

How to Identify and Measure the Level of Alignment between IT and Business Governance

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Abstract

Studies have shown that misalignment, or the lack of alignment, between IT and business strategies is one of the main reasons why enterprises fail to realize the full potential of their IT investments. Within enterprise governance, the alignment analysis between IT and Business governance¹ is becoming more important in achieving the organization's goals by adding value while balancing risk versus return over IT and its processes. IT governance is integral to the success of business governance by assuring efficient and effective measurable improvements.

In order to identify and measure the level of alignment between IT and Business Governance it is proposed in this article, the correlation between the Business Balanced Scorecard and the IT Balanced Scorecard. Moreover, it is presented a theoretical example of the scenario-based analysis technique (Process Simulation) to correlate a set of Key Performance Indicators of IT Processes (IT Services) with a set of Key Performance Indicators (KPI) of Business Processes. These interactions and correlations between KPI over time can result in a large number of scenarios, which at the same time will assure a solid base for a bottom up analysis of IT and Business Governance level of alignment. This paper presents preliminary research conclusions on how to identify and measure the level of alignment between IT and Business Governance by means of correlating IT and Business Processes KPI and assessing the possible and needed scenarios, applying process simulation.

Keywords: IT Governance (ITG), Business Governance (BG), Process Simulation (PS), IT and Business Alignment (ITBA), Balanced Scorecard (BSC), IT-BSC, IT Process (ITP), Business Process (BP).

1. TERMINOLOGY/ACRONYMS

ITG-	IT Governance
BG-	Business Governance
PS-	Process Simulation
BP-	Business Process
ITP-	IT Process
ITS-	IT Service
IT-BA-	IT and Business Alignment
ITP&BP-A-	IT Process and Business Process Alignment
ITS&BP-A-	IT Service and Business Process Alignment
CIO-	Chief Information Officer
CEO-	Chief Executive Officer
BSC-	Balanced Scorecard
IT-BSC-	IT Balanced Scorecard
CSF-	Critical Success Factor
KGI-	Key Goal Indicator
KPI-	Key Performance Indicator
ITIL-	IT Infrastructure Library
COBIT-	Control Objectives for Information and Related Technology
SD-	Service Delivery
SS-	Service Support

2. INTRODUCTION

¹ Source: IT governance Institute (ITGI)

Studies have shown that misalignment, or the lack of alignment, between IT and business strategies is one of the main reasons why enterprises fail to realize the full potential of their IT investments [4, 5, 9]. On the other hand, organizations that have accomplished a high degree of alignment are often associated with better business performance. As a consequence, the strategic alignment between business and IT has consistently been one of the top concerns of the CIO and CEO.

Within enterprise governance, the alignment analysis between IT and Business governance² is becoming more important in achieving the organization's goals by adding value while balancing risk versus return over IT and its processes [7, 8, 14, 20, 24]. IT governance is integral to the success of business governance by assuring efficient and effective measurable improvements. Fundamentally, IT governance is concerned about two problems: IT's delivery of value to the business and mitigation of IT risk. The first is driven by IT and business strategic alignment. The second is driven by embedding accountability into the enterprise. In this article it will be treated the problem related to the IT and Business strategic and operational alignment in a bottom up approach.

Therefore enterprises in order to obtain the maximum value from the IT investments, need to identify, to measure and to sustain certain level of alignment between IT and business governance.

For academics and IT practitioners, the key question, how to accomplish strategic alignment between business and IT in the complex and dynamic environment of the real world, remains unanswered and a great challenge for the CIO and CEO. However, in recent years, a strategic management tool called the Balanced Scorecard has gained increasing popularity in management literature and practices [1, 6, 16]. Researchers of strategic alignment have taken notice of the potential benefits of using the Balanced Scorecard as a tool or framework for implementing and sustaining the strategic alignment between IT and business strategies [4, 9, 11, 12].

This paper presents preliminary research conclusions on how to identify and measure the level of alignment between IT and Business Governance by means of correlating IT and Business Processes KPIs and selecting the most cost-effective scenario according to the business priorities or needs. A tradeoff should be made on the basis of scenarios as opposed to intuition, resulting in more informed business decisions. It is recommended to consider the CSFs and the KGIs in the bottom up assessment process.

