (Jick, 1979).

The first version of the matrix of practices contained a wide set of 100 items. After reviewing and discarding duplicate, equivalent practices (perhaps worded in slightly different ways), we were left with 83. According to distinct dimensions of IT Governance identified in the literature review, this set of practices was then classified into 5 groups, as presented later in this paper. We then selected the most frequent for the electric industry from those 5 groups. The main criterion for selecting a given practice was the number of references and executive documents we managed to find about it. A list of the most frequently quoted practices was then used to steer meetings with IT executives at both Companies, X and Y. The executives were invited to rank selected practices according to importance for IT Governance at their company: Essential, Important or Good. After the selected practices were presented, explained and discussed to avoid semantic misunderstandings, the respondents proceeded to rank them, negotiating differences of opinions in order to offer a company vision, minimizing individual biases.

LITERATURE REVIEW

The literature presents distinct dimensions of IT Governance that yield recommendations of practices according to the adopted lens: older works focus on “best shapes” of decision-making authority (Sambamurthy and Zmud, 1999; Weill and Ross, 2004; Xue, Liang and Boulton, 2008) while others prefer to deal with “best control processes” of the IT function (ITGI, 2007).

Sambamurthy and Zmud (1999) identified patterns of authorities (IT arrangements or structures) for IT activities in companies, including IT infrastructure, IT use, and project management. They suggested that factors such as firm size, economies of scope, and IT knowledge, influence three IT Governance modes: centralized, decentralized, and federated. Expanding this approach, Weill and Ross (2004) see IT Governance as “specifying the decision rights and accountability framework to encourage desirable behavior in the use of IT”. Although this work identified best IT arrangements, the authors recognize that companies with outstanding results deviate to some extent from the identified patterns. Recently, the authors of (Xue et al., 2008) argued that allocation of decisions rights in Chinese hospitals is only part of IT Governance in the IT investment decision processes.

The IT Governance Institute defines IT Governance in the COBIT framework as “(...) the responsibility of the board of directors and executive management (...) 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, 2007). Although COBIT describes decision-making structures, it emphasizes control over the IT function. The control is implemented using a collection of control objectives for IT processes over the entire IT Governance life cycle (ITGI, 2007). COBIT has been mostly used by large companies with support of consultants in order to adjust its recommendations to specific contexts (Guldentops, 2006). For instance, in the context of a Swedish electric utility, where there is a reduced in-house IT team and most of its IT activities are outsourced, Simonsson and Hultgren (2008) pointed out that there is only a small collection of COBIT processes in place, namely, those related to planning, quality, and risk management.

According to Grembergen and Haes (2008), these previous dimensions don’t seem enough for effective IT Governance. They posit that IT Governance can be deployed using a mix of structures, processes and relational mechanisms. In their view, these mechanisms are necessary to intensify the relationships and knowledge sharing between business and IT, include user engagement in software development, IT training for executives, relationship management, and other liaison activities. In this sense, Peterson (2004) argues that a relational capability is achieved by alliances among corporate executives, IT management, and business management.

In addition, the alignment between IT and Business objectives (a major goal of IT Governance) was subject of much debate in the early 1990’s (Henderson and Venkatraman, 1999). In a complementary dimension, Reich and Benbasat (2003) investigated how several social factors interfered on the social dimension of alignment between business and IT objectives. The authors defined the social dimension of alignment as “the state in which business and IT executives understand and are committed to the business and IT mission, objectives and plans”. The alignment between people and technology in IT Governance has also received contributions from other science fields such as social capital analysis (Hatzakis, 2004), social contracts (Blois, 2002; Cannon, Achrol, and Gundlach, 2000), psychology, and sociology (Bieberstein, Bose, Walker, and Lynch, 2005; Martins and Cunha, 2008).

In this paper, we take an open stance regarding these multiples views of IT Governance mentioned in this section. Taking these dimensions into account, in next section we present distinct categories of practices we elicited from the specialized literature and from the companies involved in this research.

