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# **ASSESSING BUSINESS-IT ALIGNMENT MATURITY ON MULTIPLE ORGANIZATIONAL LEVELS**

*Research paper*

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## **Abstract**

*Close collaboration, and harmony between IT and business is crucial to succeed with efficient and effective digitalization. This is encapsulated in the concept of Business-IT alignment (BITA). Much has been written in the research literature regarding what BITA entails, how to assess BITA, and how to improve BITA. However, none of these frameworks or theories provide a practical framework that treats BITA as a multi-leveled, co-evolving process between business and IT. The purpose of this paper is thus to provide a Multi-Level BITA framework, for assessing BITA on multiple-organizational levels. The framework is constructed based on an analysis of the existing BITA frameworks and is applied to an empirical case, to evaluate its applicability to practice. The analysis shows how the BITA maturity in the case company varies and decreases along the organizational levels and how it is assessed higher by IT than by business. An in-depth reasoning behind the BITA maturity scores are provided by in-depth interviews. The Multi-Level BITA framework thus demonstrates its applicability in assessing and visualizing BITA maturity on multiple organizational levels and identifying the underlying causes for the assessment.*

**Keywords:** Business-IT Alignment, Multiple Organizational Levels, Business-IT Maturity, Business-IT assessment.

## 1 Introduction

Information Technology (IT) plays an increasingly important role in our lives. The signification of IT, has, as a result, changed how individuals, think and act, and how organizations operate; for organizations to succeed they are required to constantly innovate how they utilize IT (Schwab, 2017).

To increase digitization in an organization efficiently and effectively, the collaboration between the IT function and the business must be strong and competent (Colbert et al. 2016; Henderson and Venkatraman, 1993). Determining and improving the collaboration between IT and business is encapsulated in the concept of *Business-IT alignment* (henceforth: BITA). BITA has proven to be a constant challenge for many organizations and conclusively been perceived as a top IT issue for many years (Henderson and Venkatraman, 1993; Luftman, 2003; Heltzel, 2019).

The concept of BITA revolves around the beliefs related to how IT and business can *and should* be in an agreement on the strategies, goals, and needs of an organization (Henderson and Venkatraman, 1993; Luftman, 2000). In addition, BITA can also be perceived as a concept that evolves and matures through different degrees. This is coined BITA maturity levels by Luftman (2003).

The notion of BITA dates back to the 1970s, however, as the role of IT in our society has evolved, so has the notion of BITA. Throughout the years, a vast amount of literature has been published on what BITA entails. Some of the recognized publications within the field are, among others: Henderson and Venkatraman (1993), Luftman (2003), Benbya and McKelvey (2006), and Fonstad and Robertson (2006). These papers have advocated the importance of achieving BITA - however with very different views on what BITA entails, and how to assess, achieve, and maintain it.

To achieve a high BITA maturity entails, among others, for the business to recognize the value of IT and include IT capabilities when defining the vision and the strategies. Likewise, for IT, a high BITA maturity entails understanding the business, being able to communicate in business terms, and apply technical understanding to identify business opportunities (Luftman et al., 1999). For the collaboration between business and IT, a high BITA maturity is enabled by establishing binding IT-business partnership, relationship and trust, and effective marketing of the value of IT (Luftman et al. 1999). Achieving a high BITA maturity is an accomplishment for any organization as it contributes positively to the effectiveness of the organization (Tarafdar and Qrunfleh, 2009). Equally, the competitiveness of organizations with a low BITA maturity and a low focus on BITA can be seriously challenged (Avison et al., 2004; Benbya and McKelvey, 2006).

A vast amount of literature only considers BITA on a strategic level, with the notion that strategies are formulated at this level and naturally carried out throughout the organization (Avison et al., 2004; Chan et al., 1997; Henderson and Venkatraman, 1993). Instead, Benbya and McKelvey (2006) argue that every person in an organization, regardless of organizational placement influence BITA. Benbya and McKelvey (2006) add to their findings that the mindset of considering BITA as a continuous process on multiple organizational levels seems to become more crucial in complex environments as a response to the continuously changing demands of the environment. Therefore, to accommodate these challenges, one must not only be able to achieve a high level of BITA maturity on multiple organizational levels but also maintain it by continuously assessing BITA and make the necessary corrections. The BITA literature may be considered rich and satiated, however, no paper has provided a practical framework that consolidates and simplifies the notions of approaching BITA as a continuous process across organizational levels.

We are aware that the current literature is occupied with the notion of co-evolution and seems to have moved past BITA assessment. The topic is however still very relevant for practice, as organizations continue to struggle with this, and IT keeps becoming increasingly important for gaining competitive advantages. Thus, a practical multi-level framework is needed - now more than ever.