3. RESEARCH BACKGROUND

3.1. IT and Business Alignment

Numerous research studies related to alignment were found in performing a literature review on this topic. In general, IT-business alignment as a construct concerns the degree of congruence or harmony of an organization's IT strategy and IT infrastructure with the organization's strategic business objectives and infrastructure. Several definitions supporting this characterization of alignment are available in the literature (Broadbent & Weill, 1993; Chan & Huff, 1993; Luftman, Lewis, & Oldach, 1993; Maes, Rijsenbrij, Truijens, & Goedvolk, 2000; Reich & Benbasat, 2000; Tallon & Kramer, 1998). Perhaps the most widely used model of alignment is the Strategic Alignment Model (Henderson & Venkatraman, 1999) [25]. This multidimensional model specifies internal and external dimensions along with strategic fit and functional integration dimensions.

In examining potential inhibitors to and enablers for achieving alignment, Luftman, Papp, and Brier (1999) found executive support for IT, joint IT-business strategy development, and understanding of the business by IT to be the top enablers of alignment, and identified the top inhibitors of alignment as a lack of close relationships between IT and business functions, poor prioritization by the IT function, and a failure of IT to meet commitments [21, 22, 26].

3.2. IT and Business Governance

As an analog model to the H&V alignment framework, it is presented in this paper, a conceptual model for the IT and Business Governance. It will be highlighted the IT processes in the form of IT service in correlation with business processes.

² Source: IT governance Institute (ITGI)

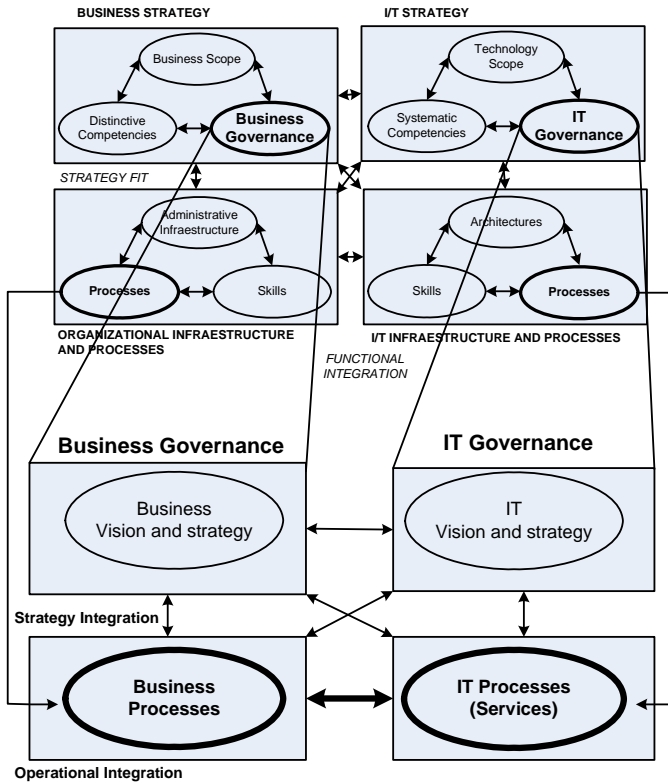


Figure # 1: IT and Business Governance Alignment

According to the COBIT framework, business governance, as the performance dimension of enterprise governance, focuses on the board’s role in making strategic decisions, risk assessment and understanding the drivers for business performance [7, 14]. IT Governance ensures that IT is properly aligned with business processes and is properly organized and controlled. IT Governance provides the structure that links IT processes (ITP/ITS) and IT resources to enterprise strategies and objectives. IT Governance integrates and institutionalizes best practices of planning, organizing, acquiring, implementing, delivering, supporting, and monitoring IT performance, to ensure that the enterprise’s information and related technology support its business objectives. The IT Governance Institute, the IT Governance is a board or senior management responsibility in relation to IT to ensure that:

- IT is aligned with the business strategy, or in other words, IT delivers the functionality and services in line with the organization’s needs, so the organization can do what it wants to do.
- Further, IT and new technologies enable the organization to do new things that were never possible before.
- These IT-related services and functionality are delivered at the maximum economical value or in the most efficient manner. In other words, resources are used responsibly.
- All risks related to IT are identified and managed.

