Organizational Culture Impact on Business-IT Alignment: A Case Study of a Multinational Organization

Mohamed El-Mekawy and Lazar Rusu
Department of Computer and Systems Sciences, Stockholm University, Sweden
moel@dsv.su.se lrusu@dsv.su.se

Abstract
Importance of BITA has increased over the past few years. However, achieving and maturing BITA still has apparent difficulties. Therefore, research efforts resulted in a number of theoretical models that can be applied as supportive tools for assessing different components of BITA. Most of these efforts have been produced either in Anglo-Saxon Countries or based on their experiences. The purpose of this paper is to explore the impact of organizational culture on maturity of BITA. The paper relies on the nine dimensions of Project GLOBE to understand societal as well as organizational culture. It also relies on the bottom-up comprehensive approach of Luftman’s Strategic Alignment Maturity Model to understand organization’s alignment components. To fulfill the purpose of this study, a comparative analysis has been carried out between two subsidiaries of a multinational organization with a federal organizational structure that operate in Egypt and Sweden. The results shows: a) a potential difference in how different components of BITA are interpreted and implemented in different organizational culture, and b) that the impact of organizational culture on BITA maturity is more complex than what is expected especially on variables that require social interactions.

1. Introduction
The importance of IT in companies has spawned research on effective and efficient deployment of IT to gain strategic advantages. The significance of IT as an enabler of business is well recognized, however, many companies still failed to gain value and competitive advantage from huge IT investments. This failure is partially attributable to lack of business-IT alignment (BITA) [1]. Researchers emphasize that in an increasingly competitive, IT-driven and vibrant global business environment, companies can gain only strategic advantage and derive value from IT investments, when efforts are made by management to ensure that business objectives are shaped and supported by IT in a continuous and dynamic fashion [2].

Strategic alignment refers to applying IT in a way that is timely, appropriate and in line with business needs, goals and strategies [2]. A ability of IT to support business objectives would be best achieved when business and IT are harmonized and aligned. This requires actions to be managed to ensure agreement between IT and the key business activities [3]. A great deal of research focused on BITA and the link between business and IT domains [4]. However, alignment is in contrast to what is often experienced in organizations. Because of differences in objectives, incentives, cultures, and perception of value, professionals from both domains are unable to smoothly bridge the gap between them. Culture is one of several factors whose impact on BITA has yet not been well studied in researches [5]. Different attempts for studying culture and BITA are published. However, these efforts study: a) cultural insights on managing IT in organizations [6], b) national culture effect on organizations perception of IT value [7], or c) national culture effect on maturity of BITA [5]. They either lack a focus on measuring BITA components or they use Hofstede’s model for national culture which has been criticized by several authors as it only stereotypes nations.

With the increase of organizations’ dependence on IT for facilitating business processes and networking, a more focused view on organizational culture is required. As a result, this paper aims at studying the focused organizational culture impact on maturity of BITA. The research question in this paper is then highlighted as “How organizational culture impacts the maturity of BITA”. To draw on our hypothesis of different interpretations of BITA components affected by cultural variables, we present a comparative analysis based on a case study of two subsidiaries, in Egypt and Sweden, of the same US federal organization.

The rest of the paper is organized as follows: section 2 presents research problem approach. Section 3 discusses implications of BITA, followed by a background to organizational culture in section 4. Section-5 explores theoretical organizational culture impact on BITA in. Finally, comparative analysis is provided in section 6 followed by discussion and conclusions.

2. Research Approach
The purpose of this paper is to explore the impact of organizational culture on BITA. To fulfill this purpose, we have adopted a qualitative research approach based on an empirical study. Two steps are proposed (Figure 1). The first step is to explore the impact of organizational culture in two subsidiaries of the same federal multinational organization. In this case, organizations have fixed general business and IT strategies but to be implemented locally in different cultural contexts. In step-2, we, however, fix the culture context and make culture of both business and IT as variables (e.g., when American business runs in Sweden with Swedish IT people or a Swedish company fully outsource its IT to another country). In this paper, we only examine step-1 and leave
In-depth analysis

individuals from each level in both companies. This round (from November 2009 to February 2010) with at least two questionnaires linked our hypotheses, preliminary detailed attributes of all criteria of Luftman model. Our focused on measuring the maturity of BITA based on the organizational effectiveness.

BITA. On the impact of organizational culture aspects on the preliminary findings and perceptions. Interviews focused on cultural dimensions. This phase was mainly for discussing our research hypotheses, preliminary findings and definitions of different organizational culture hypotheses. Second-round interviews (from Nov 2008 to March 2009) with at least two individuals from each operational, tactical and strategic level in both companies. Interviews aimed mainly at confirming scores of the Project GLOBE on cultural dimensions. Desk analysis (from June 2008 to Nov 2008) for general findings and definitions of different organizational culture hypotheses. Second-round interviews (from Nov 2008 to March 2009) with at least two individuals from each operational, tactical and strategic level in both companies. This phase was mainly for discussing our preliminary findings and perceptions. Interviews focused on the impact of organizational culture aspects on the organization without relating that directly to the criteria of BITA. Second desk-analysis (from March 2009 to November 2009) for examining our findings on relating cultural dimensions to each other and linking them to organizational effectiveness. Third-round interviews (from November 2009 to February 2010) with at least two individuals from each level in both companies. This round focused on measuring the maturity of BITA based on the detailed attributes of all criteria of Luftman model. Our questionnaires linked our hypotheses, preliminary findings and the answers from the two previous rounds. In-depth analysis (from February 2010 to May 2010) to link all findings and analyze the potential impact of organizational culture on maturity of BITA.