*This paper, therefore, seeks to extend existing BITA literature, by providing and evaluating a framework to assess Business- and IT alignment maturity across multiple organizational levels.*

To do so, we explore the most acknowledged BITA literature. Having a deep understanding of the literature provides a solid basis to develop a BITA framework that supports the research purpose of this paper. Through a qualitative approach, the applicability of the BITA framework is evaluated in a single case study on a global organization. This organization is currently assigning an increased focus to its digitalization agenda, which has resulted in the CEO demanding an IT strategy that supports the business strategy. Thus, the need for alignment between business and IT is more relevant than ever. Therefore, the case organization is ideal as a basis for the research and evaluation of the BITA framework suggested in the paper. Having evaluated the BITA framework through a case study, a need to further evaluate the BITA framework in terms of its contributions and boundaries has emerged. The evaluation is included as a discussion regarding the implications and limitations of the BITA framework. Regarding the applicability of the BITA framework, it is relevant to consider the practical and theoretical significance. Therefore, the paper seeks to provide the applicability and appertaining guidance of the BITA framework. This is further accounted for through a discussion concerning the framework's implications and limitations.

## 2 Business-IT Alignment

This section presents the what, why, and how of Business-IT alignment.

### 2.1 What is Business-IT Alignment?

Several definitions of Business-IT alignment exists. Henderson and Venkatraman (1993) defined BITA as a balance between choices made across four domains: (1) Business Strategy, (2) IT Strategy, (3) Organization Infrastructure & Processes, and (4) Information Systems Infrastructure & Processes. Meanwhile, Broadbent and Weill (1993) argued BITA to be a degree of congruence in an organization, by considering the IT function, including the strategy and infrastructure, against similar initiatives in the business function. Porter (1996) supported this view by arguing for BITA to be a *fit*, while Reich and Benbasat (1996, p. 56) defined BITA as “*The degree to which the IT mission, objectives, and plans support and are supported by the business mission, objectives, and plans.*”

Benbya and McKelvey (2006) revised earlier BITA definitions, and instead advocated that BITA should not only be confined to the strategic level in an organization. Instead, BITA should be considered across the organization and across organizational levels. The evolvement of BITA suggests a gradually increasing appreciation of IT and the value that IT provides. Over time, researchers have come to acknowledge IT and recognize that the two functions (Business and IT) are to coevolve on multiple organizational levels in contrary to the early interpretation (Reich and Benbasat, 2000; Fomstad and Robertson, 2006; Chen, 2010).

In this paper, we follow the BITA definition by Luftman (2000): “*It [BITA] addresses both how IT is in harmony with the business, and how the business should, or could be in harmony with IT. Business-IT alignment refers to applying IT in an appropriate and timely way, in harmony with business strategies, goals, and needs.*” (Luftman, 2000, p. 3). The definition advocates a balance between IT and business needs and capabilities, where no single function dominates the other; instead, the functions should aim to be in symbiosis and coevolve for the greater good of an organization. The term ‘harmony’ by Luftman (2000, p. 3) indicates the scenario where IT and business have the same BITA maturity level, and advocates that the functions should coevolve, to achieve a high BITA maturity. Further, the definition of BITA enables an assessment of the level of BITA maturity across the organizational levels through a reflection of: (1) how IT is aligned with the business, and (2) how the business should or could be aligned with IT (Luftman, 2000).

### 2.2 Why Business-IT Alignment?

The literature demonstrates the importance of BITA and the benefits it provides. The common denominator in terms of benefits is that an organization with a high BITA maturity outperforms those that have failed to achieve this (Chan and Reich, 2007; Chan, et al., 1997; Kearns and Lederer, 2003). The

reason is that BITA has shown to be linked to day-to-day operations; hence IT and the business become more effective, efficient and thus profitable when they are aligned (Chen, 2010; Avison, et al., 2004; Tarafdar and Qrunfleh, 2009). Also, a high BITA maturity prompts a greater understanding of each function's domain, hence the IT function is more likely to identify IT solutions that can optimize current business operations (El Mekawy, et al., 2015).

On the opposite side of the spectrum, researchers have also clearly addressed the consequences of having low BITA maturity; the obvious one is being outperformed by organizations with high BITA maturity. Extending on this, Singh and Woo (2009) add that a low BITA maturity hinders the employee's ability to work together for a common goal, regardless of function and organizational level. This inevitably harms the performance. In short, BITA provides numerous benefits across the entire organization and the consequences are severe when failing to achieve and maintain BITA maturity.

### **2.3 How to achieve Business-IT Alignment?**

The literature on BITA is rich and present several models and frameworks on how to measure and achieve a high BITA maturity level.

Henderson and Venkatraman (1993) first introduced the Strategic Alignment model which provided insight into how IT and business were aligned and suggested using different alignment perspectives to obtain a fully aligned IT Strategy and Business Strategy. The Strategic Alignment Model is considered one of the most utilized BITA models; thus, many other BITA approaches are heavily inspired by this.