IT GOVERNANCE RECOMMENDED PRACTICES

According to OGC (2007), “practices” refer to a well tested and documented set of activities and processes, which were successfully used by distinct companies, and, as a consequence, could be easily reutilized with predictable results. We follow previous initiatives (CA 2005; NCC, 2005) who select a set of sound business practices considered key to properly govern IT resources.

Eighty three IT Governance practices – as recommended for general adoption by corporations at large and not only by electric utilities – were gathered from the literature, corporate documents, and from interviews and workshops with IT executives from Europe and South America. Then, these practices were organized into five groups representing distinct dimensions of IT Governance: leadership (ITGI, 2007), structure (ITGI, 2007; Weill and Ross, 2004), process (ITGI, 2007), social (Reich and Benbasat, 2003) and relational (Grembergem and Haes, 2008). Each group (Figure 1) is discussed in more detail bellow.

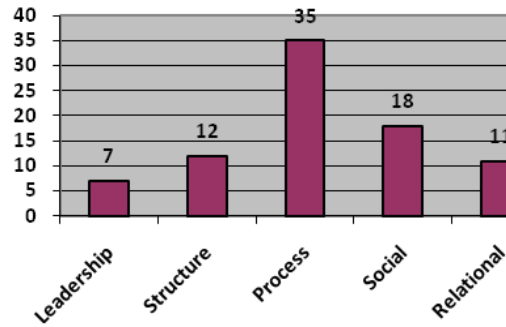


Figure 1. IT Governance Practice Groupings.

Leadership

IT Governance assumes a proactive behavior on the part of IT executives. Difficulties in understanding IT contributions to the business may cause IT-related decisions to be delayed. Hence IT executives must lead in order to speed up decisions, execute critical actions, and harmonize sometimes competing interests of corporate IT users. Practices in this group are listed in Table 1.

| Practice | Source |
|---|---|
| L01. CIO comfortably plays technical, business, and leadership roles. | (Peppard and Ward, 1999) |
| L02. IT Governance concepts are understood by a growing number of corporate executives. | (NCC, 2005; Peppard and Ward, 1999) |
| L03. Stakeholders engage in IT actions. | (Grembergen and Haes, 2008; Peppard and Ward, 1999) |
| L04. CEO supports and works closely with CIO, harmonizing urgent business and IT matters. | (Gottschalk, 2006; ITGI, 2007; Reich and Benbasat, 2000) |
| L05. Top-level management endorses strategic IT usage in what concerns resource prioritization, change implementation, and project execution support. | (Gottschalk, 2006; Luftman and Kempaiah, 2007; Teo and Ang, 1999) |
| L06. Project managers are chosen for their technical and interpersonal skills. | (Kappelman, McKeeman and Zhang, 2006) |
| L07. IT management ensures continuing engagement of project teams. | (Kappelman et al., 2006) |

Table 1. IT Governance Practices in Leadership

Structure

The organization of the corporate structures that decide on and monitor IT issues is critical for IT Governance. Roles and responsibilities must be clearly formalized and communicated throughout the company. It is up to the corporate steering committee to define who will be in charge of the decision process at all levels.

The CIO is a key player in enforcing IT policies. Although he/she is the liaison between the IT function and the business areas, he/she cannot be solely responsible for the linkage. Weill and Ross (2004) extend the discussion on decision chain beyond the usual centralized, decentralized or federated approaches. They suggest that responsibilities be given to groups to decide on principles, architecture, infrastructure, application needs, and IT investments in order to achieve superior performance. Practices in this group (listed in Table 2) suggest distribution of responsibilities to persons and committees, according to the nature of the IT decisions to be made.