3. Implications of Business-IT Alignment

In literatures, BITA is related to different scopes, and it is therefore defined differently. While some definitions focus more on the outcomes from IT (for producing business value), others have a focus on harmonizing business and IT domains with their objectives, strategies and decision making processes [10]. These two focuses have affected the way of how BITA is expressed in publications [5]. Publications that study the benefits of IT for business look at leveraging [1], enabling [11], transforming [12] and optimizing [13] business processes. Others that focus on the relationship between the domains refer to matching [14], harmonization [15], integration [16], bridging [17], fusion [18] and linkage [19]. Achieving BITA has traditionally been seen as a part of CIOs’ duties. That typically involved communication and strategy translation at executive levels [20]. Today, successful BITA, however, entails much more at tactical and operational levels, and focuses on management activities that help in achieving cohesive goals across IT and business operations [21]. Therefore, it requires strong senior manager’s support, appropriate prioritization, trustful relationship and effective communications.

The real concern for organizations today is not ‘why alignment is important’. The focus, instead, is on how it can be achieved and matured [22]. Dynamic multi-dimensional set of alignment components is visible in every organization when going from business strategy to IT-Governance [23]. Different efforts have been oriented towards assessing BITA by proposing theoretical models that can be applied as supportive tools for addressing different BITA components [24]. Although Henderson and Venkatraman may be seen as the founding fathers of assessing BITA [25], Luftman model (2000) has started gaining more popularity on practice [26]. Based on a comprehensive comparative analysis [24] for BITA assessment models, Luftman Assessing Business-IT Alignment Maturity Model (LAM) is chosen for the analysis in this study. LAM shows a bottom-up comprehensive approach for assessing BITA starting from alignment components at operational level towards business and IT domains at executive levels [23]. Additionally, it gives focus on different areas by its modularity in six criteria. Complexity of applying LAM is, however, seen as one of few drawbacks that require deep understanding and analysis while applying.

Figure 1. The Research Approach

The company is an IT-related with focus on software development, telecommunication, customized services and application development. In both Egypt and Sweden, each subsidiary has 500-1000 employees. Both subsidiaries have similar general business and IT strategies which are mandatory for them to follow but to be implemented according to local conditions. Because of the confidentiality (claimed by the companies) we will refer to these companies as Company-A (for the Egyptian subsidiary) and Company-B (for the Swedish subsidiary).

The data for our empirical study was collected through structured interviews with people at strategic, tactical and operational level of business and IT domains of the two subsidiaries. The study was done in six phases; First-round interviews (from Jan 2008 to June 2008) with at least two individuals from each operational, tactical and strategic level in both companies. Interviews aimed mainly at confirming scores of the Project GLOBE on cultural dimensions. Desk analysis (from June 2008 to Nov 2008) for general findings and definitions of different organizational culture hypotheses. Second-round interviews (from Nov 2008 to March 2009) with at least two individuals from each level in both companies. This phase was mainly for discussing our preliminary findings and perceptions. Interviews focused on the impact of organizational culture aspects on the organization without relating that directly to the criteria of BITA. Second desk-analysis (from March 2009 to November 2009) for examining our findings on relating cultural dimensions to each other and linking them to organizational effectiveness. Third-round interviews (from November 2009 to February 2010) with at least two individuals from each level in both companies. This round focused on measuring the maturity of BITA based on the detailed attributes of all criteria of Luftman model. Our questionnaires linked our hypotheses, preliminary findings and the answers from the two previous rounds. In-depth analysis (from February 2010 to May 2010) to link all findings and analyze the potential impact of organizational culture on maturity of BITA.

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Importance of BITA. The relationship between business and IT has been highlighted as the top success factor for implementing information systems in organizations [27]. Additionally, it has been the top management concern in the annual survey of the Society for Information Management (SIM) from 2003-2009 with second in 2007 and 2009 [28]. In practice, research and studies have shown that BITA has gained popularity and more importance for organizations around the world [29]. Researchers emphasize on the importance of BITA for many reasons; one of the primary reasons is to facilitate development and implementation of IT applications that are required for improving business processes. This can only be done by developing cohesive organization and IT strategies. [21]. Furthermore, business-IT partnership is the only way for enabling business transformation [30].

Luftman Alignment Maturity Model (LAM). This research applies LAM as a framework for analyzing culture implications on alignment. The model is based on earlier research on enablers and inhibitors of strategic alignment, was developed by Luftman. It classifies strategic alignment based on six criteria (Table 1) and five levels which gives a crystal clear view of alignment, and helps to spot particular areas where an organization needs to improve in order to derive maximum value from IT investments. LAM is a comprehensive framework that makes a step by step analysis of individual elements of alignment possible, this will help to identify cultural enablers and inhibitors of strategic alignment. It provides an instrument for understanding and improving the relationship between business and IT.

