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Can IS/IT Governance contribute for Business Agility?

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Abstract

Business agility is the ability to answer quickly to internal and external changes, either reactively or proactively, in an efficient and effective way. Therefore, it is no surprise that business agility has become one of the top 10 most important organizational concerns for IT management.

To achieve business-IT alignment, organizations need to set up processes to support decision making regarding the effective and efficient use of information systems and information technology, i.e., *IS/IT Governance*. *Governance* means rules, organizational procedures, supervision, monitoring and control. On the other hand, agility requires degrees of freedom to decide and make changes in the business processes. The possible tension between IS/IT Governance and business agility may be a result of the conflict between adaptation versus anticipation. While governance requires planning, anticipation, supervision and control, agility requires high degrees of adaptation, many times under unforeseen circumstances. In this work, we propose a conceptual model to look into the relationship between IS/IT Governance and business agility.

Keywords: Business Agility; IS/IT Governance; IS/IT Alignment; Business Performance.

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1. **Introduction**

Business-IS/IT alignment and business agility have been on the top of IS/IT business executives and managers concerns [1, 2]. Several studies [3, 4, 5, 6, 7] repeatedly state that alignment has a positive impact on organizational performance and that is why organizations consider it a management priority.

On the other hand, the increase of market volatility, the world economy uncertainty, and products with a shorter life cycle push organisations to search for a more agile ability to deal with uncertainty and to identify threats and opportunities. New questions related to IS/IT supervision, monitoring and control face *Governance* as an IS/IT emerging area. Some organizations started to implement *IS/IT Governance* to reach better results on the scope of IS/IT alignment and organizations strategies.

Therefore, it is important to study how *IS/IT* Governance practices turn organizations more agile in order to increase value more efficiently, less expensive, in a context of high turbulence.

However, a question arises. If IS/IT Governance helps the alignment, will it allow for the required business agility to reach a better organizational performance?

Governance means rules, organizational procedures, supervision, monitoring and control. On the other hand, agility means a certain freedom of decision and process changing. Agility in business is the ability to feel highly uncertain external and internal changes and to answer them reactively or proactively, based on internal operational processes innovation, by involving clients in the exploration and by profiting business network partner resources. [27]

The tension between both concepts seems to come from adaptation versus anticipation. Agile methods need to be quite adaptable to decide in the last moment when change occurs while Governance defends anticipation from planning, controlling and supervising in advance [51].

This work starts with a literature review on *IS/IT Governance*. It then approaches the question of business agility, its definitions and relevance. Further, it establishes the relationship between IS/IT alignment and business agility, it investigates the relationship between alignment and organizational development where business agility intermediates the connection between alignment and business performance under variable IS/IT infrastructural conditions and environmental volatility. The article ends by proposing a conceptual model to analyse the interdependence and synergies created by these concepts trying to identify which IS/IT Governance practices turn easier and contribute to business agility.

The way that organizations face Information Systems and Information Technologies (IS/IT) and their role in organizations is changing. Today, it is widely recognized that IS/IT can raise value and highly contribute to business [9].

2. **IS/IT Governance**

IS/IT Governance is part of business management and it is based on leadership and on the creation of structures and organizational processes that assure IS/IT as a support, strategies implementation and organizations purposes. The identification and control of IS/IT Governance critical success factors (CSF) can impact on organizations success.

According to Robert S. Roussey, quoted by IT Governance Institute (ITGI) [10] "IS/IT Governance is a term used to describe the way *Governance* organization responsible persons consider IS/IT on supervision, monitoring, control and direction". IS/IT *Governance* is a role of the board of directors and of the executive management board and it is based on leadership and on structures creation and organizational processes that assure that IS/IT support and implement organization strategies and purposes. The way IS/IT is used has a high impact on the organizations ability to reach the vision, the mission and the strategic purposes [10].

We are facing an increase [6] of IS/IT Governance good practices, in order to assure high value and more efficient, proactive and business aligned processes management.

Current economic situation influences the way organizations manage technological resources. They prefer less dimension projects, more focused on business processes, more concerned with immediate results (*quick wins*) and with a quick implementation. This is a very common reality in market.

