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Business-IS Alignment: Assessment Process to Align IT Projects With Business Strategy

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ABSTRACT

The value of information technology has been proved to be related to alignment between business and information systems (IS). However the constant report of failed IT projects suggests a misalignment between business and IS at the implementation stage. The majority of alignment assessment approaches focuses on the strategic level and overlooks the connections with IT projects. Although research has given little attention to this problem, it has been recognized that managers must focus on IT project planning as a mediator to improve business-IS alignment. This research proposes an assessment process across different organizational levels (strategic, tactical and operational). In doing so, the strategic alignment maturity (SAM) model is used and adapted to include the assessment of IT projects alignment maturity. IT projects are considered the unit of analysis that represents the operational implementation of strategies. The assessment process proposed has been tested in an SME in order to understand its practicability and limitations. The results show that is feasible to use the SAM model to assess the IT projects alignment maturity. Moreover, analyzing alignment across different organizational levels (strategic, tactic and operational) provides a more complete picture of the organization's alignment maturity that could facilitate the design of specific actions to improve the project alignment with business objectives.

Keywords

Strategic information system planning, strategic alignment, project management, alignment assessment, IT projects.

INTRODUCTION

The value of information technology has been proved to be related to alignment. Tallon and Kraemer (2003) found that organizations with strategic goals for IT showed higher levels of strategic alignment and as a consequence the perception of IT business value was higher. Moreover, strategic alignment research suggests that alignment has a positive effect on organizational performance (Teo and King, 1996; Reich and Benbasat, 2000; Chan, Sabherwal and Thatcher, 2006). However, continuing failure of IT projects is constantly reported. For example, Andrew Taylor (2000) found a low percentage of successful IT projects (12.7%), which suggested a lack of alignment between business strategies and IT projects.

Strategic alignment research has extensively discussed the coordination between business and IS strategies (Henderson and Venkatraman, 1993; Reich and Benbasat, 2000; Kearns and Sabherwal, 2007) and how this two-way commitment enables managers in both IT and business domains to prioritize IT projects that will support the business strategy (Luftman and Brier, 1999). Strategic alignment is embedded in the strategic management process which suggests a closer relationship between IT

and business managers. However, this commitment has been difficult to achieve at higher organizational levels of management (Coughlan, Lycett and Macredie, 2005) and consequently difficult to transfer to the different organizational levels. When an IT project is conceived at strategic level, it may be aligned with company goals; however, as it progresses down the organizational level to be implemented, the original objectives for which it was conceived may be lost. Implementers are more concerned with technical issues and often business goals are not communicated to them (Lederer and Salmela, 1996). Although research has given little attention to this problem, Kearns and Sabherwal (2007) recognize that managers must focus on IT project planning as a mediator to improve business-IS alignment.

The objective of this research is to assess the IT project alignment to analyze the operational level maturity that will offer the organizations with a better understanding of consistency of alignment maturity across different organizational levels (strategic, tactical and operational). The proposed assessment process was developed based on business-IT alignment and project management theory in order to integrate alignment research and provide practical insights. The structure of this paper consists of, first, a *review of the alignment and IT project management literature* in order to establish a theoretical basis. Second, the *research strategy* section summarizes how the investigation was conducted. Third, the *framework construction* is explained along with the *case study* testing the framework. Finally, *conclusions and further research* are presented.

LITERATURE REVIEW

Strategic alignment and IT project management

Strategic alignment research suggests that alignment has a positive effect on organizational performance (Teo and King, 1996; Reich and Benbasat, 2000; Chan, Sabherwal and Thatcher, 2006). However, most alignment research has focused on strategic integration in order to *align IS strategy* with *business strategy*. Furthermore, most of the alignment assessment research to date has measured alignment at strategic level, leaving a gap between the strategy and the operational levels (Lycett, Rassau and Danson, 2004; Srivannaboon and Milosevic, 2006; Gutierrez and Serrano, 2008). For this study we compare the practical approaches using the taxonomy available in Gutierrez, Orozco, Papazafeiropoulou and Serrano (2008). The comparison of alignment assessment led to the selection of the strategic alignment maturity (SAM) model (Luftman, 2000) for three reasons:

1. SAM model reflects the main factors that other researchers have found relevant to achieve alignment (Reich and Benbasat, 2000; Chan et al., 2006 and Hussin et al., 2002).

2. SAM model has an instrument that has recently been validated in an extensive study as described in (Sledgianowski, Luftman and Reilly, 2006)

3. The instrument allows the evaluation of practical capabilities that are valid for the different organizational levels.