4. Background to Organizational Culture

Culture is theoretically defined as shared motives, values, beliefs, identities, and interpretations of important events resulting from shared experiences of members of collectives and is conveyed from one generation to another. Operationally, culture consists of shared language, belief systems such as religion and political beliefs, ethnic heritage and history [31, 32]. Culture has been defined in many contexts and at different levels. It ranges in literatures from national, regional, societal and organizational culture [33].

While the focus in studying culture has been on its national level led by studies of Hofstede [34] for almost two decades, a clear criticism has been brought up to highlight other levels of culture. It is claimed that national culture creates a stereotyping without a real picture of a nation that may have many subcultures [35]. Organizational culture is however viewed as a subset of national culture as organizations operate within a given national context with employees from the same national culture [36].

In this study, we focus on organizational culture rather than national culture. Our reasoning is clear as Sweden is usually stereotyped in cultural studies with Scandinavian Countries [37] and Egypt is stereotyped with Arab or North African Countries [34]. However, there are apparent cultural differences; in Sweden between big cities in the south and small towns in the north and peripheral areas, and in Egypt between north and south.

Table 1. Criteria of Luftman’s BITA Maturity Model (Luftman, 2000)

<table>
<thead>
<tr>
<th>BITA Criterion</th>
<th>Definition and Questions Attached</th>
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<tbody>
<tr>
<td>Communications</td>
<td>Refers to clear understanding between business and IT communities with an effective exchange and sharing of each ideas, processes and needs.</td>
</tr>
<tr>
<td>Competency/Value Measurements</td>
<td>Concerns about demonstrating IT values in compatible figures with the business community understanding. Therefore, both business and IT have usually different metrics of values they add.</td>
</tr>
<tr>
<td>Governance</td>
<td>Ensures that business and IT communities formally and periodically discuss and review their plans. Different priorities are important to be clearly defined for allocating the needed IT resources.</td>
</tr>
<tr>
<td>Partnership</td>
<td>Refers to the relationship between business and IT in having shared vision of the organisation’s processes in order to facilitate the IT as an enabler or driver for business transformation in processes and strategies.</td>
</tr>
<tr>
<td>Scope and Architecture</td>
<td>Illustrates the involvement of IT in all organisational processes. It defines the IT role in supporting flexible and transparent organisational infrastructure. This, however, facilitates applying technologies effectively and providing customised solutions responding to customer needs.</td>
</tr>
<tr>
<td>Skills</td>
<td>Refers to all human resource aspects that influence (are influenced) by changes. They include factors that enhance organization’s cultural and social environment as components of organizational effectiveness.</td>
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Table 2. Project GLOBE’s Cultural Dimensions

<table>
<thead>
<tr>
<th>BITA Criteria</th>
<th>Definition</th>
<th>Expected Profile</th>
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<tbody>
<tr>
<td>Power distance</td>
<td>The degree to which members of a collective expect power to be distributed equally.</td>
<td>Followers should be expected to obey leaders without question.</td>
</tr>
<tr>
<td>Uncertainty Avoidance</td>
<td>The extent to which a society, organization, or group relies on social norms, rules and procedures to alleviate unpredictability of future events.</td>
<td>Most people should lead highly structured lives with few unexpected events.</td>
</tr>
<tr>
<td>Humane Orientation</td>
<td>The degree to which a collective encourages &amp; rewards individuals for their cooperation.</td>
<td>People should be generally very tolerant of mistakes.</td>
</tr>
<tr>
<td>Institutional Collectivism</td>
<td>The degree to which individuals are integrated into groups within the society.</td>
<td>Group loyalty is encouraged even if individual goals suffer.</td>
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</tbody>
</table>
organizational culture on BITA, we rely on the operational level [38]. At tactical level, and aspects of organizational life at missions and objectives, beliefs and norms of employees layers. They are; values at strategic level including organizational culture can also be divided into three main dimensions are briefly described in 62 countries, nine cultural dimensions have been identified to distinguish one society from another and have important managerial implications [39]. These dimensions are analyzed in the following sections:

<table>
<thead>
<tr>
<th>Power Distance (PD)</th>
<th>In this society, children live with parents until they get married.</th>
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</thead>
<tbody>
<tr>
<td>Assertiveness</td>
<td>People should be generally dominant.</td>
</tr>
<tr>
<td>Gender Egalitarianism</td>
<td>Boys are encouraged more than girls to attain a higher education.</td>
</tr>
<tr>
<td>Future Orientation</td>
<td>More people should live for the present than for the future.</td>
</tr>
<tr>
<td>Performance Orientation</td>
<td>Individuals should be encouraged to strive for continuously improved performance.</td>
</tr>
</tbody>
</table>

Similar to what Hofstede stated for national culture, organizational culture can also be divided into three main layers. They are; values at strategic level including missions and objectives, beliefs and norms of employees at tactical level, and aspects of organizational life at operational level [38].

In this paper, for exploring the impact of organizational culture on BITA, we rely on the Global Leadership and Organizational Behavior Effectiveness research project (GLOBE) [32]. GLOBE is a multi-phase and multi-method research program that has been designed to understand the relationship between culture and business. The project examined national culture to show the influence of organizational and societal culture on accepted leadership and working effectiveness by organizations. Based on the work of 170 researchers who have collected data over seven years on culture value and practices and leadership attributes from 18,000 managers in 62 countries, nine cultural dimensions have been identified to distinguish one society from another and have important managerial implications [39]. These dimensions are briefly described in Table 2.