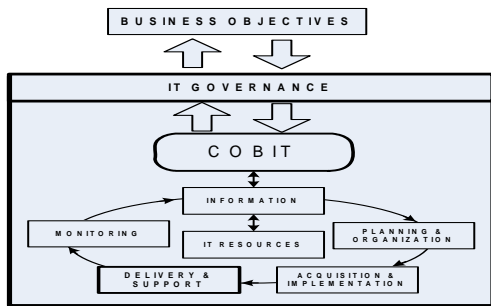


Figure # 2: The COBIT Framework

On the other hand there is the IT Infrastructure Library (ITIL) is ‘to establish best practices and a standard of IT service quality that customers should demand and providers should seek to supply. ITIL was originally developed by the British government

through their Central Computer & Telecommunications Agency (CCTA). Nowadays, ITIL is being maintained by the Netherlands IT Examinations Institute (EXIN) [2, 3, 8, 7].

The ITIL has come increasing sophistication around the delivery of IT services within the enterprise. IT Governance actively supports IT services delivery as a critical component of the technology foundation for business. The value derived from IT today is based on the assurance that business performance improves continuously, is measurable, and can be delivered at acceptable levels.

	ITIL	COBIT
SERVICE DELIVERY	<ul style="list-style-type: none"> * Service Level management. * Financial Management for IT Services. * Capacity Management. * IT Service Continuity Management. * Availability Management 	<ul style="list-style-type: none"> * DS1 Define and manage service levels. * DS2 Manage third-party services. * DS3 Manage performance and capacity. * DS4 Ensure continuous service. * DS5 Ensure systems security
SERVICE SUPPORT	<ul style="list-style-type: none"> * Configuration Management * Change Management * Release Management * Incident Management * Problem Management. * Service Desk 	<ul style="list-style-type: none"> * DS6 Identify and allocate costs. * DS7 Educate and train users. * DS8 Assist and advise customers * DS9 Manage the configuration. * DS10 Manage problems and incidents. * DS11 Manage data. * DS12 Manage facilities. * DS13 Manage operations

Table # 1: IT processes defined by ITIL and COBIT (Service Delivery and Service Support)

The Service Delivery Management solution identifies business and technology components, their relationships, and the impact they have on each other while also capturing the KPIs that tie directly to business processes KPIs and goals. This kind of tool enables companies to answer key questions concerning service availability, compatibility and impact on specific business processes. These questions are part of the IT services lifecycle that includes identifying and creating operational resources to support the services and then monitoring and modifying them once deployed [3].

Van Grembergen's definition also indicates that IT management must be involved in the IT governance processes. However, there is a clear difference between IT governance and IT management. IT management is focused on the effective supply of IT services and products and the management of IT operations. IT governance in turn is much broader and concentrates on performing and transforming IT to meet present and future demands of the business and its customers [15, 20, 21].

According to Luftman, Governance is the degree to which the authority for making IT decisions is defined and shared among management, and the processes managers in both IT and business organizations apply in setting IT priorities and the allocation of IT resources [5, 10].

An important element of IT governance is the alignment of IT with the business. J. Henderson and N. Venkatraman developed their strategic alignment model (SAM) to conceptualize and direct the area of strategic management of IT. Although the SAM model clearly recognizes the need for continual alignment, it does not provide a practical framework to implement this.

Companies design governance mechanisms to make and then implement each of these decisions. There are many types of governance mechanisms and techniques. For clarity, they are grouped into three categories based on what they accomplish — mechanisms that facilitate decision-making, processes that ensure alignment between technology and business goals, and methods for communicating governance principles and decisions. (J. Ross, Peter Weill, 2004).