Chan et al. (1997) extend Henderson and Venkatraman's (1993) work by considering BITA as a fit between the business' strategic orientation and the IS' strategic orientation and render it possible to measure the effectiveness of BITA. Another highly recognized study is the study by Luftman (2003) which introduced the 'Strategic Alignment Maturity model', which was also partially inspired by Henderson and Venkatraman (1993) but in contrary to Henderson and Venkatraman (1993) and Chan et al., (1997), Luftman (2003) considered BITA as a process, which was to be continuously assessed and pursued. Also, Luftman (2003) provided a more practical model that included guidelines on how to assess, improve, and maintain BITA. Inspired by the idea of making Henderson and Venkatraman's (1993) work more practical, Avison et al., (2004) also proposed a framework to determine an organization's current BITA maturity by mapping current projects in line with the component of the Strategic Alignment Model. The framework by Avison et al. (2004) enabled an organization to monitor projects closely and adjust accordingly using the alignment perspectives proposed by Henderson and Venkatraman (1993).

BITA literature not inspired by Henderson and Venkatraman (1993) also exist, such as Reich and Benbasat (2000). With a notion that BITA was a product of an intellectual dimension and a social dimension, Reich and Benbasat (2000) proposed a model focusing on the social dimension of BITA. Specifically, addressing how BITA was affected by certain social constructs, both short-term and long-term. Later, a notion of considering BITA on multiple organizational levels arose, challenging the many existing BITA models. Benbya and McKelvey (2006) proposed a framework that emphasizes that BITA occurs through coevolution, equally influenced by IT and business across multiple organizational levels. This notion was also acknowledged by Fonstad and Robertson (2006) when they introduced 'The IT Engagement model' which focuses on how to achieve and maintain BITA maturity between business and IT on multiple organizational levels.

Table 1 provides an overview of the BITA models and frameworks proposed in the existing literature on four parameters, which were derived from a comparison of the BITA models and frameworks. 1) Paradigm (if BITA is seen as a state or a process). 2) Flexibility (if the suggested model is adjustable). 3) Scope (if the model focus on achieving, assessing, and maintaining BITA) and 4) organizational level (which specific organizational level the model focuses on).

Fonstad and Robertson (2006), Luftman (2003), Benbya and McKelvey (2006) and Avison et al. (2004) fulfill several of the parameters, however, according to Table 1, none fulfills all the parameters. Thus, in the following section, a multi-level BITA framework, supporting all parameters is constructed.

Literature	Paradigm	Flexibility	Scope			Org. level
			Achieve	Assess	Maintain	
Henderson (1993)	State	X	X		X	Strategic
Chan et al. (1997)	State			X		Strategic
Reich and Benbasat (2000)	State			X		Strategic
Luftman (2003)	Process	X	X	X	X	Strategic
Avison et al. (2004)	Process		X	X	X	Strategic
Benbya and McKelvey (2006)	Process	X	X		X	All
Fonstad and Robertson (2006)	State	X	X		X	All

Table 1. Overview of BITA models and frameworks

### 3 Constructing the Multi-Level BITA framework

The purpose of the Multi-Level BITA framework is to support a BITA maturity assessment on multiple organizational levels and across the business and IT functions. We concur with Benbya and McKelvey (2006) and recognize BITA as a process in which both business and IT must co-evolve. We also recognize a need for flexibility in the approach suggested, as all organizations are unique, and adjustments thus are necessary (Sabherwal et al., 2001). In terms of the scope; we concur with Luftman (2000) that states that a model must suggest areas of improvement for achieving, assessing, and maintaining BITA. Lastly, in line with Benbya and McKelvey (2006) and Fonstad and Robertson (2006), we recognize that BITA occurs and affects the organization on multiple organizational levels; specifically, on the strategic, tactical, and operational levels.

We acknowledge the strengths and contributions of the existing models; thus the construction of the Multi-Level BITA framework will be based on 1) the IT Engagement model by Fonstad and Robertson (2006), 2) the Strategic Alignment Maturity model by Luftman (2003) and 3) the underlying findings by Benbya and McKelvey (2006). The Multi-Level BITA framework is illustrated in Figure 1.