### 5 Organizational Culture Impact on Business-IT Alignment

Over the years, different studies have shown a clear impact of organizational culture on business performance [40, 41, 42]. Others have studied its impact on how IT is perceived and practiced in different contexts [7, 43, 44]. As BITA has a direct relation with business and IT strategies, the impact of organizational culture on BITA is apparent. However, this impact is not analyzed in studies of BITA and its components [5].

In this section, we present the analysis of organizational cultural impact on BITA. For this, we briefly describe each criterion of LAM’s six criteria and how it is affected by the organizational culture in. For each criterion, we examine reflections of the GLOBE’s nine cultural dimensions. Hypothetically, we expect to find at least one existing reflection of each cultural dimension on each LAM’s criterion. With the help of LAM’s attributes in each criterion, more various interesting relations have been addressed between GLOBE’s dimensions and LAM’s criteria. These relations are analyzed in the following sections:

<table>
<thead>
<tr>
<th>In-Group Collectivism</th>
<th>The degree to which individuals have strong ties to their small immediate groups.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assertiveness</td>
<td>The degree to which individuals are assertive, dominant &amp; demanding in their relationships with.</td>
</tr>
<tr>
<td>Gender Egalitarianism</td>
<td>The degree to which a collective minimizes gender inequality.</td>
</tr>
<tr>
<td>Future Orientation</td>
<td>The extent to which a collective encourages &amp; rewards future-oriented behaviors (delaying gratification, planning &amp; investing in future, etc.)</td>
</tr>
<tr>
<td>Performance Orientation</td>
<td>The degree to which a collective encourages &amp; rewards group members for performance improvement &amp; excellence.</td>
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</tbody>
</table>

Power Distance (PD). Based on findings of House et al. [45], it can be concluded that high PD score indicates that individuals distinguish in their work with other colleagues, including managers, according to the power and status they have. Individuals are expected to obey superiors. Following findings of Sornes et al. [37], low PD score indicates close relationships between different hierarchical levels, and surrounds the environment by less formalized and less intensive conditions that are expected to have both higher Communications and Partnership Maturity. However, such environment does not require high level of transparency, value measurement or metrics for IT and business. This affects Competency/Value Measurements Maturity and attaches less formalized Governance processes lowering their Maturity.

In organizations with high PD scores, architecture transparency and changes of procedures are clearly limited with rigid conditions. Additionally, process integration might vary from one project to another based on PD. It is, therefore, expected to relate high PD with less Scope & Architecture Maturity. Low PD score encourages individuals to take initiatives and development steps in pressure-free environment. Thus, it is expected to result in a high Skills Maturity.

Uncertainty Avoidance (UA). Following the findings of House et al. [45], high UA score may result in high tendency towards certainty. This does not stimulate informal communications or sufficient transparency between business and IT domains (lower Communication and Partnership Maturity). However, it stimulates value and consistency measurements (higher Competency/Value Measurements), and creates structured rules and laws to govern (higher Governance Maturity). According to findings of Cardon & Marshall [46], high score of UA leads to certain and secured system establishment with strong architectures and slower rate of adopting technology (higher Scope & Architecture Maturity). However, it limits flexibility and functional integrations (lower Maturity). High UA is also expected to have definite command and control management style within IT and business domains. This decreases motivation of individuals’ towards learning and developing (lower Skills Maturity) as found by Livonen et al. [47].

Humane Orientation (HO). Following the findings of Javidan & Dastmalchian [48], organizations in human-oriented societies highly consider human relations, support and sympathy for others which creates informal communications and close relationships resulting in
higher Communications and Partnerships Maturity. Other findings of House et al. [45] indicate that in such humane environment, people tend to help others in tasks with feeling as societal obligation. Governance components in such context are affected and expected to result in lower Maturity. Consequently, formal assessments, evaluations and metrics are neither effectively nor accurately used resulting in lower Competency/Value Measurements Maturity. Organizations in low HO, however, emphasize more on self-orientations development and evaluations. Assessing individuals is important for such organizations to plan for individuals’ career and rewards. Interactions, transparency and flexibility of architecture are easier in such organizations than humane-oriented ones. It can be expected that low score of HO is attached to higher Scope & Architecture and Skills Maturity.

Institutional Collectivism (In.C). Organizations in collective societies tend to emphasize and encourage group harmony and cooperation Javidan & Dastmalchian [48]. Group achievements, collective tasks and strong planning prevail individual tasks Veiga [49]. It is expected that high In.C may result in higher Partnership and Governance Maturity. Collective characters are appreciated to cause success and integrations than individual ones. This may result in higher Scope & Architecture Maturity Silvius et al. [5]. In high individualistic societies, organizations tend to value task-orientated communications and cooperation (higher Communications Maturity), reward individuals’ performance and values (higher Competency/Value Measurements Maturity) Veiga [49]. Self-interest and individuals’ freedom, in high individualistic organizations, gives openness for change and career development that may result in higher Skills Maturity; and provides highly reported and structured tasks that higher Governance Maturity.

