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Explaining Organizations' IT Governance Modes Choice from the Institutional Perspective: A Theoretical Framework Development

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EXPLAINING THE CHOICE OF IT GOVERNANCE MODES MADE BY ORGANIZATIONS FROM THE INSTITUTIONAL PERSPECTIVE: A THEORETICAL FRAMEWORK DEVELOPMENT[1]

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Abstract

This study uses the institutional theory as a lens for explaining choice of IT governance modes in organizations. Reasons are given to show how an IT governance mode can in itself be considered a legitimized institution. A conceptual framework is then developed, and several hypotheses are presented. The framework considers the IT governance modes from a non-rational perspective. It posits that coercive, normative, and mimetic pressures have an influence on the choice of IT governance modes.

Keywords: IT Governance, Institutional theory, Framework development.

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1 INTRODUCTION AND MOTIVATION

The North American business environment has in the past few years witnessed several major financial scandals caused by failure in corporate governance. Enron is one of the most dramatic examples of these scandals. A lack of appropriate corporate governance – processes, customs, policies, laws and institutions – can lead to a substantial financial loss of the shareholders' wealth, a loss of jobs, and even to bankruptcy. Today's Information Technologies (IT) penetrate all organizational processes by supporting organizational goals and corporate governance. Their importance for organizations can no longer be questioned. Like corporate governance, a lack of relevant IT governance measures can lead to several problems inside the company. For instance, IT-enabled business transformations have caused several disappointments for chief executives (Peterson 2004). Hence, it is easy to understand why IT governance is described as a fundamental business imperative. The formula today is not "getting IT right", but instead placing the right people in the right places with the right responsibilities to make sure that the organization meets its goals (Peterson 2004).

During the past decade, IT governance has been an object of major interest for researchers in the IT field. Several theoretical models based on various theoretical backgrounds have been proposed and tested (Purvis, et al. 2001, Chatterjee, et al. 2002) in order to clarify IT governance phenomena and to help practitioners.

IT governance is a combination of leadership, organizational structures and processes, with delivering value from IT to the business and mitigating IT risks as its twin goals (IT-Governance Institute 2003). More specifically, IT governance explains who has the authority to make IT related decisions. Several papers consider the topic of IT governance under different terms, such as IT strategic management, IS or IT organization (Brown and Magill 1994, Sambamurthy and Zmud 1999). These studies focus on the identification of elements which can provide instructions on how to organize IT governance. In addition, the importance of IT governance is often emphasized, since it has implications for IT performance, which in turn will influence the performance of the firm (Weill and Olson 1989, Weill 2004).

This paper focuses on IT governance modes, which are defined by Sambamurthy and Zmud (1999) as a combination of groups with authority to make decisions, and IT related activities. According to Sambamurthy and Zmud (1999), the IT governance within a company is a result of multiple contingencies which they categorize into three sets of forces: corporate governance, economies of scope, and absorptive capacity.

While this categorization adds several elements to the understanding of IT governance, it does not include non-rational elements that can shape decisions inside companies. Indeed, it considers only internal pressures within the organization (corporate governance), economic rationale driven by efficiency (economies of scope), and the ability of organizations to implement changes in the locus of IT decisions (absorptive capacity), which are all rational elements. According to Avgerou (2000), one cannot always assume that the managers, users and all participants in the organizational management process are rational actors. There has always been a certain amount of non-rationality in the management of organizations, and institutional pressures could be one such factor (Scott 2001). Researchers should then integrate the irrational aspect of institutions into research models so as to present a richer explanation of complex phenomena. Even though various models – e.g. Purvis et al. (2001), Chatterjee et al. (2002) - have added to the understanding of IT governance practices, the phenomenon still needs further clarification (Sambamurthy and Zmud 2000).