The items marked (**) were collected in company documents or meetings

| Practice | Source |
|---|--|
| S01. CIO sits in the corporate board. | (ITGI, 2007; Peppard and Ward, 1999; Reich and Benbasat, 2000) |
| S02. Establish an IT Steering Committee at executive level – composed of the CIO, key advisors, and other business executives – to assist the executive management in the delivery of IT strategy. | (ITGI, 2007; Weill and Ross, 2004) |
| S03. Establish an IT Strategic Committee at board level – composed of board members and (specialist) non-board members – to advise the board and management on defining IT strategy (this committee focuses on current and future IT issues). | (CA, 2005; Grembergen and Haes, 2008), |
| S04. Establish an IT Supervisory Committee to oversee outsourcing. | (PWC, 2006) |
| S05. Establish an IT Audit Committee to identify, evaluate, prioritize and manage risks. | (ITGI, 2007) |
| S06. Specify and monitor the work for internal audits with direct communication channels to the CEO | (ITGI, 2007) |

| | |
|---|---------------------------|
| and IT Audit Committee and eventually, to independent, external auditors. | |
| S07. Specify the scope and the head of the IT Audit Committee. Ensure that annual stakeholders' satisfaction surveys and conformity checks are executed (including security aspects). | (ITGI, 2007) |
| S08. Centralize strategic decisions on architecture, outsourcing, application certification, investments and technological infrastructure in the IT Management Team. | (ITGI, 2007;PWC, 2006;**) |
| S09. Decentralize decisions on applications to the IT function at business units. | (PWC, 2006) |
| S10. Avoid annual changes in the IT Governance structure. | (Weill and Ross, 2004) |
| S11. Do not separate the Corporate IT infrastructure from that supporting operations and/or production. | (ITGI, 2007;**) |
| S12. Define a process modelling structure to analyze, prioritize and integrate applications into the organization. | ** |

Table 2. IT Governance Practices in Decision-making and Control Structure

Processes

To govern the IT function by means of processes that define practices and responsibilities for IT actions stems from corporate governance. In this vision, IT Governance is entirely attributed to the corporate board, which expects to have auditable processes to control IT processes efficiently.

The Control Objectives for Information and Related Technology framework – COBIT (ITGI, 2007) – is often quoted in the literature (Simonsson and Johnson, 2006) as the best known IT Governance framework. COBIT lists a set of control practices and instruments in four domains: Planning and Organization; Acquisition and Implementation; Delivery and Support; and Monitoring and Evaluation

Here, we neither have the room nor the objective to review each IT Governance process in detail. Rather, we intend to list (in Table 3) processes that have been tested and considered essential for superior performance in the bibliography or by the market.

The items marked (**) were collected in company documents or meetings

| Practice | Source |
|--|---|
| P01. Integrate IT Governance actions into those of corporate governance. | (ITGI, 2007) |
| P02. Align IT strategies and objectives to those of the corporation. | (Henderson and Venkatraman, 1999; ITGI, 2007; Weill and Ross, 2004) |
| P03. Define clear IT performance indicators trying to link them to business activities. | (PWC, 2006; Teo and Ang, 1999) |
| P04. Establish an IT Balanced Scorecard, approved by stakeholders, to evaluate IT performance. | (ITGI, 2007; NCC, 2005) |
| P05. Be SOX compliant. | (ITGI, 2007;**) |
| P06. Adopt recommendations of best practices in guides of IT Governance (such as COBIT); of IT service management (such as ITIL); and, of project management (such as PMBOK). | (NCC, 2005;**) |
| P07. Negotiate IT budget between the IT function and the business; allow for flexibility to alter budget to exploit opportunities. | (Peppard and Ward, 1999; Weill and Ross, 2004;**) |
| P08. Prioritize projects using criteria and common sense (this will also help handle technology “fads”). | (Reich and Benbasat, 2000;**) |
| P09. Promote cost transparency and reverse charging to increase perception of IT value. | (PWC, 2006; **) |
| P10. Identify "quick win" options to show results and facilitate acceptance for new projects. | (PWC, 2006;**) |
| P11. Outsource IT operations that clearly have a better cost-quality relation with third party services and which are not critical for the company | ** |
| P12. Use internal and external Service Level Agreements (SLA). Specify SLA limits and restrictions carefully. | (PWC, 2006;**) |
| P13. Monitor how management allocates IT resources to achieve strategic goals. | (CA, 2005; ITGI, 2007;**) |
| P14. Try to add value to the business with major IT projects. Use business cases with clear measurement criteria to demonstrate their value. | (ITGI, 2007;**) |
| P15. Pay particular attention to failures and weaknesses of IT controls and to their real and potential impact. Also consider when management acts immediately to address these issues and when additional monitoring is required. | (ITGI, 2007) |
| P16. Evaluate the scope and quality of management regarding the actual monitoring of risks and IT controls. | (ITGI, 2007) |
| P17. Develop an explicit process with measures to evaluate return x risk level as well as failure / acceptance rate of the innovative project portfolio. | (ITGI, 2007) |
| P18. Evaluate performance of senior management with respect to ongoing strategies and whether clear and strong messages about these strategies are being sent and understood throughout the company. | (CA, 2005; ITGI, 2007) |