In-Group Collectivism (GC). In organizations belong to societies with high GC score, very close relationships with informal protocols are facilitated between members of in-groups. Out-groups are not involved in these processes which is expected to cause lower Communications Maturity, as found by Javidan and Carl [50]. In Competency/Value Measurements, Governance and Architecture, no reflection is found in literatures to indicate how GC impacts their maturity. According to House et al. [45], high GC leads to group harmony, as extended families to members, with shared goals, ideas and even risks (higher Partnerships Maturity is expected). Spending much time together, encouraging each other’s careers and helping in informal education lead to increasing affiliation to organization and cross training (higher Skills Maturity)

Assertiveness (ASS). Findings of Dastmalchian et al. [51] relate high ASS level with individuals’ tendency to be more independent and self-confident. This surrounds the environment with competitive components and sympathy for the stronger and the winner. It is therefore suitable for formal assessment, evaluation and performance metrics. It is then expected that high ASS results in high Skills and Competency /Value Measurements Maturity. In this environment, individuals have tendency to follow structures, planning, reporting systems and prioritized actions which expected to result in higher Governance Maturity. In findings of House et al. [45], transparency as well as flexibility and integration of Scope & Architecture are, however, limited because of assertive behavior of individuals and lack of cooperative environment lowering the Maturity level. Organizations in low ASS societies tend to encourage informal communication and cooperative relationships. Loyalty and harmony are important for transparent and trustful environment. This is expected to cause higher Maturity for Communications and Partnership.

Gender Egalitarianism (GE). As found by Javidan and Carl, 2005 [50], organizations that operate in high GE societies tend to motivate towards diversity of ideas, individuals and skills which cause higher Skills Maturity. Higher Skills and Governance Maturity may also be expected in male-oriented societies as high orientation on work and material success Hofstede [33]. With high GE score, it is expected that smoother and two-ways communications can be facilitated rather than a one-way style of low GE score (higher Communications Maturity). With high assertiveness additional to focus on work and material success, organizations in male-oriented societies, are expected to have more assessment, evaluation and standards in work, and hence higher Competency/Value Measurements Maturity Sørnes et al. [37]. In such organizations, individual performance and success are appreciated which is expected to cause lower Scope & Architecture Maturity Silvius et al. [5]. High GE, however, does not allow people to only seek assertively after their career and individual success which results in higher Partnership Maturity.

Future Orientation (FO). Based on findings of Javidan and Dastmalchian [48], organizations in societies with high FO tend to have more structured planning, working style, knowledge sharing and reporting systems. That indicates support for higher Communications and Governance Maturity. To serve their long-term horizon, these organizations tend to develop different metrics for assessing performance and continuous improvements (higher Competency /Value Measurements Maturity). In such organizations, findings of House et al. [45] also indicate more involvement of individuals in future-oriented actions and decisions. They tend to base their future on trustful and transparent processes which may result in higher Partnership Maturity. However, future decisions might affect stability of current Scope & Architectures resulting in lower Maturity. Additionally, with future-oriented vision, individuals are more innovative and motivated for their career development and education. That can result in higher Skills Maturity. At the same time, openness for seeking careers gives less affiliation and trusting environment attached with lower Maturity.

Performance Orientation (PO). Organizations in PO oriented societies tend to focus on individuals’
performance rather than good relations between them. Based on findings of Walls [52], it can be concluded that formal relationships and separation between business and IT domains are expected in such organizations because managers expect high quality outputs from individuals, which result in lower Communications Maturity. Insufficient transparency and sharing visions are attached as well, which result in lower Partnership Maturity. In such environment, it is important for managers to have different metrics, benchmarking and formal assessments to ensure high performance and outcomes. Higher Competency/Value Measurements Maturity is therefore expected. While high PO score enables organizations for strategic planning, structured reporting and tasks (higher Governance Maturity), it may lead to structured Architectures and defined Scope (higher Maturity) but in less transparency and flexibility (Lower Maturity) as found by Birgelen et al. [53]. In performance oriented organizations, individuals’ training and development are encouraged, innovations are strongly appreciated which indicate higher Skills Maturity.

6. Results and Analysis

In this section, we present results in both companies based on the LAM’s six criteria in subsections 6.1 and 6.2 followed by 6.3 for the comparative analysis.

6.1. Company-A (Egypt)

Communications. As a result of high power distance in the Egyptian style of work, people do not have a close relationship with their hierarchical levels. Additionally, uncertainty avoidance scores one of the lowest globally mainly because of uncertain economic and political situations. Thus, communication is formalized and less matured. As an under development country, IT is seen in Egypt as the future. Business executives recognize IT as an important partner in their success. However, they dominate all decisions regarding new technologies, solutions or resources. Therefore, understanding of IT by business is higher compared to understanding of business by IT. Regular meetings between the two business and IT domains are limited at strategic level. The environment lacks trust especially at tactical and operation levels.

There is a noticed trend in the company for encouraging group working style and cooperation as required for synergistic results. However, the high performance orientation hinders transparency in sharing knowledge and hence, communication maturity is lowered. With moderate future orientation, affected by uncertain conditions and high human orientation, communication is done in unstructured way which decreases communication maturity. Additionally, information is not available for reuse which affects the overall analysis and evaluation of company’s business.