This study is an attempt to increase understanding of the topic of IT governance. More specifically, it explores IT governance from a non-rational perspective by adopting a relatively new theory in the IS field, namely the institutional theory. In recent years, several papers in the IS field have adopted the institutional theory to study IT related phenomena such as IT acceptance and use (Teo, et al. 2003), IT innovation (Swanson and Ramiller 2004) and IT implementation (Nicolaou 1999), but to our knowledge, IT governance has not yet been studied from the institutional perspective. More specifically, the purpose of this paper is to attempt to find an answer to the following research

questions: “Can IT governance modes be considered as institutions?” and “How do institutional pressures (mimetic, normative, and coercive) influence the choice of IT governance modes?” Adopting the organization - corporate, subsidiary, or single firm - as the level of analysis, key institutional pressures (DiMaggio and Powell 1983), and the impact of each on the choice of IT governance modes is identified and examined. At this point, our aim is to develop a general theoretical framework not related to any specific IT governance context or technology.
The paper is organized as follows. IT governance is presented first, followed by a description of institutional theory. A justification of IT governance modes as an institution is then proposed. Finally, a theoretical framework with hypotheses is developed. The study closes with discussion and conclusions. Limitations and suggestions for future research are presented in the final paragraphs.

2 THEORETICAL BACKGROUND

2.1 IT Governance

As a concept, IT governance modes (also called structures or forms) are subject to several definitions, each emphasizing one of its various aspects (Weill 2004). According to the IT Governance Institute (2003) “IT governance is the responsibility of the board of directors and executive management. It is an integral part of enterprise governance and consists of the leadership and organizational structure and processes that ensure that the organization’s IT sustains and extends the organization’s strategies and objectives.” IT governance is the set of responsibilities and practices exercised by the senior management of the enterprise, designed to establish and communicate strategic direction, to ensure realization of goals and objectives, to mitigate risk, and verify that assigned resources are used in an effective and efficient manner (IT-Governance Institute 2003).
According to Weill and Ross (2004), IT governance is specifying the decision rights and accountability framework to encourage desirable behavior in the use of IT. Good IT governance harmonizes decisions about the management and use of IT with desired behaviors and business objectives (Weill and Ross 2004).
IT governance is a term that first came into use in the late 1990s and has since then attracted a significant amount of interest (IT-Governance Institute 2003). But IT governance as such is not a new concept; its ramifications can be recognized in the IT research of the past several decades. For instance, as early as the 1960s, Garrity (1963) studied the implications of top management involvement for successful use of information technology. Since that time and until the early 1990s the concept of IT governance is used mainly implicitly in several studies (Doll 1985, Jarvenpaa and Ives 1991). In the early 1990s, IT governance started to emerge in IT research as an explicit concept (Loh and Venkatraman 1992, Henderson and Venkatraman 1993).
There is a difference between IT governance and IT management. According to Weill and Ross (2004), IT governance determines who makes the decisions, while management is the process of making and implementing those decisions. IT governance manages not only the technologies themselves, but also the use of those technologies in organizations (Dixon and John 1989, Brown 1997).
According to Weill and Ross (2004), IT governance is articulated around IT governance modes. In fact, the application of various IT governance decisions is encompassed by the chosen IT governance mode to be applied in the organization. The following section presents various IT governance modes identified in past research.

2.2 IT Governance Modes

According to Brown (1997), there is no universally best IT governance. Sambamurthy and Zmud (1999) presents the idea of spheres of key IT activities recognized in the literature (Clark, et al. 1997, Cross and Earl 1997, Weill and Broadbent 1998), and uses them in order to define IT governance modes. According to Sambamurthy and Zmud (1999), IT activities spheres are composed of three elements: IT infrastructure, IT use and project management. It is important to mention that the term