IS/IT Governance tries to assure a better use of IS/IT, focusing on the concepts of Strategic Alignment, Risk Management, Resources Management, Value Delivery and Performance Evaluation [12]. IS/IT Governance has its roots on the research of several thematic areas, namely Strategic Planning of Information Systems, Changing Management, IS/IT Productivity and Regulators/Auditors demanding [13].

Several works have found a positive correlation between Governance in organizations and their performance [14, 15, 45, 49, 50, 16]. Weil and Ross [14] said that "IS/IT Governance is even more important when we analyse organisations with a better *Governance* maturity index than the average of the sector. These can have a better income on actives, of at least 20%, when compared to organizations with more fragile *Governance*."

Wilkin and Chenhall [17] have analysed 496 scientific articles published in important magazines between 1998 and 2008, and they identify the roots of IS/IT Governance, concluding that it arises from a set of initiatives related to a more strategic use of IS/IT concerning investments made. These investments were made in the areas of strategy, planning and policy in order to raise more value. An example is ISO/IEC 38500: 2008 that focus IS/IT Governance on IS/IT evolution, direction and current and forthcoming monitoring. In the same way, *IT Governance Institute* (ITGI) directs its concept of *Governance* to a critical area for top management and develops tools and frameworks as *COBIT, Val IT e Risk IT* that help business managers to assure that IS/IT support business purposes and maximize IS/IT investments to allow them to act according to risk and opportunities management [17].

In order to maximize *IS/IT Governance* success, this must be supported by the top management that leads all process [18]. Some authors strengthen the importance of medium management as well. Its responsibilities include strategic investments definition, the indicators for value delivery and policy for risk management, resources management and performance evaluation [18,19]. Other authors make reference to the main role of IS/IT steering committee as CSF and Bowen [46] a mediator between business management and IS/IT team needs and must have as main concern the different needs of the several business areas.

3. Business Agility

Many authors stated that, in order to survive markets turbulence, organizations must be more agile [22, 23, 25]

Business agility is not something new in the literature, but only now we need to give it more relevance, mainly because of market turbulence and its volatility. In table 1, we quote some definitions that we can find in literature.

Table 1. Agility Definitions

Source	Definition
Luftmann et al. 1993	It is the ability to change environments' direction and to answer efficiently and effectively to that change
Haeckel, 1999	Defines adaptive companies in terms of sense-and-respond organizations, stating that truly adaptive corporations must "… manage information in a particular way; it must be managed as a system; and its leaders and employees must commit themselves to very different behaviours and responsibilities" essentially stating that sense-and-respond organizations function very differently than traditional organizations. It is believed that Haekel is referring to the adaptability of corporations as a form of agility for corporations.
Gartner, 2001	Agility is the ability to respond quickly and effectively to rapid change and high uncertainty.
Dove, 2001	Agility is the ability to manage and apply knowledge effectively, so that an organization has the potential to thrive in a continuous changing and unpredicted business environment. Agility implies not only the ability to respond to unanticipated change (response ability) but also to act proactively with regard to change
Sambamurthy, et al. 2003	…agility encompasses a firm's capabilities related to interactions with customers, orchestration of internal operations, and utilization of its ecosystem of external business partners. Operational agility ensures that firms can rapidly redesign existing processes and create new processes for exploiting dynamic marketplace conditions.
Frink and Neumann 2007	Agility is a characteristic of organizations and its executive boards to answer efficiently and effectively to market emerging opportunities
Oosterhout et al 2007	Business agility is the ability to sense highly uncertain external and internal changes, and respond to them reactively or proactively, based on innovation of the internal operational processes, involving the customer in exploration and exploitation activities, while leveraging the capabilities of partners in the business network.

Eshlagly et al. 2010	Agility is the organisations ability to detect Market opportunities and adapt to changes

We will adopt Oosterhout's definition, since it refers to internal and external changes that can be motivated by several factors, among which operational processes reorganization, which, on its hand, is motivated by *IS/IT Governance*. On the other hand, it underlines client involvement and business partners, which are a purpose of *Governance* methodologies [35]

Agility is a fundamental factor [36], even decisive, to allow well succeeded organisations in adjustment processes that they need to implement as quick as market changes demand it. It is not certainly the only one. Innovation, resilience, delivery and dedication are other decisive factors for success. But agility is the *sine qua non* condition [36].