Another approach for the practical implementation of strategic alignment is the balanced scorecard (BSC). Robert Kaplan and David Norton introduced the BSC at the enterprise level [1, 6, 17, 19]. This concept has been applied by Grembergen, 2000 to the IT function and its processes. Recognizing that IT is an internal service provider, the proposed perspectives of the balanced scorecard should be changed accordingly, with corporate contribution, user orientation, operational excellence and future orientation as perspectives. By using a cascade or waterfall of balanced scorecards, a method for business and IT fusion is provided to senior management. To achieve this, an IT development scorecard and an IT operational scorecard are defined as enablers for the strategic IT balanced scorecard that in turn is the enabler of a business balanced scorecard (Grembergen, 2003).

Kaplan and Norton first presented the concept of a Balanced Scorecard system for measuring firm performance from a holistic perspective. The Balanced Scorecard outlines both a firm's current operating performance and future performance drivers by tracking and measuring four dimensions of business: financial, customer, internal processes, and innovation and learning.

3.3. Business and IT Balanced Scorecard

The Balanced Scorecard has only recently been adopted as a theoretical model for management information system research. Initially, the focus was on building an “IT Balanced Scorecard,” using the four perspectives of the Balanced Scorecard for a holistic approach to managing IT projects or IT departments. After that, it was proposed the standard IT BSC links with business through the business contribution perspective. The relationship between IT and business can be more explicitly expressed through a cascade of balanced scorecards the relationship between IT scorecards and the business scorecard is illustrated. The IT Development BSC and the IT Operational BSC both are enablers of the IT Strategic BSC that in turn is the enabler of the Business BSC. This cascade of scorecards becomes a linked set of measures that will be instrumental in aligning IT and business strategy and that will help to determine how business value is created through IT (Grembergen, 2000).

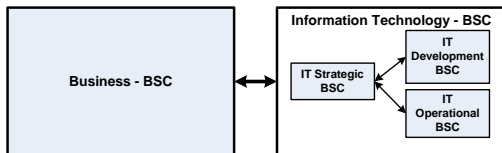


Figure # 3: Business BSC & IT – BSC Correlation

The figure shows a standard IT balanced scorecard in correlation with business BSC. The *User Orientation* perspective represents the user evaluation of IT. The *Operational Excellence* perspective represents the IT processes employed to develop and deliver the applications. The *Future Orientation* perspective represents the human and technology resources needed by IT to deliver its services. The *Business Contribution* perspective captures the business value of the IT investments.

The Balanced Scorecard’s impact on the communication dimension of alignment is more intangible, but still strong. It plays a dual role in enhancing communication: providing a platform, or common language, for communication, and promoting the understanding of the business by the IT department. “It provides a focal point and common language around the key value drivers of the organization” (CIO). In addition, the Balanced Scorecard helps IT understands other business areas—thus serving the internal customers—better. (R. Saull, 2000) [22].

To take advantage of the real strength of the Balanced Scorecard—integrating and managing business processes (functions) and IT processes (IT services), based on business and IT governance strategy—this research focuses on using the business BSC and IT-BSC correlation to identify and measure IT and business Processes. In a similar way for instance, Van Der Zee and De Jong explored the ways of integrating business and IT management by examining two cases of building a corporate Balanced Scorecard [23]. They argued that the Balanced Scorecard offers two unique benefits to the alignment process in contrast to traditional methods. First, business and IT management can use the same “performance measurement” language, enabling discussions on what IT can do to support business performance. Second, IT can be managed using an integrated planning and evaluation cycle as other business processes.

When IT develops its own scorecard, the measures have to be based on the business scorecard, which, in turn, reflects the corporate vision and strategies for governance. And by linking back to the corporate strategies in relation to governance, IT processes or services can be aligned with business processes. The development of an effective IT BSC and its suitable correlation with the business BSC will be an IT governance best practice and well worth the effort expended by CEOs and CIOs. The correlation analysis will become an important means for ensuring IT process and service alignment with the business process in the governance domain.

4. HOW TO IDENTIFY AND MEASURE THE LEVEL OF ALIGNMENT BETWEEN IT AND BUSINESS GOVERNANCE

To reach effective IT governance, two-way communication and a good relationship between the business and IT processes (IT services) are needed. The correlation of the business B-BSC and the IT-BSC in all of the defined perspectives and considering the CSF, KGI and KPI is a proposed supportive mechanism for identifying and measuring the level of alignment between IT and business governance [10, 12].