Luftman (2000) argues that achieving alignment is an evolutionary process, which requires strong support from senior management, good working relationships, strong leadership, appropriate prioritization, trust, and effective communication, as well as a thorough understanding of the business and technical environments. Thus, he proposes a model that allows organizations to understand its position in terms of maturity levels of alignment as shown in Figure 1.

This model provides a practical approach to measure organization's capabilities and includes a validated instrument (Sledgianowski et al., 2006) to assess each factor affecting alignment (*communication, value metrics, governance, partnership, architecture & scope*, and *skills)*. Table 1 shows a description of each factor and corresponding attributes.
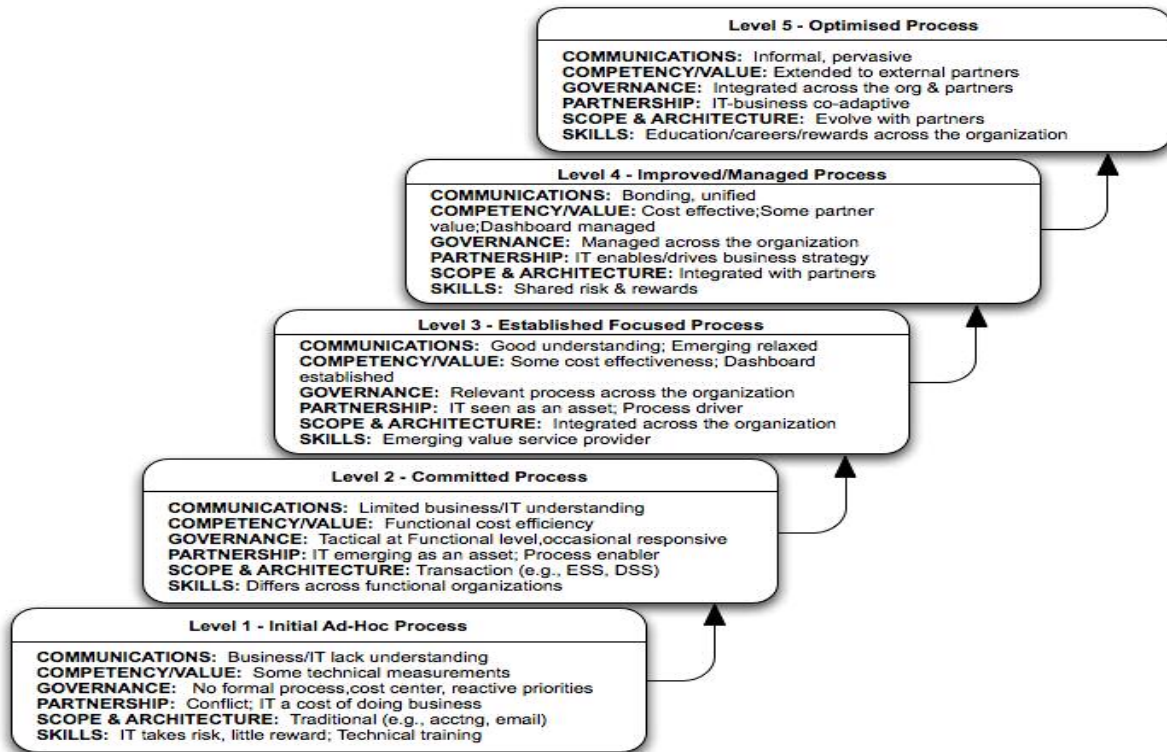
Figure 1. Strategic Alignment Maturity Summary from Luftman (2000)

Factors	Attributes
COMMUNICATIONS: includes exchange of ideas, knowledge and information among the IT and business managers, enabling both to have a clear understanding of the organization's strategies, business and IT environments.	• Understanding of business by IT • Understanding of IT by business • Inter/Intra-organizational learning • Protocol rigidity • Knowledge sharing • Liaison(s) effectiveness
VALUE METRICS: includes assessment of IT investment by the use of metrics to demonstrate the contribution of IT to the business.	• IT metrics • Business metrics • Balanced metrics • Service level agreements • Benchmarking • Formal assessment reviews • Continuous improvement
IT GOVERNANCE: is the degree to which the authority for making IT decisions is defined and shared among management. It includes setting IT priorities and allocating IT resources.	• Business strategic planning • IT strategic planning • Reporting/organization structure • Budgetary control • IT investment management • Steering committee(s) • Prioritization process
PARTNERSHIP: is the relationship among the business and IT managers. It includes IT involvement in defining business strategies, the	• Business perception of IT value • Role of IT in strategic business planning