IT use in the IT governance context refers to something different from the notion of IT use in the IT adoption literature (Brown 1997). Indeed, in the IT governance context, IT use is a larger concept that describes several organizational components, IT implementation among them. Hence IT use describes individual or organizational acceptance and use of specific technologies.
According to Sambamurthy and Zmud (1999), governance modes can be organized into three main categories: centralized mode, decentralized mode and federal mode (the latter is also called shared or hybrid mode). In the centralized governance mode, corporate IS has locus of authority in all spheres of IT activities. In the decentralized mode, both divisional IS and line management may have locus of authority for a specific sphere of IT activities. Finally, in the federal governance mode, corporate IS has locus of authority on IT infrastructure, but divisional, line management, or corporate IS have locus of authority for IT use and project management.
Weill (2004) extends the repertoire of governance modes presented by Sambamurthy and Zmud (1999). Indeed, Weill (2004) classifies governance modes using 6 archetypes: business monarchy, IT monarchy, feudal, federal, IT duopoly and anarchy. For Sambamurthy and Zmud (1999) likewise, different patterns of locus of authority will form different governance archetypes. Even if there seem to be differences between Weill and Ross's (2005) and Sambamurthy and Zmud's (1999) IT governance modes, the two conceptualizations are fundamentally similar. In fact, both conceptualisations describe spheres of IT activities. In addition, both conceptualizations vary from highly centralized to highly decentralized.
The literature also introduces other governance modes, such as outsourcing (Loh and Venkatraman 1992), and partnerships (Powell 1990). Since the IT function is continually evolving, new IT governance modes appear from time to time. Among them, several modes are characterized by the fact that they transcend organizational frontiers and link organizations together (Agarwal and Sambamurthy 2002). However, these "new" modes are seen as an organizing logic, related to managerial rationale for designing and evolving specific organizational arrangements, in response to an enterprise's environmental and strategic imperatives (Sambamurthy and Zmud 2000). Furthermore, all these modes can be classified within Sambamurthy and Zmud's (1999) three IT governance modes. Hence, this study adopts Sambamurthy and Zmud's (1999) centralized, decentralized and federal IT governance modes.
In the following section, the institutional theory is introduced in order to point out the link between IT governance modes and institutional pressures.

2.3 Institutions and the institutional theory

According to Barley and Tolbert (1997), institutions are shared rules and typifications that identify categories of social actors and their appropriate activities or relationships. They are social structures that have attained a high degree of resilience (Scott 2001). Institutions are composed of cultured-cognitive, normative and regulative elements which, together with associated activities and resources, provide stability and meaning to social life (Scott 2001).
Organizations are suspended in a web of values, norms, beliefs, and taken-for-granted assumptions (Barley and Tolbert 1997). Managerial practices in the organisation are among these elements. For a practice to be considered an institution, it must be recognized by one or several social groups (Tolbert and Zucker 1996). According to Tolbert and Zucker (1996), in order to be institutionalized a phenomenon has to be recognized as process. There are three main process variable stages: the first is the partial acceptance stage (habitualization), the second is the diffusion stage (objectification) and the third is the saturation and total legitimacy stage (sedimentation). According to Jepperson (1991), to be institutionalized a phenomena must also meet the requirements of the property variable by being relevant to a certain analytical context.
The following section presents argumentation to show that IT governance modes have gone through the institutionalization process and that they are relevant to a certain analytical context.

2.4 IT Governance Modes as Institutions

As explained in the previous section, IT governance modes must be justified as process and property variables. In other words, to be considered institutions, IT governance modes must go through the institutionalization process in terms of habitualization, objectification, and sedimentation. In order to meet the requirements of property variables, IT governance modes must also meet the following qualifications: be relevant to a particular context, relative to a certain level of organization, relative to a particular dimension of a relationship and relative to centrality.