| | |
|---|---------------------------------------|
| P19. Ensure that risk analysis is part of the strategic planning process and take into account vulnerabilities of the IT infrastructure and IT intangible asset exposure. | (ITGI, 2007) |
| P20. Maintain a growing client, product, market, and process knowledge base. | (ITGI, 2007) |
| P21. Develop and apply control practices that promote transparency, learning, flexibility, and that reduce complexity. | (ITGI, 2007) |
| P22. Institute control practices that avoid control and supervision breakdowns and thus increase efficiency and optimal usage of resources and in addition, increase IT process efficiency. | (ITGI, 2007;**) |
| P23. Integrate and promote continuous interoperability of the most complex IT processes (problem, change and configuration management). | (ITGI, 2007) |
| P24. Automate monitoring so that IT is able to evaluate itself according to selected performance measures, the efficiency of internal control systems and the status of the evolution of activities. | (ITGI, 2007) |
| P25. Properly specify success requirements and criteria. | (Kappelman et al., 2006;NCC, 2005;**) |
| P26. Establish adequate change control. | (Kappelman et al., 2006) |
| P27. Establish an integrated methodology for modelling, process automation, and infrastructure selection. | ** |
| P28. Model processes prior to Information System development or acquisition. | ** |
| P29. Certify information systems by the IT management team together with users prior to production phase-in. | ** |
| P30. Establish corporate policies and guidelines for the management of decentralized IT resources. | ** |
| P31. Provide an infrastructure that eases creation and sharing of business information and that is flexible and capable of being integrated and maintained; functional, cost-efficient, available whenever needed, secure and fault-tolerant; capable of extending, maintaining and managing legacy systems and new applications; compatible with standard and re-usable components and modular applications. | (ITGI, 2007) |
| P32. Standardize applications and architectures to ensure ease of evolution; establish corporate platform standards (Lotus Notes with Oracle database or Domino, Java with Oracle database and BPM, for instance). | ** |
| P33. Allow for the possibility to negotiate standard architecture and application exceptions if business value is proven. | ** |
| P34. Ensure that infrastructure optimization starts from real needs of IT clients, user profiles and related equipment standards. | ** |
| P35. Ensure that efficient and reliable IT services are consistently offered to user departments, with better cost-benefit ratios than the market's. | (NCC, 2005;**) |

Table 3. IT Governance Practices in Processes

Social

A recent market survey (ITGI, 2008) indicates that IT problems persist despite the evolution of knowledge on IT Governance. The study is incisive when it points that “people are the most critical problem”. Another study goes further and identifies issues of internal policies, lack of communication, lack of proper competencies, and resistance to change as common causes of complaints from executives (PWC, 2006).