The strategic alignment models even with the articulated four perspectives, remains a high-level conceptual map, which by itself does not reflect the dynamic aspects of achieving strategic alignment over time. Subsequently, researchers have continued the pursuit of operationalizing the model in a variety of ways in different organizational contexts.

‘The methodology of the Balanced Scorecard is a measurement and management system that is very suitable for supporting the IT governance process and the IT/business alignment process. It is believed that in the near future many organizations will use a cascade of a business balanced scorecard and IT balanced scorecards as a way of assuring IT governance and achieving the integration of business and IT decisions” [24].

This paper proposes a conceptual model and illustrative example of the correlation scenarios, using process simulation of how to identify and measure the level of alignment between IT and Business Governance by means of correlating IT and Business Processes Key Performance Indicators (KPI) and by assessing the possible and cost-effective scenarios, applying process simulation technique. It is recommended to perform the analysis as a bottom up approach but it is also possible to analyze scenarios in a top down way.

As a starting point in the difficult way of identifying and measuring level of alignment, this research proposes as the first step to evaluate how well ITP/ITS and BP are currently related and performing (set an “as-is” model), be able to identify where and how improvements can be made (decide or choose the “to-be” model), and to select the most cost-effective scenarios among the possible ones for the specific study case. This applies to both the IT and business governance and the all IT services that need to be managed [2, 3, 7, 8].

This evaluation or implementation process is too complex and dynamic to be understood and analyzed only by static models which are adequate for answering “what” questions but not sufficient for answering “how”, “when”, “where”, and “what if” questions. In these cases it is proposed in this article to use the process simulation a scenario-based technique, which allows representation of processes, people, and technology in form of dynamic models and consists mainly of four steps: building model, running a model, analyzing the performance measures, and evaluating possible scenarios for the specific studied case. It mimics the operations of the enterprise, and can accurately account for the realities of ITP and business processes such as variability, uncertainty and interdependencies of resources (E. Silva, 2003) [26].

As a second step to identify and measure the level of alignment between IT and Business Governance it is proposed in this article, the correlation analysis between the Business Balanced Scorecard and the IT Balanced Scorecard. Moreover, it is presented a theoretical example of the process simulation to correlate a set of Key Performance Indicators of IT Processes (IT Services) with a set of Key Performance Indicators of Business Processes. These interactions and correlations between KPIs over time can result in a large number of scenarios, which at the same time will assure an operational and solid base for a bottom up analysis of IT and Business Governance level of alignment.

It is very important to consider during the analysis process, the corresponding CSF and KGI for each of the relevant KPI [7, 14].

4.1. An Illustrative Example of the Correlation Scenarios, Using the Process Simulation

The illustrative example of the correlation scenarios it is presented the figure # 5. The selected KPI for the specific ITP and BP in this example are different kind of “time”, which are going to be used for generating a set of correlation scenarios. Then, these scenarios will be evaluated using the process simulation technique in order to decide what the most cost-effective one for every specific situation is.

In the figures # 5, it is illustrated the correlation scenarios of a specific ITP: manage problems and incidents and specific BP: sale process. The KPI for the ITP are: time out of service and the time in good condition. The KPI for the BP are: inventory verification time and invoice elaboration time.