The way organisations can deal with uncertainty, dynamism and permanent changing of the business environment is an issue discussed in the academic world. Several solutions have been proposed: networking, reengineering, modular organizations, virtual organizations, *just-in-time*, etc. Among the proposals on how to deal with the uncertainty and unpredictability of the business environment, three concepts prevail: *"Adaptive Organization"; "Flexible Organization"*; and *"Agile Enterprises"*. All of them converge in the ability to adapt and to act efficiently regarding changings and they are a result of the study evolution on organizations [37].

Just as we said before, it is *of most importance to study how, and if*, IS/IT Governance influence the agility of the organisations in order to allow them to raise value more efficiently, less expensive, in a context of great turbulence.
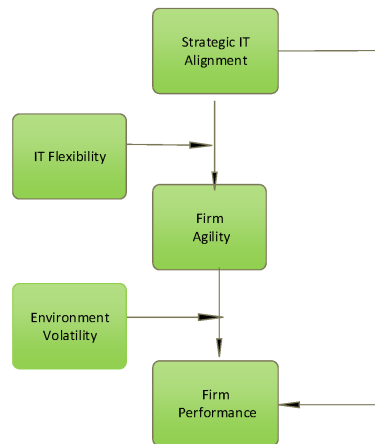

Figure 1. Conceptual Model from Tallon and Pinsonneault [8]

4. IS/IT Governance and Business Agility

There is a consensus about the fact that one critical factor in the relationship between IS/IT and business performance is IS/IT alignment with business strategy [39,40]. Since IS/IT alignment allows organizations to a have a real income on investments on IS/IT, alignment is seen as an important result for every business manager. To improve the level of alignment is among IS/IT responsible persons major concerns [43] and to identify the relevant alignment drivers is being extensively researched [40]. Some published studies have indicated that Governance processes, among which IS/IT's, develop a main role in IS/IT policy alignment [42, 43, 44]

It is consensual, in academic and business environments that Governance policies contribute to IS/IT alignment with organizational strategy. [45] However, we wonder if these contribute to business agility.

The IS/IT alignment is a priority for companies and for IS/IT executive members. Nevertheless, with an increase of markets' volatility, organizations are more interested in being more agile and in answering market's opportunities and threats more promptly and efficiently. If alignment helps or not performance, it is something evaluate under

variable conditions. Tallon and Pinsonneault's [8] clearly identify the relationship between alignment and firm performance under conditions of IT flexibility and environmental volatility (Figure 1.)

By using the information resulting from an enquiry to business executives in 241 organizations, Tallon e Pinsonneaulet [8] show a positive and significant connection between alignment and agility and between agility and organizational performance (Figure 1). They also noticed that the effect of alignment on organizational development is measured by agility and that environmental volatility positively moderates the connection between agility and business performance. Agility has a wider impact on organization performance in more volatile markets and also reveals that IS/IT infrastructure flexibility has a positive and significant impact on agility. In fact, the effect of flexibility on IS/IT infrastructure is as strong as the alignment effect on business agility.

In Table 2, we mention some studies already published about Alignment – Agility – *Governance*. In this work, we will approach IS/IT Governance / Business Agility / Performance.

Table 2 – Studies about Alignment – Agility – *Governance-Performance*

Author	Focus			
	Alignment	**Agility**	*Governance*	*Performance*
Tallon and Pinsonneault, 2011	X	X		X
Luftman et al. 2010	X		X	X
Oosterhout et al 2007		X		

5. Model Proposal

In this work, we aim at determining the relationship between IS/IT Governance and organizational agility.
In Table 3, we have a scheme of what is already proved and that we aim at validating.

Table 3. Relationships being studied

Source	Relationship			Status
Tallon and Pinsonneault, 2011	Str. Alignment → Agility	⟹	Performance	Validated
Luftman et al. 2010	Governance	⟹	Performance	Validated
Proposal	Governance	⟹	Agility	To verify

If we consider that Business Strategy is implemented in organizations with the support of IS/IT, moderated by *Governance*, which contributes to IS/IT alignment with the organization and to IS/IT flexibility.