Factors	Attributes
degree of trust between IT-business managers and how each perceives the contribution of the other.	• Shared goals, risks, rewards/penalties • IT program management • Relationship/trust style • Business sponsor/champion
SCOPE & ARCHITECTURE: includes an organization's infrastructure, change readiness, flexibility in structure and the management of emerging innovations.	• Traditional, enables/driver, external • Standards articulation • Architectural integration • Architectural transparency • Flexibility • Managing emerging technology
SKILLS: are human resource considerations for training, performance feedback, encouraging innovation and providing career opportunities. It also includes an organization's readiness for IT change, capability for learning and ability to leverage new ideas.	• Innovation, entrepreneurship • Locus of power • Management style • Change readiness • Career crossover • Education, cross-training • Social, political, trusting environment

Table 1. Factors and attributes affecting strategic alignment maturity (Adapted from Luftman, 2000)

The alignment maturity instrument has been tested on hundreds of SMEs and large organizations (Luftman and Kempaiah, 2007) throughout several years. A first set of data (2000-2003) resulted on level of average maturity 2 (2.99) while a second set of data (2004-2007) demonstrated a rise of the level of maturity, obtaining a level of average maturity 3 (3.18). The same study presents an interesting trend of alignment across different industries that can be used for organizations to benchmark their situation. This paper extends the use of the alignment maturity model to provide organizations with a mechanism to analyze the alignment maturity across different organizational levels. The current assessment process includes mainly participants from the strategic and tactical levels (CEOs, CFOs, VPs, CIOs, CTOs, other business and IT executives) whose perspectives may differ from what is happening at the operational level.

While organizational projects represent the implementation of business strategy, IT projects represent the implementation of IS strategy. Planning integration is found to improve alignment as the IS planning systems evolved in terms of developing the business and IS plan simultaneously and interactively (Teo and King, 1996). However, the low percentage of successful IT projects (12.7%), as reported by Andrew Taylor (2000), suggests that integration should be aimed not only at strategic level but also monitored during the strategy implementation stage. It is possible that an IT project conceived at strategic level may be aligned with company goals; however, as it progresses down the organizational level to be implemented, the original objectives for which it was conceived may be lost or change. Research in the IT project management discipline also raises the need to reduce the gap between project delivery and organizational strategy (Lycett, et al., 2004). It is recognized that although IT projects share many characteristics with organizational projects, IT projects are significantly impacted by the rapid change of technology and the organizational changes that its use produces (Johnstone et al, 2006). In addition, Srivannaboon (2006) suggests that alignment should be monitored during any project execution in order to provide feedback to management and allow for business strategy adaptations. Kearns and Sabherwal (2007) draw attention to the relevance of incorporating IT project aspects into strategic alignment. Therefore, in this research, IT projects are considered to be the implementation of business strategy and are incorporated as a unit of analysis to assess their alignment. The following section describes the research strategy followed to develop the framework and how it was tested on an SME.

RESEARCH STRATEGY

The objective of this research is to assess the IT project alignment, in order to analyze the operational level maturity that will offer the organizations with a better understanding of consistency of alignment maturity across different organizational levels (strategic, tactical and operational). The alignment maturity model (Luftman, 2000) has been used extensively to assess the strategic and tactical levels, and this research extends its use to assess the IT projects alignment that would reflect what is happening with the implementation at operational level. Therefore, a theoretical framework for the assessment process is

developed from previous knowledge as an initial guide for the design and data collection, as suggested by Walsham (1995). A case study approach was used in order to be able to analyze the framework in an organizational setting.

Theoretical framework to assess alignment at different organizational levels

This paper proposes a framework to assess the alignment at different organizational levels. The framework addresses the main limitations and findings from the literature review:

1) Business-IS alignment and assessment approaches are mainly focused on the strategic level
2) There is a lack of connection between strategies and IT projects implementation