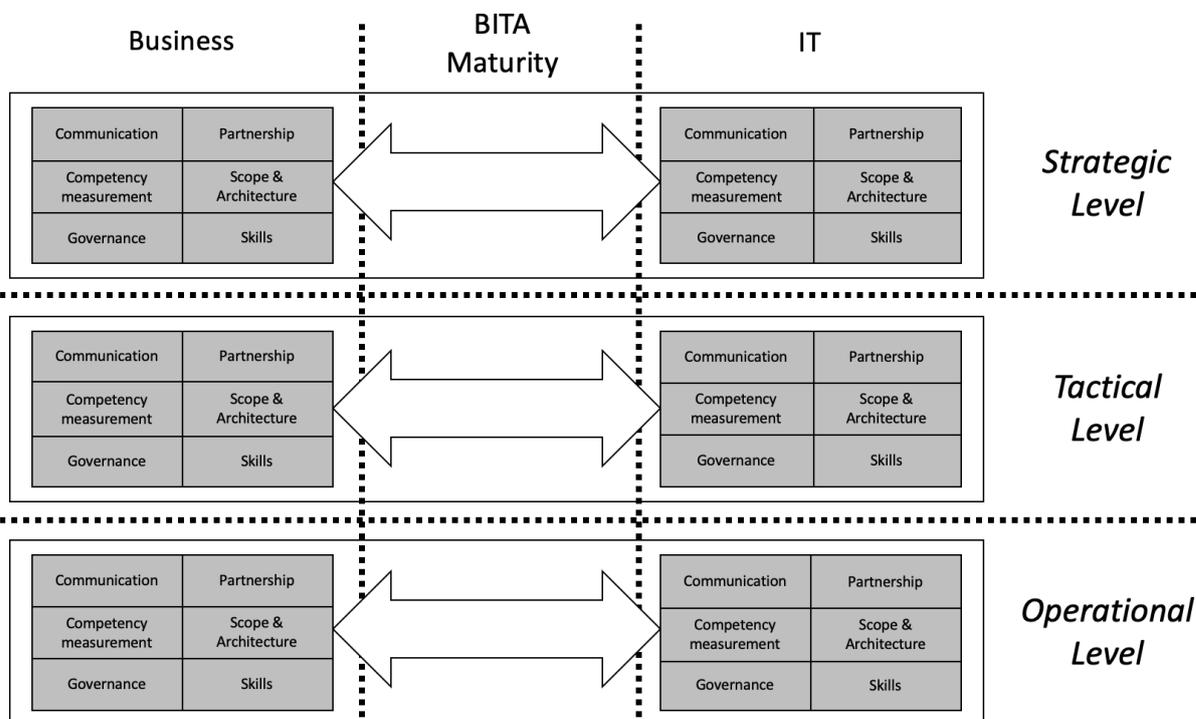


Figure 1. The Multi-Level BITA framework

The foundational structure in terms of the two functions, business and IT, and the three organizational levels (strategic, tactical operational) of the framework is adapted from the IT-engagement model by Fonstad and Robertson (2006). They introduce alignment linkage mechanisms and propose how all six stakeholder groups at all organizational levels should be engaged to achieve a high level of BITA.

To implement a practical assessment, the six BITA criteria (Table 2) and the five maturity levels (Table 3) from Luftman (2003) are adopted for assessment at all levels, and both functions (marked with grey in Figure 1). The criteria are composed of underlying BITA attributes, which can be used for assessing the maturity. The criteria by Luftman (2003) were chosen as they have been utilized in several organizations and thus have proven its relevance. The framework by Luftman (2003) uses a 5-point Likert scale to assess each BITA attribute, which is effectively unified to one overall mean of the six BITA criteria. The assessment is conducted by a team of executives in the organization. We argue that having a team of IT and business executives to evaluate the criteria only provides their interpretation of the level of BITA maturity. This interpretation may not coincide with the rest of the organization resulting in an inaccurate picture of the BITA maturity of the organization. Instead, the Multi-Level BITA framework obtains the assessment of respondents from each organizational level providing a more comprehensive understanding of the BITA maturity in an organization.

<b>BITA criteria</b>	<b>Description</b>
Communication	Understanding of business by IT; understanding of IT by business; inter/intra organizational learning; protocol rigidity; knowledge sharing; liaison(s) effectiveness
Competency measurement	IT metrics; business metrics; balanced metrics; service level agreements; benchmarking; formal assessment; continuous improvement
Governance	Business strategic planning; IT strategic planning; reporting/organization structure; budgetary control; IT investment management; steering committee(s); prioritization process
Partnership	Business perception of IT value; the role of IT in strategic business planning; shared goal, risk, rewards/penalties; IT program management; relationship/trust style; business sponsor/champion
Scope and architecture	Traditional, enable/driver, external; standard articulation; architectural integration; architectural transparency; flexible managing emerging technology
Skills	Innovation, entrepreneurship; locus of power; management style; change readiness; career crossover; education; cross-training; social, political, trusting environment

Table 2. BITA criteria derived from Luftman (2003)

<b>Maturity levels</b>	<b>Description</b>
Level 1: Initial/Ad Hoc Process	Organizations at this level have no or minimal BITA maturity, which has resulted in significantly unleveraged IT investments. IT is perceived as a cost of doing business due to the minimum awareness of each function’s contribution.
Level 2: Committed Process	Organizations at this level have committed to maturing BITA however are in the early stages. It is somewhat limited to local situations or functions within the organization and has yet to achieve BITA company-wide.
Level 3: Established and Focused Process	IT has become embedded in the business and is slowly being leveraged as an asset company-wide. IT Executives and IT middle-managers clearly understands business while business is beginning to understand the value IT provides.
Level 4: Improved/Managed Process	An organization at this level demonstrates a high level of governance where IT is perceived as value-creating. The business clearly understands the value and potential of IT.
Level 5: Optimized Process	An organization at this level has achieved the highest level of BITA maturity or “complete alignment”. A pervasive understanding of the two entities contribution has been established and integrated Business-IT processes are ensured.