Competency/Value Measurements. There is a clear separation between business and IT departments due to domination of high performance orientation and low uncertainty avoidance in the society. IT unit is also separated in internal and external services. IT metrics in such context provide concrete analysis of both inbound and outbound (customer and supplier related issues) performance. Business metrics are, however, dominating to evaluate issues like purchasing statistics, customer satisfaction and importance of IT services.

Affected by performance orientation, there is only control and review over business metrics without formal feedback over efficiency of IT metrics. As humanity plays vital role at organizational level, a clear effect is highlighted from high human orientation as well as high power distance. Therefore, changes and rules are expected to be ordered from bosses and human aspects. Additionally, benchmarking and formal assessment might not similarly followed from worker to another inside the organization which negatively affects maturity of competency/value measurements.

Governance. Characterized by high uncertainty, strategic planning is usually done for maximum two-three years in both business and IT domains. The high power distance makes more formalized, rather than close, relationships at different hierarchical levels. This negatively affects governance maturity. To avoid the high uncertainty, there is a clear profile for formalized rules for reporting systems, investment management prioritizing processes and steering committees. However, both high human and performance orientation supports for informal relations especially between close, but not competitor, persons. As a result, governance maturity is balanced.

Partnership. Domination of high uncertainty leads to delegating decision power to business executives with full responsibility for driving transformation in the company. IT only enables changes in processes. This situation does not provide a seat for the CIO in the company’s executive board. IT strategies and projects are not prioritized. Future directions and new business areas are explored by only business managers. High power distance, with high performance orientation, clearly reflects insufficient transparency not only between the two domains, business and IT, but also inside each domain. As a result, IT is seen as a separated supportive unit rather than a partner.

Scope and Architecture. IT does not have leadership position; but it applies standards across organization to be integrated with organizational structure according to business needs. Therefore, the company achieves sufficient flexibility regarding business plans and goals. High uncertainty, however, does not enable for a very flexible architecture even different scaled changes are always required. Adoption of a change is very difficult process as requires wise pre-thinking and evaluations.

Transparency of the architecture and changes in procedures are clearly affected by high power distance and performance orientation. Rigid conditions on architecture hinder flexibility that is needed in most of tasks. Additionally, different changes and process integrations might vary from one project to another based on high power distance and human orientation.

Skills. With high human orientation, individuals are appreciated for skills development. High performance
orientation forces them to develop their skills and search for more development chances. However, performance orientation is always affected by high power distance and gender differentiation that cause unfair motivation and rewarding for individuals.

Possibilities of training and changing are always there and provided by managers in performance oriented environment. However, individuals are eager to develop faster and catch as much as they can as they feel uncertain environment and conditions. The case is not the same for all. The society in general scores one of the highest in-group collectivism globally. Those who find the company suitable for their life conditions, it is very difficult for them to change and they are seen highly affiliated to their job and they consider the company as their second home.

6.2. Company-B (Sweden):

Communications. Low future orientation gives more stability to both business and IT domains. Additionally, Sweden owns one of the highest scores in avoiding uncertainty supported by social supportive government. In that sense, people work in a more static environment without uncertainty in their job conditions. That helps to facilitate very clear strategies and to apply feasible standards for sharing knowledge. The company’s goals and objectives are clear for people in both domains. That reflects a very good understanding level of business by IT and understanding of IT by business.

The low assertive behavior of people causes the two units to work effectively towards inter/intra cooperative context. This creates supportive learning environment without pressures. Additionally, and supported by low power distance, workers from both business and IT do not find any competition or inconvenient issues to communicate. Instead, they practice informal relationships between top managers and employees, thus, environment is highlighted by very good communications and relationships that make knowledge sharing easier.

Sweden is highlighted globally as one of the highest countries in Institutional collectivism. Throughout all of our study phases and interviews, we have noticed a high encouragement for group cooperation rather than individual achievements. Communications through internal seminars, project forums and even two daily coffee breaks are encouraged and supported. However, the Swedish relaxed working system, small number of staff and allowance for long maternity leave affect meeting times between employees and following up processes.

Communications between business and IT domains at the strategic and tactical levels is organized and performed in a semi-structure way. Therefore, different types of data are utilized for analysis and evaluation. Competency/Value Measurements. Business and IT metrics are developed in the company. However, the high uncertainty avoidance, complemented by relaxed social system and health services, causes low future orientation that consequently causes inefficient use of metrics. While, established IT metrics are used for evaluating extent of provided services to different business functions, business metrics are used to ensure avoiding uncertainty in jobs and future career.

They believe in the IT need as; it is ever changing, the need for high quality and processing software, and as a part of their core business functions. However, affected by moderate low performance orientation, there is only control and review over business metrics. There is a clear lack of any formal assessment or review over IT metrics or people performance. People work in their individual tasks inside their teams or projects. As soon as a certain iteration or task is completed, it is made visible and communicated to the whole team for further processes.

Governance. During all interview, the clear effort of top executives in both domains, for their strategic planning, has been appreciated. However, IT strategic planning is more clear, understood and followed than that of business. Low future orientation of people makes them interested only to finish their tasks as they should be. They are not interested at all in understanding business strategies. As an IT-related organization, the company has very developed physical and non-physical infrastructures. People are seen to avoid uncertainty by understanding IT development and strategic planning. Especially IT people, they all rely on business people for driving the company.