The complex IT Governance system requires participation and contributions from people with different visions and motivations for IT usage. The diversity of interests and knowledge about IT hinders an effective control over IT Governance adoption (Peterson, 2004). The social practices focus on how people should be engaged and positioned in the IT Governance activities. Social practices therefore, aim to solve existing resistances and at increasing engagement to attain sustainable IT actions. Identified practices are listed in Table 4.

Items marked (**) were collected in company documents or meetings

| Practice | Source |
|---|---|
| H01. Hire IT professionals with technical expertise and knowledge of the company's business. | (Peppard and Ward, 1999;**) |
| H02. Identify IT roles within the organization to solve different IT expectations. Evaluate expectations in terms of value delivery, service level, level of developed applications, performance, reputation, and user and top executive relations. | (Peppard and Ward, 1999) |
| H03. Communicate IT Governance actions, goals and objectives to people at all levels and throughout the company, ensuring that they are understood and have clear value proposition to all stakeholders. | (ITGI, 2007; Kappelman et al., 2006) |
| H04. Create a channel for frequent and open communication between the IT department and its users. | (ITGI, 2007; Kappelman et al., 2006; Weill and Ross, 2004;**) |
| H05. Present IT issues clearly to executives from other areas so that they may have an adequate perception of their benefits and impact. | (ITGI, 2007; Weill and Ross, 2004) |

| | |
|--|--------------------------------|
| H06. Ensure that IT staff understands IT demands and expectations of executives from other areas clearly, so that they may take required actions and grasp the implications to the company. | (ITGI, 2007) |
| H07. Ensure that the CIO has interest and is engaged in measuring IT performance and its relations to other areas. | (ITGI, 2007) |
| H08. Assign experts on projects' topic and allocate enough time for their participation. | (Kappelman et al., 2006) |
| H09. Ensure that the corporate board trusts the CIO and the IT staff. | (NCC, 2005; Teo and Ang, 1999) |
| H10. Ensure that IT users trust the IT staff's work quality and efficiency. | (NCC, 2005; Teo and Ang, 1999) |
| H11. Ensure that the IT department is able to absorb (new) technology efficiently. | (Teo and Ang, 1999) |
| H12. Ensure that the IT department responds to users' requests quickly. | (Teo and Ang, 1999) |
| H13. Ensure that the IT department always provides creative ideas for the strategic usage of IT. | (Teo and Ang, 1999) |
| H14. Ensure that the CIO has a strong personality and has the ability to circumvent or surpass difficulties. | (PWC, 2006; **) |
| H15. Ensure that the CIO and IT staff get involved in the definition of IT strategic metrics and useful performance measures. | (ITGI, 2007) |
| H16. Embed clear responsibilities for IT control and risk management within the organization, balancing disciplinary actions and rewards, enabling quick and professional responses to IT Governance issues. | (ITGI, 2007) |
| H17. Ensure that IT staff establishes and disseminates continuing care in IT usage and evolution, in maintaining alignment between IT and business interests, and in learning new skill for future utility. | (Ciborra, 2000) |
| H18. Check user acceptance levels of IT, identifying possible resistance to be overcome. | ** |

Table 4. IT Governance Practices in Social Aspects

Relational

This group of practices highlights the importance of human actions for effective IT Governance. In fact, the relational mechanisms intensify relations between IT and business areas, promoting greater collaboration, understanding and engagement in IT actions throughout the organization (Grembergen and Haes, 2008; Peterson, O'Callaghan and Ribbers, 2000).

Previous experiments suggest that IT Governance horizontal capabilities should be developed (Peterson, 2004). These capabilities describe abilities to coordinate and integrate the formal decision process to encompass the entire corporate community of IT users and professionals – e.g., users should actively participate in the development of systems; IT training should be offered to executives; IT strategic plans should be formulated by IT and business professionals together. Relational practices are listed in Table 5.