The framework proposed includes three stages as demonstrated in Figure 2. Firstly, at the top left, the influence of business-IS alignment is shown. Whether organizations have a formal or informal strategic planning process, the business direction of the organization needs to be documented to understand the business context that includes industry, size, organization age, generic strategy the organization follows, organizational structure, decision processes, culture, planning integration type and planning time horizon. Additionally, the most important business and IT objectives are documented. This is represented as *business-IS alignment profile*. Secondly, at the top right, is the corporate assessment that uses an instrument (Sledgianowski et al., 2006) to identify organization's maturity at strategic and tactic levels. The assessment instrument has been extensively tested at strategic and tactical level (CEOs, CFOs, VPs, CIOs, CTOs, other business and IT executives) and therefore offers a reliable model. Thirdly, below the organizational profile and the corporate assessment, is the IT project alignment assessment. Using the assessment instrument (Sledgianowski et al., 2006) at operational level was not very significant as two problems were found. The first problem was that operational staff easily misunderstood the questions due to the use of high level concepts. The second problem was that participants answer what they consider managers do instead of the practices they observe at operational level. Consequently the IT projects were used as a unit of analysis for the operational level, considering that strategic IT projects are the implementation of business and IT strategies and an important mediator to improve alignment as recognized in the literature. IT projects as unit of analysis result in a better representation of alignment at operational level. The same instrument with minor adaptations was used to assess the IT project's alignment. Having the results for each organizational level, an analysis of alignment consistency or inconsistency would provide feedback to managers to impact the overall alignment. Knowing the level of maturity of each project could also help the organization to identify specific actions to improve the level of alignment maturity for the specific project. The assessment process can help organizations to incrementally increase their level of alignment as they enhance knowledge sharing between business-IS areas across the different organizational levels.
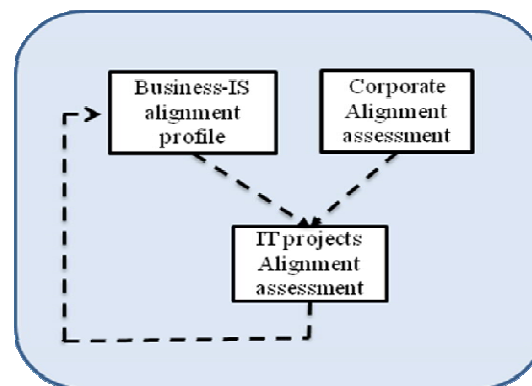

Figure 2. Theoretical framework to assess alignment at different organizational levels

Case study: Corporate and IT project alignment assessment

Two methods were used to gather data from the selected company. Firstly, the day-to-day organizational processes and tasks were observed, and, secondly, unstructured interviews and discussions were conducted with key employees in managerial positions. This stage allowed the researchers to obtain general information about the organization, such as size, organizational structure, decision processes, culture, etc. In the interviews, the assessment objectives and scope were introduced to the managers. All this was document in the organizational profile. Then, a corporate assessment was conducted

that included managers from strategic and tactical levels. After the corporate assessment, an ongoing IT project was selected to assess its alignment. Even though the proposed model suggests that all IT projects of the organization should be assessed, for this case study it was only possible to assess one project. However, the selected project represents the major IT project the organization has and is considered highly related to the business strategy. From this assessment, an analysis of consistency or inconsistency was carried out for each factor at strategic, tactical and operational level.

Organization's background

When choosing an organization for the case study, it was essential that the company had high reliance on IT and, more importantly, a focus on information. This would allow the study of the organizational structure in an environment where IT was essential and information was an important asset of the company. Following is a brief description of the company where the case study took place.

The company is an SME based in the UK that specializes in Facility Services. Although it is a rather new (7 years old) and small company, it handles large accounts and its expansion over the previous year has been exponential. Various partners around the world provide the services that are delivered. Thus, the company has a global clientele ranging in value from thousands to millions of US dollars. The major function of the company is as a consultancy, since it serves as a central hub for the various partners and clients. The clients initially communicate with the company, which consequently provides all the necessary information needed and assigns the appropriate partners who will provide the actual service. Due to the nature of their service, information is the major asset of the company and IT is essential since it is used for communication, financial control and preparation of the service to be provided. Furthermore, IT is used for knowledge sharing and to provide a pool for information gathering. The company uses a matrix organizational structure, where all employees, except the directors, are engaged in cross-function projects. For example, a person from IT might also be engaged in a sales function, or even an accounting function. Decision-making is highly centralized, with decisions made only by top management and approved by the executive team. Finally, the executive team also makes the decisions relating to IT.