Firstly, habitualization behavior is developed in a sequential process for the purpose of solving a problem (Tolbert and Zucker 1996). In the case of IT governance modes, the problem is to decide how IT-related rights of decision will be distributed between corporate and business unit levels of management. For example, since mainframes emerged in the 1960s, the centralized IT governance mode was a common solution for dealing with issues related to mainframes. This centralized solution was provided driven by economies of scale (Brown and Magill 1998). Then, in the 1980s, IT started to play a strategic role at the business unit level (Brown and Magill 1998), thus forcing a move from the centralized IT governance mode towards decentralized modes. However, the drive to find a balance between conflicting corporate level advantages (cost efficiency) and business unit level advantages (control of strategic resource) led to the appearance of the federal IT governance mode in late 1980s.

Secondly, the objectification process is the achievement of a social consensus about the studied phenomena (Tolbert and Zucker 1996). As shown above, during every major period that IT governance has gone through, a consensus was attained and the governance mode became a recognized practice.

Thirdly, the sedimentation process is the historical continuity of a specific structure, and especially its survival across generations of organizational members. Since various IT governance modes have been applied over several decades, and since they are part of the historical continuity of organizational structures, IT governance modes have gone through the sedimentation process as defined by Tolbert and Zucker (1996).

Thus, this study led us to claim that IT governance modes, having gone through this institutionalization process, can be declared legitimized and fully institutionalized within organizations, in terms of process variables (Tolbert and Zucker 1996).

In addition, as IT governance modes should be justified in terms of property variables in order to be considered institutions, the arguments presented by Jepperson (1991) are followed.

Firstly, according to Jepperson (1991), the studied phenomena must be relative to a particular context. This is the case for IT governance modes. They are relevant in organizations and in a business context.

Secondly, Jepperson (1991) argues that the studied phenomena must be relative to a certain level of organization. For instance, IT governance modes appear to be institutions to individuals and groups of individuals in e.g. strategic management in the organization. Thirdly, the studied phenomena must be relative to a particular dimension of a relationship (Jepperson 1991). This is also the case for IT governance modes. In fact, within a company IT governance is more an institution for possible interest groups, such as IT suppliers, than for customers. Finally, to be considered an institution, the studied phenomenon must be relative to centrality (Jepperson 1991). As indicated, the IT governance mode is more an institution for members of the organization than for their families, for example.

This argument leads us to claim that IT governance modes can be declared legitimized and fully institutionalized in organizations in terms of property variables (Tolbert and Zucker 1996).

With the conditions for process variables and property variables satisfied, this study may conclude that IT governance modes can be declared institutions in the organizational field.

The following section presents the theoretical framework and hypotheses based on the influence of institutional pressures on choice of IT governance modes.

3 THEORETICAL FRAMEWORK AND HYPOTHESES

As argued in the previous section, IT governance modes are institutions in their own organizational field. Organizational fields are organizations that in the aggregate constitute a recognized area of institutional life (DiMaggio and Powell 1983). For example, key suppliers, resource and product consumers, regulatory agencies, and other organizations that produce similar services or products can be considered as being part of the organizational fields (DiMaggio and Powell 1983). However, according to Scott (2001), institutions are not purely organizations, since they operate at multiple levels. For instance, IT governance modes are institutions, and corporate governance can be another institution.

Institutional theory (DiMaggio and Powell 1983) posits that the organizational field exerts three kinds of pressure, which in turn makes organizations resemble each other by creating an isomorphism. Firstly, coercive pressures are exerted on organizations by other organizations upon which they are dependent. Secondly, normative pressures stem from professionalization, where organizational members of an occupation define the conditions and methods of their work. Thirdly, mimetic pressures appear in contexts of uncertainty, where firms tend to model themselves after similar legitimated or successful organizations. These three pressures will cause isomorphism, which is a process of homogenization between organizations (DiMaggio and Powell 1983).

According to DiMaggio and Powell (1983), predictors for isomorphic change are situated at organizational and field levels. These two levels of prediction are adopted in this study to categorize factors influencing isomorphic change of IT governance modes. The formulated hypothesis to be presented later, will be based on DiMaggio and Powell (1983). Figure 1 presents the developed theoretical framework.