Items marked (**) were collected in company documents or meetings

| Practice | Source |
|--|---|
| R01. Leverage IT by ensuring that IT staff manages relations with business units. | (CA, 2005; Grembergen and Haes, 2008, ITGI, 2007; **) |
| R02. Integrate IT and company plans, synchronize planned activities and time schedules, and engage top management. | (Gottschalk, 2006; Teo and Ang, 1999; **) |
| R03. Ensure that top management promotes strategic usage of IT for all users. | (CA, 2005; Teo and Ang, 1999) |
| R04. Ensure that business and IT executives share knowledge of their respective domains. | (Gottschalk, 2006; Henderson and Venkatraman, 1999; Luftman and Kempaiah, 2007; Peppard and Ward, 1999; Reich and Benbasat, 2000) |
| R05. Ensure the CIO has the ability to manage a portfolio of relations. | (CA, 2005; Henderson and Venkatraman, 1999) |
| R06. Ensure that top management brokers negotiations with client areas to define applications and infrastructure. | (CA, 2005; PWC, 2006; Weill and Ross, 2004; **) |
| R07. Coax top management to increase knowledge on IT potential - Workshops and frequent communication are needed to increase shared knowledge on the use of IT. | (Grembergen and Haes, 2008; Peppard and Ward, 1999) |
| R08. Define a relationship manager to handle interactions with providers in order to reduce risks by means of relationship management, resource allocation, alternative sourcing or acquiring a stake in providers' organizations. | (PWC, 2006; **) |
| R09. Ensure that the CIO participates in the development of the corporate business plan and that it is made available to the IT department. | (Peppard and Ward, 1999) |
| R10. Ensure that users participate in the development of the IT strategic plan. This plan must include a set of corporate objectives for the IT department. | (CA, 2005; Gottschalk, 2006) |
| R11. Ensure that IT and business collaborators are made responsible and credited jointly for the value IT adds to the business. | (CA, 2005; Weill and Ross, 2004) |

Table 5. IT Governance Practices in Relational Mechanisms

IT GOVERNANCE KEY PRACTICES FOR THE ELECTRIC UTILITY INDUSTRY

The recommended practices listed in the previous section serve as a general and comprehensive list that can be used when addressing any dimension of IT Governance. Furthermore, we also attempted to identify a smaller set of key practices – which are usually termed “best practices” (CA, 2005; ITIGI, 2007; ITPCG, 2008) – for the electric utility industry.

Discussions with executives with responsibilities on IT Governance at electric utilities in Europe (company X) and South America (company Y), in March-April 2009, enabled us to narrow down the set to 18 candidate practices. In both cases, it was agreed to organize them into three classes, A, B, and C, according to their importance to the company, as follows:

A – Essential for the success of IT Governance; B – Important for IT Governance, and C – Good practice, but of less importance than A and B. The interviews further helped us in collecting different perceptions and insights into IT Governance for the electric utility industry. Although our interlocutors were free to add other practices, none did. Four of our selected practices were “Not used in the company” (here we identify these practices as “N”). The resulting class breakdown of the remaining 14 practices is illustrated in Figure 2.

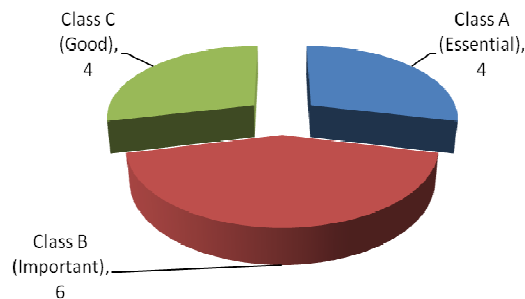


Figure 2. IT Governance Practices for Electric Utilities.

In the detailed classification of the practices bellow, some of them appear slightly reworded to better fit the electric industry profile more appropriately. Note that practice classification is sometimes highly dependent on the company’s characteristics: Company X’s revenues are 3 to 4 times that of Company Y’s; Company X relies on outsourcing while Company Y has a much larger IT staff that tends to favour in-house solutions; Company Y is state-owned while Company X is private. Where warranted we provide additional information on a perception or insight associated to a given practice offered by either company.