Table 3. The maturity levels derived from Luftman (2003)

Finally, the proposed Multi-Level BITA framework applies the mindset of Benbya and McKelvey (2006), as they acknowledge that BITA needs to be considered on multiple organizational levels and as they recognize BITA as a process, including co-evolution (as opposed to Fonstad and Robertson (2006)). Thus, in line with this mindset, the Multi-Level BITA framework considers BITA as a continuously changing concept and advocates for assessing BITA continuously rather than performing one single assessment.

The resulting Multi-Level BITA framework allows an organization to identify and compare the BITA maturity of the organizational levels, but also to drill down to a more detailed view, and directly examine and compare specific BITA criteria on a specific organizational level or between functions.

## 4 Research Approach

The overall research design consists of two interrelated phases: 1) A theoretical-based construction of the Multi-Level BITA Framework and 2) An empirical-based evaluation of the framework. The theoretical contribution of the first phase is the Multi-Level BITA Framework (section 3), while the second phase seeks to evaluate the practical applicability of the framework on an empirical case (section 5).

### 4.1 Phase 1: Reviewing Literature to construct the Framework

To widen our understanding of BITA a review of existing literature was conducted. The review is based on guidelines by Webster and Watson (2002) and their procedure for conducting a literature review within the IS field. The review concerned existing relevant concepts and theories to understand BITA (Bryman and Bell, 2015). The composition of the review took on a structured approach to ensure that all relevant aspects of BITA were considered. The initial search of literature took a point of departure in recognized journals within the field of IS and organizational theory. In the second step, search engines (Scopus and Google scholar) was used to identify literature. A wide range of search words was used, for example: ‘Business + IT + Alignment’, ‘Business + IT + alignment + maturity’, and ‘Business-IT Alignment + Organizational levels’. Furthermore, a forward- and a backward search were performed on the relevant literature, resulting in 98 papers. The 98 papers were analyzed using a concept matrix (Webster & Watson 2002).

### 4.2 Phase 2: Using a Case Study to Evaluate the Framework

The second phase of this study is a qualitative single case study used to empirically evaluate the Multi-Level BITA framework. A case study approach gave the ability to grasp the complexity of BITA across multiple organizational levels in a real-life social context. The case study was conducted at a large (more than 17000 employees) privately held company operating worldwide primarily within manufacturing and sales.

The data was gathered through 12 anonymous semi-structured interviews (Table 4 gives an overview of the respondents), observations, and document studies. The interviews enabled us to acquire deep insight into the behavior and attitudes of the respondents. To select the respondents, they were separated into the three groups constituting the organizational levels. We aimed to obtain a nuanced picture of the IT and business functions; hence, the respondents were of different gender, age, and seniority.

Org. level	Business	IT
Strategic	Senior Vice President	Chief Information Officer
Tactical	Vice President Senior Director Director	Vice President Director
Operational	Senior Manager Development Manager	Product Owner Senior Solution Architect Junior IT Engineer

Table 4. Overview of the respondents

As the criteria of the BITA framework is inspired by Luftman (2003), the interview guides were based on the BITA criteria, and underlying BITA attributes from Luftman (2003). The BITA attributes have been thoroughly tested and previously proven to reflect the BITA maturity of an organization; hence, we seek to minimize the deviation of this (Luftman, 2003). Also, Luftman (2003) recognizes that some BITA attributes are more valuable and relevant in certain contexts. Therefore, Luftman (2003) advocates that an organization must evaluate the significance of each BITA attribute and adjust the BITA assessment accordingly. We acknowledge and extend this notion by evaluating the significance of each BITA attribute for each organizational level, to include only the relevant BITA attributes in the interview guides. In this connection, we highlight the strategic level, as it became evident during the interview with the Senior Vice President (Business), that he had no or very limited knowledge of the BITA criteria ‘Scope & Architecture’ and ‘Competency Measurements’, hence it would provide misleading results if we assessed these BITA criteria, using only statements by the CIO (IT). Therefore, questions regarding these BITA criteria was excluded on the strategic level.

To capture the meanings of the respondents following the BITA framework, a deductive analysis was conducted. The analysis was structured according to a tree structure of predefined codes (see Table 5). At the first level, the three organizational levels were represented, the second level codes were respectively the Business and IT functions, and the third level codes consisted of the 4-6 BITA criteria from Luftman, which had been assessed at the particular level. Based on the quotes an overall score was given for each criteria. The purpose of the empirical analysis was to evaluate whether the Multi-Level BITA framework captured the relevant categories and criteria, thus additionally and simultaneously with the deductive analysis an open analysis was performed. The analysis (and scoring) of each interviewee’s answers was sent to the respondent for confirmation.