The approach used to develop this theoretical framework was the mapping of two fields of literature, namely IT governance literature and institutional theory literature. Seminal papers in each discipline were identified and links between the various elements presented by each field of literature were pointed out. Twelve hypotheses were developed on the basis of this literature mapping,.

3.1 Coercive Pressures

Coercive pressures are present through the legal environment of the organization (DiMaggio and Powell 1983). In addition, standards imposed by structures on which the organization is dependent are another element of coercive pressures (DiMaggio and Powell 1983). DiMaggio and Powell (1983) identify coercive pressures based on the resource-dependence theory (Pfeffer and Salancik 1978). Resource-dependence theory explains how organizations lacking necessary resources become dependent on other organizations. At the organizational level, for instance, IT outsourcing may have a great impact on the IT governance mode. If an organization outsources its specific IT assets (Williamson 1985), it becomes very dependent on vendor action in terms of upgrades and development needs. These dependencies may affect internal arrangements of IT governance modes. Internal arrangements, structural and procedural, are made to advance more effective exchange relations, and in order to stabilize dependency on other organization (Tillquist, et al. 2002). The changes in the IT governance modes can be initiated by internal needs to control dependency on a vendor or by external pressures from the vendor. A partnership, for example, which is a business where partners share with each other the profits or losses, is a typical practical arrangement for integrating knowledge and authority between firms (Sambamurthy and Zmud 1999). Partnership models can be seen as a federal IT governance mode.

Coercive pressures are influenced by the power system (Scott 2001). Indeed, according to Teo et al. (2003), a dominant actor may demand organizations dependent on him to deploy structures or programs that serve his interests.

Similar coercive pressures may come from other organizations in the organizations field, as shown in figure 1. For example, parent companies, especially firms growing through acquisitions, execute great influence on their subsidiaries in order to integrate their IT governance structures (Sambamurthy and

Zmud 1999). This situation leads to isomorphism in the IT governance structures between these different organizations.

H1 (organizational-level): The greater the dependence of an organization as an institution on another organization as an institution, the more similar it will become to that organization in IT governance mode.