Class A Practices (Essential)

A1. “A Representative from the IT function (preferably the CIO) should participate in meetings of the corporate board, have the trust of the CEO and President of the board in strategic planning sessions, understand the business, be proactive and should have leadership characteristics.” One interviewee disagreed with this practice being classified as essential. The argument was that sitting on the board was not critical since discussions focus more on financial and corporate policy matters than on IT guidelines. The others however, were unanimous in asserting that presence on board meetings would be helpful to clarify and widen discussions on IT goals, needs and actions. The part on strategic planning, proactive and leadership behavior was acclaimed unanimously. Source: L01 and L03 from Table 1.

A2. “IT staff must manage relations with business units. Workshops and frequent communication should be promoted to increase shared knowledge on the use of IT in electric utilities”. This was unanimously voted as essential for IT Governance. Company Y holds only one formal, annual meeting, to promote closer integration amongst company areas. Company X distributed its business analysts so that they understand each business area intimately for better support of development and maintenance of high value adding information systems. Source: R01, R04 and R07 from Table 5.

A3. “Communicate IT Governance actions, goals and objectives to people at all levels and throughout the company ensuring that they are understood and have clear value proposition to all stakeholders.” This practice aims to make messages uniform and increase the understanding of IT governance actions. Company Y, for instance, established a group to communicate standards and progress of its SOX compliance project throughout the company, which has been accomplished with great success. Source: H03 from Table 4.

A4. “Be SOX compliant.” This one was adopted by Company Y as a necessary measure for company growth. In fact, this is a guideline dictated by its holding company. Company X discarded this practice. Source: P05 from Table 3.

Class B Practices (Important)

B1. “Establish an IT Steering Committee at the executive level – composed of the CIO, key advisors, and other business executives – to assist the executive management in the delivery of IT strategy”. Both companies informed that such a committee had been set up and functioned in the past but its actions concentrated in distributing equipment and other infrastructure issues. The existence and role of such a committee, together with those of a strategic committee, are being discussed with top management. This practice is also being recommended by audit and control consultants. Source: S02 from Table 2.

B2. “IT and corporate plans must be integrated, planned activities and time schedules synchronized, and have the engagement of top management”. In the context of Company Y, building integrated and more participative plans is a trend being stimulated by its holding for a higher degree of homogeneity of processes and standards amongst its various electric companies. In Company X, since IT transverses all company areas, the IT department begins working on the impact of technological options three months ahead of the start of the corresponding strategic planning activity. Source: R02 from Table 5.

B3. “Centralize strategic decisions on architecture, outsourcing, application certification, investments and technological infrastructure in the IT Management Team”. Both companies agree that this practice allows for faster and better IT decisions that lead to solutions that are more tightly integrated and that add higher value to the business. Source: S08 from Table 2.

B4. “Adopt recommendations of best practices in guides of IT Governance (such as COBIT); of IT service management (such as ITIL); and, of project management (such as PMBOK). Maturity levels and mechanisms should be customized for the most relevant processes for the electric utility sector”. Both companies acknowledge the usefulness and importance of frameworks for setting up IT Governance guidelines and policies. Extensive adoption of recommendations in these frameworks however is not viewed as critical. Quite on the contrary, excesses in the adoption of control mechanisms may increase costs and hinder freedom of action or customization in some processes. Source: P06 from Table 3.

B5. “Define a process modeling structure to analyze, prioritize and integrate applications into the organization”. Both companies agree that making IT decisions based on their impact on business processes is a major factor for IT-business alignment. Source: S12 from Table 2.

B6. “Hire IT professionals with technical expertise and knowledge of the company’s business”. This practice is more applicable to Company X which has higher flexibility to hire professionals and allocate them to specific areas. Hiring procedures enforced by the government restricts Company Y. Source: H01 from Table 4.