1st level codes: The organizational levels	2nd level codes: The functions	3rd level codes: The criteria	Example quotes
Strategic level	Business	Example criteria: • communication	”when you get to know each other and explain why you prioritize this way, well then it becomes easier to accept”
	IT	Example criteria • skills	“It is all about stakeholder management, about the ability to have a dialog and the ability to teach the business side to share their dreams”
Tactical level	Business	Example criteria • partnership	”Sometimes there is a problem at the lower levels, but my relationship with the Vice president for IT is 100% trustful”
	IT	BITA criteria	Quote
Operational level	Business	BITA criteria	Quote
	IT	BITA criteria	Quote

Table 5. The predefined codes used in the analysis

## 5 Empirical Application of the Multi-Level BITA Framework

This section illustrates an empirical application of the Multi-Level BITA framework constructed in section 3. Using the framework in the case organization enabled us to aggregate and compare the means of the BITA criteria both on the three organizational levels and across the business and the IT function. As illustrated in Figure 2, a solid overview of the BITA assessment is evident.

The analysis of the BITA across the three organizational levels and the business and IT functions reveals two overall patterns: 1) a variance and decrease in the maturity score across the organizational levels and 2) variance in the maturity score across the two functions, IT scoring higher than business.

These variances are elaborated in section 5.1 and 5.2. Section 5.3 provides the case-specific reasoning behind the scores and the variances.

The empirical application of the Multi-Level BITA Framework shows how it enables an assessment of an overall BITA maturity for each organizational level, for each function, as well as details on the score for each criterion. All of these are based on interviews as the data collection method further provided a deeper understanding of the reasons behind the BITA maturity level. These three elements provide a much more elaborate assessment of BITA than previously possible. These details were assessed as highly valuable by the case organization as they provided a solid basis for improving the BITA.

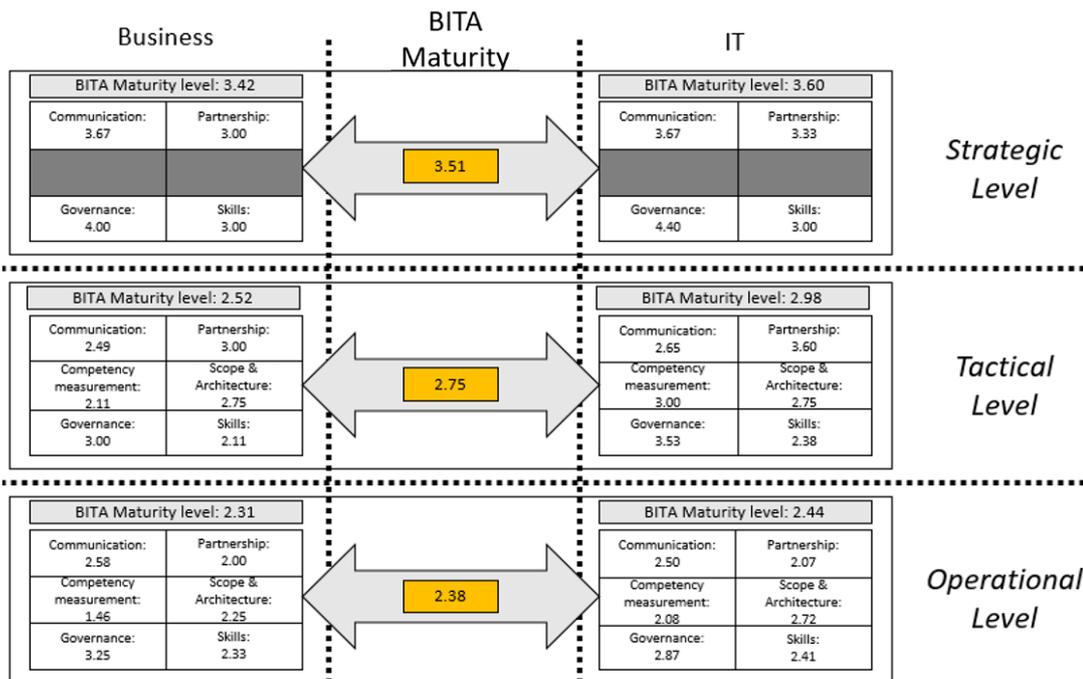


Figure 2. The BITA Maturity Assessment of the case organization

### 5.1 Variance in the Maturity Score across the Organizational Levels

The analysis showed a variance in the maturity score across the organizational levels and showed how the maturity score decreased from the strategic level, through the tactical level and down to the operational level.

The strategic level in the case has an average BITA maturity of 3.51, the tactical level has an average BITA maturity of 2.75 while the operational level has an average BITA maturity of 2.38. While the score at the strategic level corresponds to the third BITA maturity level called ‘Established and focused processes’; the scores on the tactical and operational levels correspond to the second level called ‘Committed processes’. The third level implies a concentrated effort on governance and communication often structured around a formal liaison. On this level, IT has obtained a great understanding of how the business operates, and business is beginning to recognize the value that IT provides. The second level implies that IT is emerging as an asset for the organization; however, yet have to achieve company-wide goals. Also, the BITA maturity suggests an imbalance of risk and rewards, and low integration of IT architecture (Luftman, 2003).