Results and discussion

An important observation, ensuing from the first stage of the assessment, was that there was no IT representative in the executive team, and the executives did not have adequate IT knowledge. This had resulted in a lot of projects being started and later abandoned. For example, in 2005 a financial database was initiated in which all the partners were supposed to input their monthly financial information. The project was initiated by the executive team, but due to lack of knowledge and expertise, it was later put on hold, and the data became outdated and incomplete. Furthermore, the person that was employed to be in charge of IT had very little decision-making authority and had to go through the different levels to get a suggestion approved. The company faced many problems due, in part, to the fact that IT did not take part in top-level management or the executive team. Although information is the major asset of the company, no initiatives had been taken to enable knowledge sharing or management. Moreover, the information systems were outdated and the data were unreliable. The structure of the company and the fact that the people involved in IT were not dedicated to this function greatly lowered the importance of IT decisions and projects. An incident that was observed and was enlightening in this study, was the starting of a project regarding knowledge sharing. The person responsible for IT had suggested to the Executive Team the purchase of a knowledge sharing solution to enable the sharing of information from various projects. The project was approved through the defined decision-making structure but on the day that the project was meant to start the decision was changed by one of the Executive Team members. A new solution was proposed, creating frustration and delays in the project. Finally, it was generally observed that due to the structure of the company and to the fact that IT was not part of top-level management, and because skills were not utilized effectively, IT projects were usually late or abandoned, suggestions that could enable alignment was neglected, and IT could not assist in the development of strategies.

Factors	Company A			
	Strategic	**Tactical**	**Operational (IT project selected)**	**Overall Alignment Maturity per Factor**

|				
Communications	2.13	2.13	2.07	**2.11**
Value metrics	1.70	2.10	1.33	**1.71**
IT governance	2.40	2.15	1.81	**2.12**
Partnership	3.13	2.57	2.46	**2.72**
Scope and architecture	1.83	2.08	1.29	**1.74**
Skills	2.40	2.86	2.01	**2.42**
Overall Alignment Maturity per Level	**2.27**	**2.32**	**1.83**	**2.14**

Table 2. Alignment maturity per factor and organizational level

Employees from strategic, tactical and operational organizational levels took part in assessing the alignment maturity of the organization. In doing so, employees from strategic and tactical positions assessed the alignment maturity of the whole organization whereas employees from operational positions assessed the alignment maturity based on an IT project. The results of the alignment maturity assessment are presented in Table 2, and reflect an overall alignment maturity of *2.14.* This result differs from Luftman and Kempaiah (2007) who reported that organizations in the service sector behave with a maturity average of 3.2.
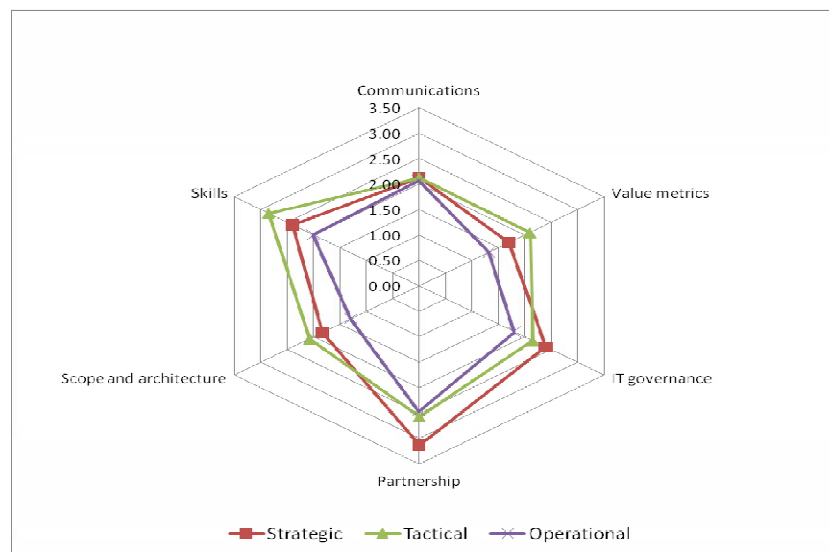
Graph 1. Alignment maturity per organizational level and factor