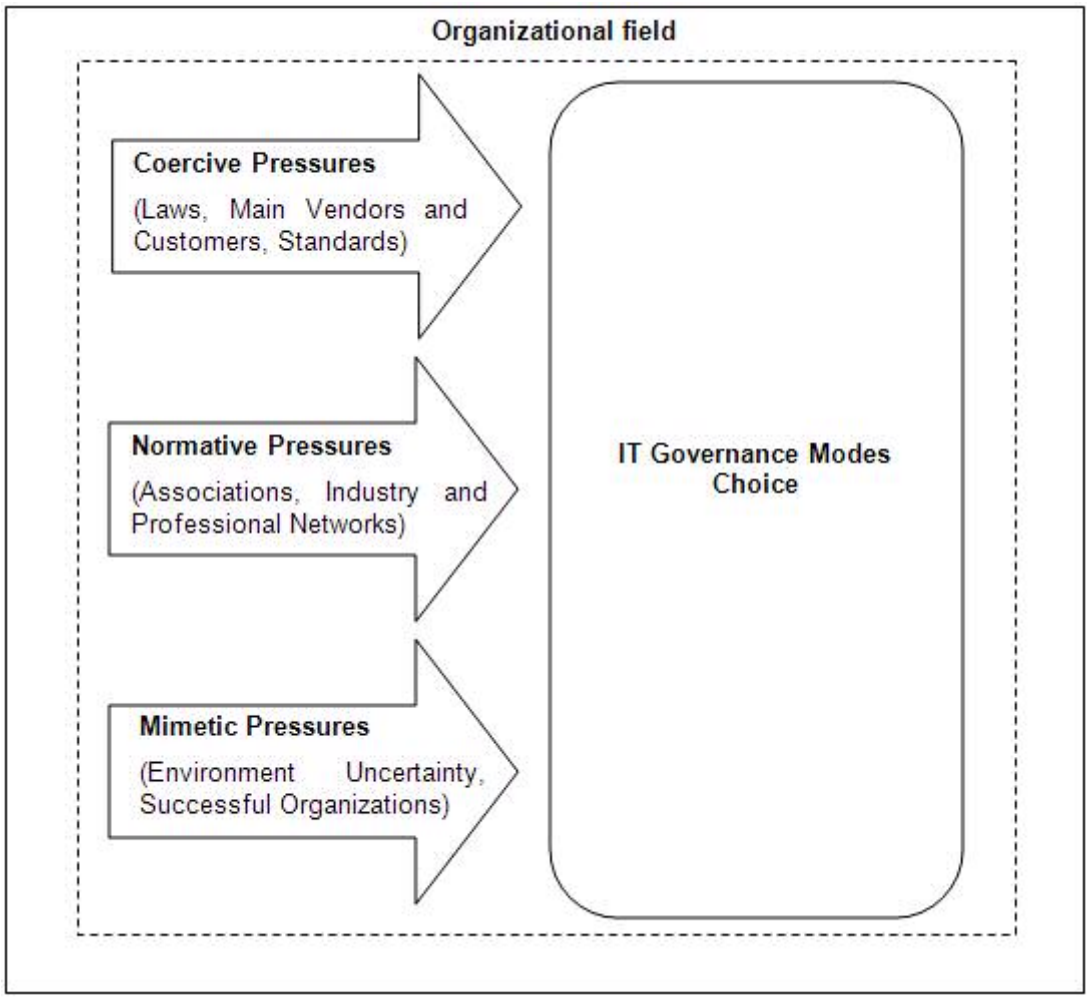

Figure 1. Theoretical framework

The concepts of total insourcing, selective outsourcing and total outsourcing are used as a taxonomy of the degree of outsourcing. According to Willcocks et al. (2006), selective outsourcing is a decision to source selected functions from external provider(s) while still providing between 20% and 80% of the operating budget of the function internally. Total outsourcing is the decision to transfer the equivalent of more than 80% of the function's operating budget for assets, leases, staff, and management responsibility to external providers. According to Sambamurthy and Zmud (1999), the more an organization outsources its IT, the more dependent it may become on this IT vendor, and the more isomorphism will be created between their IT governance modes. An organization may likewise be significantly dependent on raw-material suppliers (Sambamurthy and Zmud 1999).

H2 (organizational-level): The greater the centralization of the IT resources supply of organization A, the greater the extent to which A will change its IT governance mode isomorphically to resemble the organizations on which it depends for IT resources.

Isomorphism is also a consequence of the influence of IT source support. In fact, considering the example of ERP systems, companies that implement a specific solution of ERP (e.g. Oracle E-Business Suite) will try to implement its IT governance modes in order to gain the best results from the ERP system.

H3 (field-level): The greater the extent to which an organizational field is dependent upon a single (or several similar) IT sources of support for vital IT resources, the higher the level of isomorphism in its IT governance modes.

An organizational field can be very powerful. Gosain (2004) argues that organizations operating in highly regulated domains will tend to have enterprise information systems with similar mandated configurations. The banking industry can be perceived to be very regulated. Ang and Cummings (1997) show in the context of IT outsourcing that banks tend to acquiesce to the influence of federal regulators, in addition to the fact that they have to respond more strategically to pressures from peer banks. One may therefore also assume that the organizational field may have an influence on IT governance modes, and that the legitimation strategy of organizations varies, depending on the source of coercive pressure (Oliver 1991). The whole process will create isomorphism between the respective IT governance modes. For instance, COBIT (Control Objectives of Information and Related Technology) was created by the Information Systems Audit and Control Association (ISACA), and the IT governance Institute (ITGI). COBIT presents a set of IT best practices, which helps to develop appropriate IT governance. At the present time, thousands of companies outside the USA are also adopting COBIT. In addition, the Sarbanes-Oxley (SOX) law is a preventive response to corporate scandals like Enron. SOX defines standards related to accounting and reporting practices for all U.S. public company boards, management, and public accounting firms. Since accounting and reporting are provided by IT systems, SOX also has implications on IT governance. Thus the use of COBIT and the application of SOX law created isomorphism in several companies around the world.