As a federal organization, the company applies federal organizational structure that allows for flexible strategies. Conforming to low assertiveness and power distance, the company has a clear flat organizational structure. This facilitates high level of transparency and leads to an accountability for outcomes of IT projects. Thus, a clear support for institutional collectivism is guaranteed as well.

Partnership. The CIO has a seat in the executive board and plays an important role for driving the company towards different transformations in structure and processes. Additional to that, IT top managers stand in a leadership positions and accept to share responsibility with business executives when it is about taking risks. What makes contradiction to that is that IT strategies and projects are not prioritized although IT is seen as a partner rather than a supportive tool. Future directions and new business areas are explored by only business executives.

To avoid uncertainty, only business people take the full responsibility for risks as they consider that it is their duty to keep their business running especially in current global economic crisis. This gives an insufficient transparency for workers. The effort for making a better environment for trust is clear as humanity is an important character of Swedish business. For that purpose, the lower power distance and high collectivism supports for more intensive, closer relations, less formalized, and as a result richer transparent communication.

Scope and Architecture. Due to the importance of avoiding uncertainty, business people dominate external relations of the company including those with suppliers and customers. Nevertheless, IT applies standards across the organization but no formal integration with the organizational structure. The high uncertainty avoidance highly supports for creating a very stable architectural system with high security and wise thinking before
changes to new technologies. So, it clear understood to find sufficient/not high flexibility of IT infrastructure with sufficient integration within all business level. The Swedish CIO says “We need to be more rationalize and efficient in using IT. We are in deep need to manage our resources, people and organization”

On the other hand, with a high score in collectivism, there is an informal integration to be applied at the functional processes especially during important projects. This informal integration, supported by low power distance, allows for exchanging experiences, applying new technologies, improving business processes and providing customized solutions.

Skills. Skills of people in the company are highly matured clearly affected by the low assertiveness and low power distance. That is because people take initiatives in their work in a pressure-free environment. However, the high uncertainty avoidance and low future orientation affect the learning of some employees especially in the business domain. Additionally, and because of different specializations, cross training is not supported which affects affiliation of people.

Moderate high human orientation in the company results in an appreciation of individual skills development. Additional to that, with high score of collectivism, people are eager to share knowledge and experiences. This is supported by the company’s facilitation of training programs, seminars, and lectures on virtual campus. The society in general scores low in in-group collectivism. This makes it easy for people to change their work frequently which highlights a low level of affiliation and attachment of people to businesses.

6.3. Comparative Analysis

In this section, we analyze the findings of our study. Table 2 summaries our results for the impact of the nine cultural dimensions on the six criteria of BITA maturity. As there is no room to discuss all the 54 cells over the two companies, we discuss only the most interesting ones in sense of high impact or unexpected results. The discussed cells are represented in ‘Grey’ shading in Table 3. The table presents the explored impact of cultural dimensions in different symbols; ‘H+’ for high positive impact, ‘H-’ for high negative impact, ‘L+’ for low positive impact, ‘L-’ for low negative impact and ‘---’ for no clear impact. In a few dimensions, our findings show positive and negative impacts at the same time but in different conditions (e.g., In.C on Governance, GC on Skills). For this situation we give the (+) symbol as shown in Table 3.

Communications. (Power Distance (PD), Institutional Collectivism (In.C), Assertiveness (ASS), and Performance Orientation (PO)). PD, in Company-A, scores higher than Company-B. However, PD in Company-A has a strong impact on increasing the score of ASS that makes people demand more on their relationship to be on the safe side of their bosses’ blames. Although, In.C scores lower in Company-A, but In.C has a positive impact on communication maturity in both companies. In Company-A, the higher PD makes formal methods and structure for collective (In.C) working style which provides structured communications. But, with low PD in Company-B supported by low ASS and high In.C, communications are organized and matured smoothly. Other human interaction related dimensions (PO and HO) have a clear impact, especially in Company-A, on communications maturity. We can relate that to the higher PD which influences the communications style and work structure trying to avoid high uncertain conditions.

Table 3. Organizational Culture Impact on BITA Maturity

<table>
<thead>
<tr>
<th>Cultural Dimension</th>
<th>Company</th>
<th>ASS</th>
<th>FO</th>
<th>PO</th>
<th>GE</th>
<th>UA</th>
<th>PD</th>
<th>In. C</th>
<th>GC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communications</td>
<td>A</td>
<td>-L</td>
<td>+H</td>
<td>-H</td>
<td>-L</td>
<td>-L</td>
<td>-H</td>
<td>+L</td>
<td>-L</td>
</tr>
<tr>
<td></td>
<td>B</td>
<td>+L</td>
<td>-H</td>
<td>+L</td>
<td>+L</td>
<td>+H</td>
<td>+L</td>
<td>-H</td>
<td>+L</td>
</tr>
<tr>
<td>Competency-Value</td>
<td>A</td>
<td>-L</td>
<td>+L</td>
<td>-H</td>
<td>-L</td>
<td>-H</td>
<td>-L</td>
<td>-L</td>
<td>-L</td>
</tr>
<tr>
<td>Measurements</td>
<td>B</td>
<td>+L</td>
<td>-L</td>
<td>+H</td>
<td>+L</td>
<td>+L</td>
<td>+L</td>
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</tr>
<tr>
<td>Governance</td>
<td>A</td>
<td>-L</td>
<td>+L</td>
<td>-H</td>
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<tr>
<td>Partnership</td>
<td>A</td>
<td>-L</td>
<td>+L</td>
<td>+L</td>
<td>-L</td>
<td>-L</td>
<td>-L</td>
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<tr>
<td>Scope and Architecture</td>
<td>A</td>
<td>-L</td>
<td>+L</td>
<td>+H</td>
<td>+L</td>
<td>+L</td>
<td>+L</td>
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<td></td>
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<td>Skills</td>
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</tbody>
</table>