As shown in Graph 2 Company A behaves quite similar to organizations in level 2. However, two main differences were identified in the scope/architecture and skills factors. Organizations with levels 2 or 3 have given less attention to scope/architecture factor; conversely organizations in level 4 have considered IT infrastructure as a resource to enable faster responses to the changing marketplace (Luftman and Kempaiah, 2007). Due to the high level requirements of collaboration between Company A and external partners, it is critical to develop an infrastructure that enables the same level of collaboration. Perhaps, leveraging IT infrastructure would advantage the level of entrepreneurship in the organization. Results also confirm that the three organizational levels perceived different maturity in most of the assessed factors, but most significant, there is a visible tendency in which top management levels ranked the factors higher than lower levels of management. This also reflects the gap that Lycett et al. (2004) state between organizational strategy and project delivery. In practice, lower maturity is perceived by lower levels of management. Not only projects need to be monitored to ensure alignment but also different organizational levels need to be taken into account in order to ensure an improved estimation of alignment.
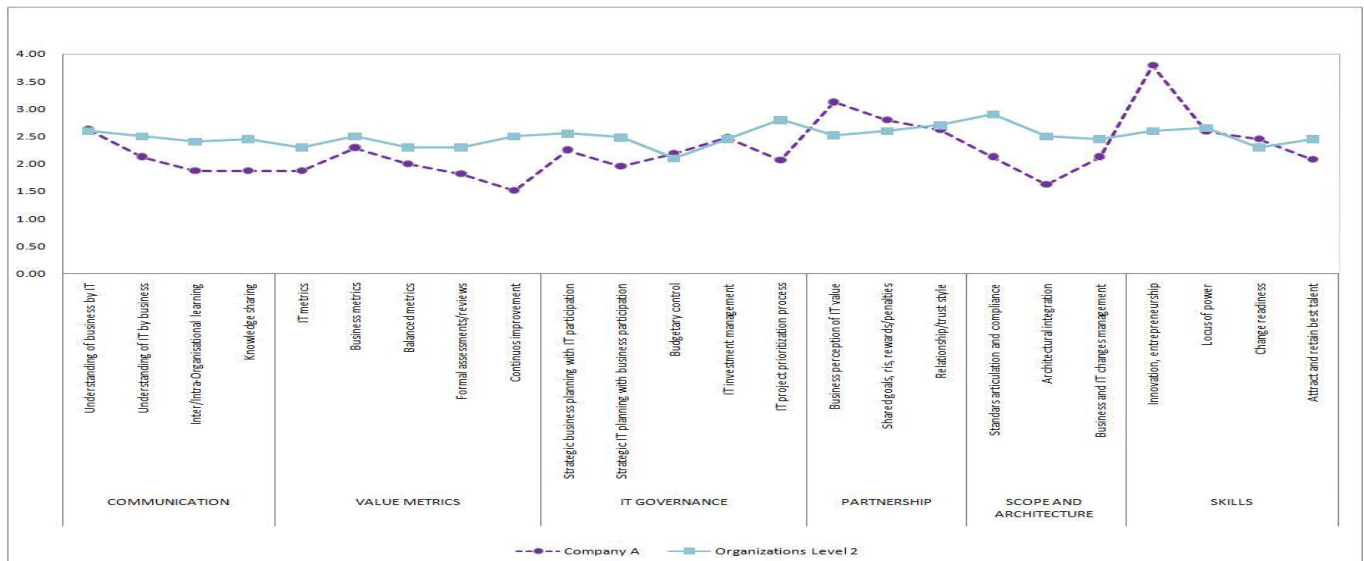
Graph 2. Comparison of alignment maturity: Company A vs. Organizations level 2 of maturity (Luftman and Kempaiha, 2007)

CONCLUSION AND FURTHER RESEARCH

Research into business-IS alignment continues to be a relevant concern of IS research. The proposed assessment process was developed based on business-IT alignment and project management theory in order to integrate alignment research and to provide practical insights. The framework proposed and the discussion presented contributes to the alignment research to:

1. Integrate findings from previous alignment research
2. Extending the use of the SAM model to assess the IT projects alignment
3. Increase the understanding of the factors affecting alignment as a result of the discussion
4. Provide a mechanism that could reduce the gap between business strategy and IT implementation

Additionally, this paper contributes practical insights by:

1. Providing organizations with a mechanism to assess IT project maturity alignment to compare it with the corporate alignment
2. Enabling organizations to have an operational measure of alignment through the assessment of the entire strategic IT projects
3. Offering an example of benchmarking analysis that could help the organizations to identify relevant areas to be attended in order to improve alignment

Although it is recognized that the results of a single cases study cannot be generalized, nevertheless, the case study contributes to reducing the gap between theory and practice as well as to identify new research areas. For example, further research could be undertaken to improve the IT project assessment on how to carry out the process to be enough significant to represent the operational level. Another interesting line of research is to investigate how the detail analysis across different organizational levels could help organizations to design specific actions to increase their level of alignment.

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