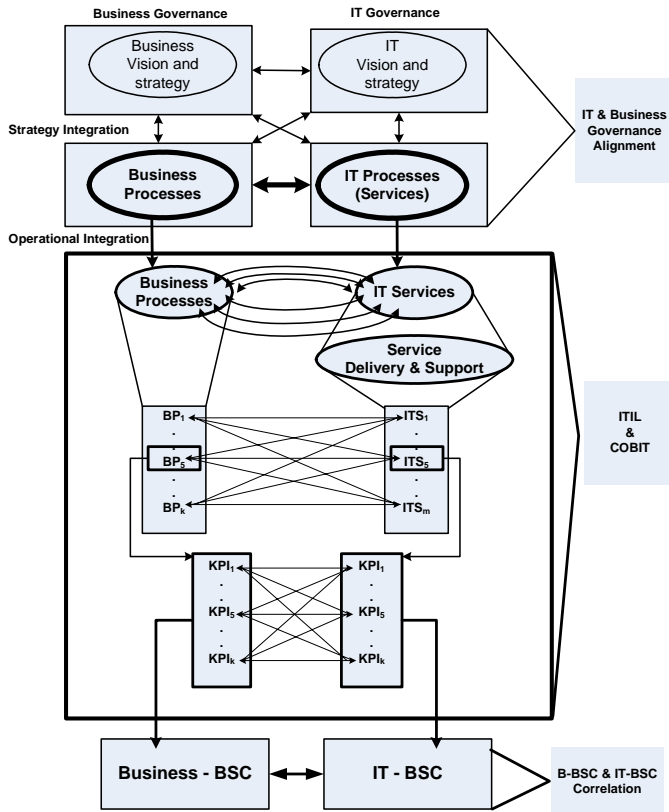


Figure # 4: IT Services & Business Processes Alignment

Scenario A: The variation of the time out of services can have a negative or positive correlation or impact in the inventory verification time and in the invoice elaboration time.

Scenario B: The variation in time out of service and the time of service can produce variation in the inventory verification time and invoice elaboration time.

Scenario C: The variation in different times of identification for specific IT process, can impact the percentage of use of IT resources and the costs for multiple activities of a business process.

Scenario D: The variation in different times identified for the ITP could be analyzed in relation to the impact for different activities of the BP. The positive or negative correlation in time could determine an increment or decrement of the effectiveness or efficiency of a BP.

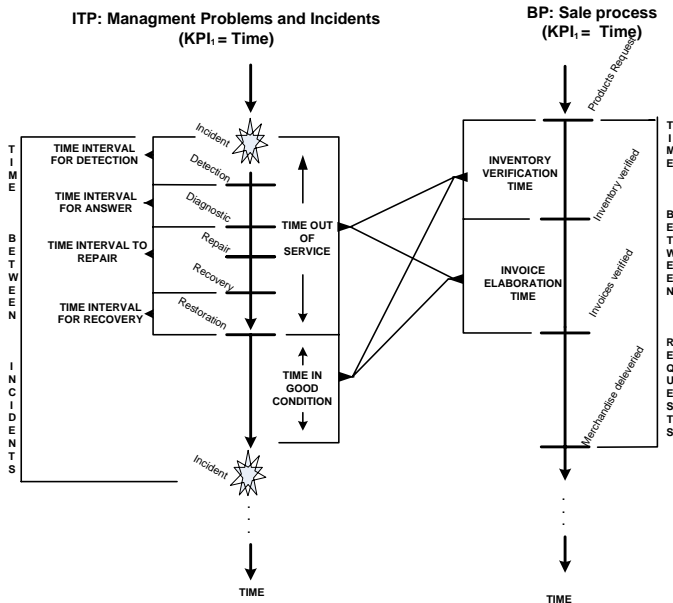


Figure # 5: An Illustrative Example of Correlation between ITP and BP with their KPIs

5. CONCLUSIONS

This paper presents preliminary research conclusions on how to identify and measure the level of alignment between IT and Business Governance by means of correlating IT and Business Processes KPIs and the way of selecting the most cost-effective scenario according to the business priorities or needs. A tradeoff should be made on the basis of scenarios as opposed to intuition, resulting in more informed business decisions.

The B-BSC in correlation with the IT-BSC contributed to the alignment of IT and business strategies by acting as a platform for the communication between IT and business governance, as well as by strengthening the connections between ITP and BP together with their CSFs, KGIs and KPIs.

The correlation analysis could be done in different level of details in dependence of business requirements or maturity level of alignment between ITP and BP.

The key performance indicators of each ITP and BP must be guided by a standard framework like COBIT or ITIL standards. These standards define a set of key performance indicator for a particular IT process, its associated IT resources, the critical success factors and the primary and secondary information criteria.

In order to identify and manage the correlation possible scenarios it is important to use a scenario-based technique like process simulation. It will allows the researcher to select the most cost-effective.

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