H4 (field-level): The greater the extent to which the organizations in a field transact with governmental agencies, the greater the extent of isomorphism in IT governance modes in the field as a whole.

3.2 Mimetic Pressures

Mimetic pressures are caused by peers, professional associations or competitors (Teo, Wei, et al. 2003, Khalifa and Davison 2006). Since the decentralization process in organizations spread the locus of IT decisions around the organization, problems began to emerge. IT applications were well understood by subunit managers who, though willing, were not necessarily capable of controlling and acquiring IT resources. IT was developing rapidly, business strategy was often dynamic, and organizations were open to changes in the market (Boynton, et al. 1992). These changes caused pressures to manage technologies. As DiMaggio and Powell (1983) point out, a mimetic process starts in situations where technologies are poorly understood, and where there is a loose coupling between legitimated external practices and internal organizational behavior. This situation will create isomorphism in the organizational field (Boynton and Zmud 1987).

H5 (organizational-level): The more uncertain the relationship between means and ends in IT management, the greater the extent to which an organization will model its IT governance mode after organizations it perceives to be successful.

H6 (field-level): The fewer the number of visible alternative IT governance modes in a field, the faster the rate of creation of IT governance modes isomorphism in the field.

H7 (organizational-level): The more ambiguous the goals of an organization, the greater the extent to which the organization will model its IT governance mode after organizations that it perceives to be successful.

H8 (field-level): The greater the extent to which information technologies are uncertain within a field, the greater the rate of isomorphic change in its IT governance mode.

3.3 Normative Pressures

Normative pressures are caused by inter-organizational networks and similar educational backgrounds (DiMaggio and Powell 1983). IT development can be seen to cause transformations in IT governance modes. In the DB-era (1960s – early 1980s) (McFarlan and Nolan 1995), due to fairly stable technical development, IT functions were mainly the responsibility of IT people (Boynton and Zmud 1987). In the micro-era (1980s – early 1990s) (McFarlan and Nolan 1995) decentralization of decision making increased in tandem with third party applications. Executive management started to recognize the strategic possibilities of IT (Jarvenpaa and Ives 1991), and more strategic links were formulated between IT and business planning. By forming these links, called strategic alignment (Henderson and Venkatraman 1993), organizations aim to make their IT functions more flexible in serving business in order to achieve success (Sabherwal, et al. 2001). In other words, organizations define the legitimate means, such as the decision locus of IT governance, to realize developmental expectations in order to guide behavior.
However, even though executive management was very interested in IT, only few substantial changes were observed in the decision locus of IT management (Boynton and Zmud 1987). In fact, action of this kind created isomorphism in the IT governance modes of organizations during these computer eras (DB-era and micro-era). Jarvenpaa and Ives (1991) show that the CEO's background advanced progressive use of IT. They measure background in terms of the CEO's functional background (e.g. sales vs. administration), and age. Age covers issues such as experience in IT and education. Thus, the following hypothesis can be formulated:

H9 (organizational-level): The greater the reliance on academic credentials in choosing IT managerial and staff personnel, the greater the extent to which the IT governance mode of an organization will resemble that of others in its field.

In addition, according to Teo et al. (2003), adopting a technology is influenced by normative pressures caused by partners from the professional environment of the organization. Teo et al. (2003) claim that normative pressures are higher when there is participation in professional associations promoting a specific technology. These findings can also be applied for the choice of IT governance modes.
According to Von Simson (1990), one of the factors driving centralization is the variety of the information systems profession. When a larger variety of skills is needed, the availability of those skills becomes scant, leading to a situation where the necessary skills are collected from throughout the decentralized structure and then centralized in order to provide career paths for IS staff.