When considering the BITA scores across the organizational levels in each function, a similar pattern arises. For the business function, the strategic level remains the highest with a BITA maturity of 3.42, the tactical level is then assessed at 2.52 and finally, the operational level is assessed the lowest with a BITA maturity at 2.31. A similar pattern is evident in the IT function.

When considering each BITA criteria within the levels; the scores show how the criteria that differ most are the same for both functions: communication and partnership. Comparing the criteria across the organizational levels shows how communication scores differ the most on the business side; while achieving a score of 3.67 at the strategic level, communication between business and IT only scores 2.49 at the tactical level. On the IT side, both partnership and governance differ significantly. While partnership scores 3.60 at the tactical level, it only scores 2.07 at the operational level. Governance scores 4.40 at the strategic level and 2.87 at the operational level.

This shows how the view on BITA maturity differs in the organization depending on the organizational level. The analysis thus shows how the Multi-Level BITA framework can reveal differences in the maturity score across the organizational levels and show how an organization's maturity level might be positioned between two levels.

## **5.2 Variance in the Maturity Score across the two Functions**

The analysis also shows how the maturity score slightly differs across the business- and the IT function. At the strategic level, the business BITA maturity is assessed at 3.42 whereas the assessment from IT is at 3.60, both scores are close to the average BITA maturity of 3.51, and both scores suggest a third level BITA maturity. At the tactical level, a slight difference is also seen, as the BITA maturity by the business is assessed at 2.52 and by IT at 2.98. The same pattern goes for the operational level where BITA maturity for the business is assessed at 2.31 and for IT at 2.44.

It is worth noting that the IT BITA maturity score is higher than the business BITA maturity at all levels. Looking into the criteria, the analysis shows how all criteria at the strategic and the tactical level are assessed higher by IT than by business. At the operational level, the criteria 'communication' (2.58 vs 2.50) and 'Governance' (3.25 vs 2.87) are assessed higher by business.

## **5.3 Reasoning behind the Maturity Scores**

In the previous sections, the analysis has shown how the Multi-Level BITA framework provides an overview of the maturity scores; the qualitative data collection through interviews also provided a detailed understanding of the reasoning behind the maturity scores. The analysis suggests that a well-established relationship between the respondents has had a positive influence on their BITA maturity, whereas an unfortunate past has had an adverse influence on the underlying BITA criteria and consequently the BITA maturity. The analysis also emphasizes that a perceived lack of IT resources is one of the main roots of multiple low-level assessments on the tactical and operational levels. In the following subsections, we elaborate on the reasons behind the scores; we do this for the two criteria that differed the most: communication and partnership.

### **5.3.1 Communication**

The Senior Vice President (Business) placed at the strategic level explains how the history of poor communication has led to disagreements between the business and IT, he however still expresses a high level of BITA regarding communication. He further believes that communication goes both ways and that it is the responsibility of both IT and business. The Director (Business) placed at the tactical level points to the fact that he has a limited understanding of the IT function. At the same time, he states that the need for communication between IT and business has increased. However, he also expresses that there is no need for the business function to increase their level of IT understanding as he sees the collaboration with IT as a customer-supplier relationship, hence the supplier (IT) is obligated to acquire additional business understanding. The analysis thus shows how these two respondents have a very different view of the communication and the need for this.

The IT function also includes significant differences in BITA maturity regarding communication. Specifically, the strategic and operational level in the IT function constitutes some of the biggest differences in the BITA criteria. This difference can be explained by how the Senior Solution Architect (IT) perceives communication at the operational level. He identifies a tendency that IT is not visible for

certain areas of the business. He blames the fact that the IT department is centralized. He also points to the fact that the lack of visibility in these areas is caused by a lack of resources.

### 5.3.2 Partnership

Partnership is the other BITA criteria highlighted, as the analysis suggests a relatively crucial difference between the organizational levels in the IT function. In this analysis, we highlight some major differences between the tactical and operational levels.

The Product Owner (IT) situated at the operational level states how the relationship between the business and IT is perceived as more of a customer-client nature than a partnership. The Product Owner (IT) explains that the reasoning behind this perception is a consequence of the organizational structure and the lack of resources, as IT is not able to support the demand of the operational level in the business function. The Senior Solution Architect (IT) also situated at the operational level agrees with the Product Owner (IT) about the lack of resources and further expresses trust concerns. He explains that general trust is good, but that business does not trust IT to deliver scope and quality in time. The analysis shows that the fluctuating perception of trust on the operational level is considered as one of the main reasons for the assessment to differ between the tactical and strategic levels.

Notably, the level of trust at the strategic level is expressed by the Vice President (IT) to be a huge asset. He explains how an established personal relationship has strengthened the professional relationship, ultimately increasing the level of trust between the Vice President (IT) and Vice President (Business).