Ass = Assertiveness, FO = Future Orientation, PO = Performance Orientation, HO = Human Orientation, GE = Gender Egalitarianism, UA = Uncertainty Avoidance, PD = Power Distance, In.C = Institutional Collectivism and GC = In-Group Collectivism.

Competency/Value Measurements. (Uncertainty Avoidance (UA), Power Distance (PD), Future Orientation (FO), and Institutional Collectivism (In.C)). Company-A is surrounded by uncertain conditions due to economic and political situations. This creates a competitive and uncomfortable environment. People, do not see means for designed values, metrics and measurements of effectiveness as they are unstable to certain limit. While, the high UA in Company-B gives more stability and confidence on competency, values and metrics. However, with a low score in FO, people do not fully follow these metrics or benefit from them.

The higher PD in Company-A gives more requirements and formality of procedures, tasks, evaluations and reporting systems than in Company-B. it is therefore maturity of competency/value measurements is negatively affected in latter company by low PD.

Governance. (Performance Orientation (PO), Human Orientation (HO), Uncertainty Avoidance (UA), Future Orientation (FO) and Power Distance (PD)). PD, linked with high uncertainty, has both high positive and negative impacts on governance in Company-A. Although, formal structure and rigid rules by bosses design ways for governance, but they create inflexible hierarchical levels that hinder the smooth governance. In Company-B, lower scores of PD and FO give a suitable environment of relaxed matured strategic planning, reporting and wise decisions for prioritization.
In both companies, there are opposite impacts of PO and HO. While a high score of PO in Company-A negatively supports more competitive than a cooperative environment, the high HO positively gives potentials for informal governance processes. In Company-B, while a low score of PO negatively affect quality control over planning and reporting, the high HO positively affect on individuals’ governance processes.

Partnership. (Future Orientation (FO), Uncertainty Avoidance (UA), and Institutional Collectivism (In.C)). While the score of FO is clearly higher in Company-A than Company-B, it has a negative impact on partnership maturity in both companies. Similarly, UA score is much higher in Company-B than in Company-A, however it has also a negative impact on partnership maturity in both companies. In Company-A, future planning connected with high uncertainty is controlled by business people without transparent processes. That is why IT is not exploit as it should be. In Company-B, stable image about future and very low effect of uncertain conditions have led to an inactive partnership.

Scope and Architecture. (Uncertainty Avoidance (UA) and Power Distance (PD)). While high uncertainty in Company-A limits flexibility of architecture, the very low uncertainty in Company-B is related to high tendency for secured systems, architectures, and wise adoption of new technologies. UA is clearly supported in Company-A by the high score of PD for negatively affecting the scope and architecture maturity, whereas low score of PD support in company-B supports the scope and architecture maturity. On the other hand, individual characteristics in their assertiveness and future orientation positively affect the maturity in Company-A rather than Company-B.

Skills. (Uncertainty Avoidance (UA), Future Orientation, Gender Egalitarianism (GE), and In-Group Collectivism (GC)). The low score of UA in Company-B is related to high uncertainty for secured systems, architectures, and wise adoption of new technologies. UA is clearly supported in Company-A by the high score of PD for negatively affecting the scope and architecture maturity, whereas low score of PD support in company-B supports the scope and architecture maturity. On the other hand, individual characteristics in their assertiveness and future orientation positively affect the maturity in Company-A rather than Company-B.

Figure 2. BITA Maturity Assessment

7. Conclusions

In Figure 2 we show the results of the assessment of BITA maturity in the two companies A and B or the multinational organization. Although both companies have similar strategic business and IT guidelines from their headquarters, but a clear difference is shown in the measurements of BITA criteria. The highest difference (figure 2) is shown in communication, partnership and skills. In communication maturity, the difference is related to differences in understanding the IT importance and the benefit of knowledge sharing all across organizational levels. That is clearly affected by cultural dimensions in the companies. In partnership maturity, the difference is not related directly to the perception of IT value and its role in strategic business planning. It is, however, more related to facilitating this perception. This facilitation additional to trust between both business and IT domains is influenced by the organizational culture. In skills maturity, the difference is related to the work conditions under clear organizational cultural impacts.

Conclusions from this study can be summarized as:

1. The research in BITA and its maturity measurement is an ongoing process. Different factors that have a clear impact on BITA are not well studied and examined yet like is for example organizational cultural that shows to be one of the factors that have a direct relation to most of BITA components.
2. The main concern for BITA is how it can be achieved and matured. Therefore, different BITA models that measure its maturity should be clearly adjusted or linked with cultural dimensions when implemented in different cultural contexts.
3. Complexity in analyzing organizational cultural impact on maturity of BITA is due to the complex relationships between cultural dimensions, and different impacts from the same cultural dimension at the same time.
References