H10 (field-level): The greater the extent of professionalism in a field, the greater the amount of institutional isomorphic change in IT governance modes.

H11 (organizational-level): The greater the participation of organizational managers in trade and professional associations, the more likely it is that the IT governance mode of the organization is, or becomes, similar to the IT governance mode of others in its field.

H12 (field-level): The greater the extent of structuration in a field, the greater the degree to which IT governance modes are isomorphic.

4 DISCUSSION AND CONCLUSION

This paper presents two main contributions to both IT governance and institutional theory literature by presenting IT governance modes as institutions, and by mapping institutional pressures with IT governance modes. Firstly, a demonstration is made showing that the three different IT Governance modes - centralized, decentralized, and federal - meet the requirements of process and property variables and can thus be considered legitimized institutions. Secondly, institutional pressures are shown to play an important role in determining the chosen IT governance mode. Coercive pressures exerted by the legal environment of the organization and by standards imposed by structures on which the organization is dependent may have an impact on the IT governance mode choice. Mimetic pressures caused by peers, professional associations or competitors also play an important role in the choice of IT governance mode. Finally, normative pressures caused by inter-organizational networks and similar educational backgrounds may also have an important influence on the IT governance choice. Furthermore, hypotheses related to institutional pressures are adopted from DiMaggio and Powell (1983). This paper shows that even two decades after the original hypotheses of isomorphism were formulated (DiMaggio and Powell 1983), they still represent today's reality. However, as DiMaggio and Powell (1983) consider only organizations to be institutions, IT governance modes were added into their nomological net in order to formulate new hypotheses. These hypotheses are in line with the institutional literature, since according to Scott (2001), organizations are not purely institutions. Therefore, as shown, IT governance modes are justified as institutions. This is an important contribution to IT governance literature, since to our knowledge institutional lenses are not used to explain IT governance modes. Furthermore, the conceptual framework contributes to the literature pertaining to both IT governance and institutional theory.

For practitioners the implications are twofold. This study shows that IT governance as an institution is an essential part of corporate governance and organizational structure. However, the most significant finding of this study is that governance modes are not only a product of rational actors, but that they are also influenced by non-rational elements, namely institutional pressures. This in turn inspires more mindful thought on IT governance modes and IT governance in general. In mindful thinking (Swanson and Ramiller 2004) the organizations add reasoning, in this case rational acting and institutional pressures, grounded on their organizational facts and specifics to issues related to their IT governance.

This paper also presents some limitations. In fact, the paper describes IT governance modes as institutions, but does not evaluate how institutionalized (degree of institutionalization) these IT governance modes actually are. Furthermore, static lenses are adopted to evaluate IT governance modes as institutions. That is, only the locus of decision making view is adopted, thus delimiting a more dynamic view of how IT delivers these spheres of key IT activities. In addition, the developed theoretical framework is very general and not related to any specific context, technology or problem. Finally, due to the lack of an empirical section, the hypotheses cannot be verified.

However, we will try to address most of these limitations in our future research. First, we plan to select a specific organizational and technological context in which to test our hypothesis. Adding more specificity to the studied context and technology will help to refine our hypothesis. We intend to conduct multiple case studies in order to glean richer explanations and to verify our hypothesis based on a process model. We will use the instructions presented by Jepperson (1991) as a starting point, in order to explore the degree of institutionalization of IT governance modes. These case studies will provide more grounding and verifications for the presented hypothesis. However, testing all these hypotheses in a single study is not really possible as they cover a large number of situations and contexts that cannot be tested simultaneously. Therefore, we plan to consider these hypotheses in two or three groups related to their organizational context. We will start by testing and validating the theoretical framework of one group of hypotheses.

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