We have also verified in Tallon and Pinsonneault'article [8] that they clearly identify the relationship by using a model in which agility mediates the connection between alignment and organizational performance and we also verify that IS/IT Governance contributes to organizations' alignment and performance [14,15, 49, 50]

Figure 2 describes the conceptual model to follow and validate. We aim at analysing the relationship between IS/IT Governance and business agility, building upon the model proposed by Tallon e Pinsonneault [8].

However, it is recognized that *Governance* policies highly contribute to IS/IT alignment with organizational strategy [45] but we question if they contribute to firm agility.

This is the relationship that we want to verify. Now the question is to know if that can happens without alignment as a mediator variable. Can *Governance* contribute to agility even without alignment? Furthermore, in SAM's model, *Governance* is just one of the six factors of alignment [1].

We would like to underline that the proposed model is quite different in certain aspects. Besides considering the IS/IT Governance, the IT Flexibility is not a moderator variable between Strategic IT Alignment and Business Agility; it is instead directly connected to Business Agility. This change is a result of the Tallon e Pinsonneault [8] study.
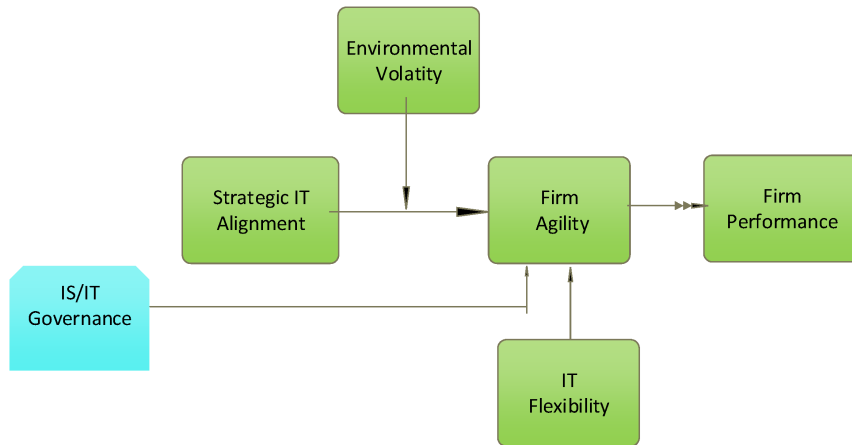
Figure 2. Research Model

By reviewing literature, we have already shown the relationship between *Governance* and IS/IT alignments with business strategy, we have verified the relationship between alignment and agility. Now we need to verify the relationship between *IS/IT Governance* and Firm Agility, if it exists.

In order to clarify this question, we will determine which Critical Success Factors help or promote agility to then identify *IS/IT Governance* practices that highly contribute to reach those CSFs. A selection of the most promising CSF for agility has been made from COBIT, a well-known IT governance framework with a good coverage of many Governance methodologies [53, 54] (Table 4):

Table 4. CSF from COBIT processes to achieve agility

CSF	COBIT Process
Flattened organisational structure	AP007
Smooth information flow	AP001
Team management for decision making	AP007
Interchange-ability of personnel	AP007
Devolution of authority	AP007
Clear definition of personnel's responsibility and authority	EDM01 E AP008
Education and training to create the self-managed teams	AP007
Nature of management	EDM01
Participative management style	EDM01
Clearly known management goal	AP001
Management involvement	AP007
Profit motivation coupled with humanitarian approach	AP007
Transparency in information sharing	EDM01
Regular conduct of employer–employees meetings	AP008
Rapid evaluation and implementation of employee suggestions	AP007

6. Future Work

CSFs have been selected to be validated by a group of experts. Only then efforts will take place to operationalize the variables in the research model in order to engage first in a case study and consider later survey research.

As a final goal, we aim at helping organisations, mainly SME, in adopting good *IS/IT Governance* practices that help these organizations to be more agile and survive and prosper in a turbulent and volatile environment.

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