## 6 Discussion

In this section, we discuss how the Multi-Level BITA framework contributes to both research literature and practice and consider some limitations of the framework.

### 6.1 The Contribution of the Multi-Level BITA Framework

The Multi-Level BITA framework is the contribution of this paper. The Multi-Level BITA framework contributes to the existing literature by advocating BITA as a concept that is significantly more complex than what previous literature has recognized (Henderson and Venkatraman, 1993; Luftman, 2003; Fonstad and Robertson, 2006; Benbya and McKelvey, 2006). The increased complexity is grounded in recognizing the influence and involvement of people on multiple organizational levels by both IT and business as well as recognizing BITA as a continuously evolving concept (Benbya and McKelvey, 2006). To manage this complexity, the BITA framework consolidates findings by Luftman (2003), Fonstad and Robertson (2006), and Benbya and McKelvey (2006) to provide a practical but extensive approach to assess BITA maturity on multiple organizational levels continuously.

As demonstrated in the case study, the BITA framework breaks down the BITA assessment into manageable pieces. The break-down is accommodated, through a BITA maturity assessment that on a high level provides an overview of the functions, while also enabling BITA maturity assessments through a more detailed lens that complies with the crucial details in the BITA maturity assessment. This way the Multi-Level BITA framework considers each function's perception of the BITA criteria, separately, divided into organizational levels; in coherence with the view by Benbya and McKelvey (2006) and Fonstad and Robertson (2006). This approach enables an organization to identify the perception of BITA across the organizational levels and across the functions (Luftman, 2003; Fonstad and Robertson, 2006). Finally, the BITA framework enables an organization to identify and compare the differences, challenges, and areas of improvement, all of which assist in obtaining a higher BITA maturity (Luftman, 2003).

We advocate conducting BITA assessments regularly, as BITA is a process, and an assessment only provides a snapshot of the current reality (Benbya and McKelvey, 2006). This might also enable organizations to follow the evolution of the BITA maturity and ensure the progress of the initiatives implemented to improve BITA maturity.

## **6.2 The Limitations of the Multi-Level BITA Framework**

In this section, we highlight two main limitations of the Multi-Level framework in its current state: the comprehensive assessment approach and the lack of focus on coordination.

### **6.2.1 The Assessment Approach**

In this paper, we advocate, that the BITA maturity is assessed by conducting interviews at all three organizational levels and that this assessment is done regularly. This, however, implies a comprehensive and time-consuming approach. Luftman (2003) advises to conduct and discuss the BITA maturity assessment using a focus group setting comprised of top executives. The individual anonymous interviews allowed the respondents to speak freely about their main concerns and provided a thorough in-depth understanding. A middle ground to the approach may be to mix and alternate between the approaches: 1) using a questionnaire to quickly get an average BITA score, 2) using focus groups to trigger a discussion on BITA maturity, and 3) using individual interviews to gain in-depth reasoning for the scores before choosing and initiating actions to improve the BITA. Thus, before measuring the BITA maturity, the needs and the purpose of the assessment must be considered, and the right approach chosen for each round of assessment.

### **6.2.2 Coordination**

An essential part of the engagement model by Fonstad and Robertson (2006) is the relationship inside each function, also named coordination. Their study suggests that BITA and coordination are highly interdependent and hence to improve BITA, the coordination must also be improved. The Multi-Level BITA framework does not capture nor assess the coordination within the functions, this is a limitation to the framework in its current state. The analysis is grounded in how participants perceive BITA, and if a low level of coordination is present between two organizational levels within the function, this may influence the participant's perception of the opposite function as well (Fonstad and Robertson, 2006). A future possibility is thus to enhance the framework to also include an assessment of the coordination as this could provide a more holistic view of the organization and the attributes influencing BITA.

## **7 Conclusion**

The purpose of this paper was to extend the existing literature on Business-IT alignment by providing and evaluating a framework for assessing Business-IT alignment maturity across multiple organizational levels. A Multi-Level BITA framework was constructed based on the strengths and weaknesses of the existing models of Fonstad and Robertson (2006), Luftman (2003), and Benbya and McKelvey (2006). This resulted in a framework (Figure 1) that enables a BITA assessment on three organizational levels as well as across the business and IT functions. The Multi-Level framework was empirically applied in a case organization (Figure 2); the BITA assessment reveals two overall patterns: first variance and decrease in the maturity score across the organizational levels were detected and second variance in the maturity score across the two functions was identified, showing how IT scored higher than business. The application of the Multi-Level BITA framework showed how it is a valuable tool to reveal differences in the BITA maturity across the organization. The approach of using qualitative interviews further provided detailed reasoning behind the scores giving an understanding of how to improve the BITA maturity.

For future research, it will be highly relevant to use the Multi-Level BITA framework to conduct additional assessments of the BITA maturity in the case company to evaluate the further implications of its application. Another interesting next step would be to apply the framework in other case organizations to further evaluate its value and the approach measuring BITA maturity suggested.

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