Class C Practices (Good)

C1. “Information Systems are certified by the IT management team together with users prior to production phase-in”. This is a SOX requirement but it is not yet a generalized practice throughout all of Company Y’s business units. Certification implies formal acceptance by clients and should lead to reverse billing or budget allocation by the business units. Source: P29 from Table 3.

C2. “Manage outsourcing contracts efficiently by means of strict SLAs and through diversification of providers”. This practice highlights the importance that internal and external SLAs have for IT Governance maturity. Company Y already uses external SLAs and plans to adopt internal SLAs soon. Source: P12 and P30 from Table 3.

C3. “Outsource IT operations that clearly have a better cost-quality relation from third party services and which are not critical for the company.” Due to its culture and legacy systems, outsourcing is not as common at Company Y as it is at Company X, except for its software factory effort which is heavily outsourced. Company X even tries to outsource IT processes but keeps proper intelligence control by IT top management. Source: P11 from Table 3.

C4. “Try to add value to the business with major IT projects. Use business cases with clear measurement criteria to demonstrate their value.”. Company X’s IT management tries to understand IT value to the business by means of business cases for major projects. Company Y also considers business cases important but their use is not yet widespread. Source: P14 from Table 3.

Not Used Practices (Not Considered Relevant)

Neither company X nor company Y use these four practices originally listed:

N1. “Do not separate the Corporate IT infrastructure from that supporting operations and/or production (in the electric utility sector operations relates to generation, transmission and distribution; the corporate IT infrastructure relates to administration aspects)” (S11 from Table 2); **N2.** “Define clear IT performance indicators trying to link them to business activities” (P03

from Table 3); **N3**. “Negotiate standard architecture and application exceptions if business value is proven” (P33 from Table 3) and **N4**. “Create a channel for frequent and open communication between the IT department and its users” (H04 from Table 4).

CONCLUSION AND FUTURE WORK

This paper has contributed to the area of IT Governance in the electric utility industry by uncovering 14 key practices deemed relevant by top level IT executives in this sector. A broader set of 83 recommended practices act as a list for specific interventions in the leadership, structure, process, relational, and social dimensions of IT Governance. The practices were gathered and organized from the body of knowledge in the IT Governance literature and validated by practitioners in the industry. Social practices are a top priority, according to interviewed executives – the importance of Communication and Relational Mechanisms is unanimous, whereas frameworks are considered important, but not to the extent the volume of material written about them seems to indicate.

The two companies we chose to discuss the selected practices sit at opposite ends of the corporate IT organization spectrum: one favoring outsourcing (Company X) and the other favoring in-house development (Company Y). Both tailor IT Governance to their own context: outsourcing, SLA adoption, and highly centralized IT management are a hallmark of privately owned Company X. Company Y, having the government as its major shareholder, centers its IT Governance approach in optimizing the existing infrastructure and in in-house process execution. In either company, however, interpersonal relations are a critical success factor. This is illustrated by the importance these companies attribute to what we call social practices, by classifying them as essential (class A).

Our contribution is important because there is a lack of written documentation on the subject that fits the needs and reality of the electric industry. IT Governance of electric utilities seems to evolve through an experimental process based on practices, feelings, and experience of those involved. It would be helpful to smaller companies in the sector if results could be made readily available in the literature. In addition, the group-class structure we used seemed to ease communication about IT Governance with professionals we talked to during the course of the research. The application of a similar approach to other sectors may be useful.

Regarding future work, we intend to continue our inquiry on social issues, since there seems to be no support instruments or mechanisms available for analyzing and treating this dimension. We will also probe deeper into the use of integrated automated tools to aid in IT Governance monitoring and control. Finally, we will try finding out if companies that mix outsourcing and in-house development adopt a combination of the approaches we saw in the companies we studied.

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