IT Governance in Multi-Business Organizations: Performance Impacts and Levers from Processes, Structures, and Relational Mechanisms

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Abstract

IT governance is more than ever recognized as a panacea by IT managers to ensure effective and efficient IT operation in multi-business organizations. The aim of this paper is to analyze the performance impact of IT governance. In order to do so, the study takes the resource-based perspective, and integrates the economic theory of complementarities and the concept of relatedness. The proposed increase in business process performance is grounded in the generation of sustainable competitive advantage. The framework is investigated by using five exploratory case studies in multi-business organizations. The results suggest that IT governance is positively related to business process performance through the mediators of IT relatedness and business process relatedness. Furthermore, IT governance levers have been identified which might significantly increase business process performance.

1. Introduction

Generally, IT expenses represent up to 15% of corporate turnover [21]. Analysis of worldwide IT expenditures over the last decade reveals continuous yearly growth. For 2012, analysts expect that worldwide IT expenditures will increase by between 3.7% and 6.9% over the 2011 figures [21, 46]. Furthermore, the great debate about the IT productivity paradox and the contribution of IT to firm performance has become more muted [9, 16, 28, 39, 48, 50, 51, 56] since IT has been widely accepted as crucial for the support, sustainability and development of businesses [57]. In reaction to a number of major corporate and accounting scandals, including those affecting global companies such as Enron, Worldcom and Tyco International, the Sarbanes-Oxley Act (SOX) was passed by the United States (U.S.) government [42]. With the passing of the SOX in the U.S. in 2002 and various European approaches, such as the German Corporate Governance Code, the topic of corporate governance has become one of the major issues for both the academic and the business worlds [6]. In addition to the previously discussed compliance issues, there have been numerous spectacular failures of large IT investments in recent years, such as uncompleted enterprise resource planning (ERP) systems, ill-conceived or poorly executed e-business initiatives and newly developed systems which have never been used effectively [13, 62]. Consequently, an ever-increasing corporate focus on ensuring prudent returns on technology investments has been established by numerous companies [6]. Since enterprise-wide business processes, enabled by IT support, process-orientation and enhanced outsourcing of IT activities, require more integration and communication within a single company as well as in strategic partnerships, lack of transparency and interface issues represent typical risk factors in this context [29].

In view of the foregoing, a concept is needed which allows firms to achieve returns above the industry average on their IT investments. The concept should provide a control framework for IT in terms of value creation, and for making IT decisions more consistently [62]. Also, lack of transparency and interface issues should be mitigated [29]. The successful implementation of business-IT alignment (BITA), coordinated by IT governance (ITG), should be able to fulfill these requirements, according to Weill, by “specifying the framework for decision rights and accountabilities to encourage desirable behavior in the use of IT” [60]. Hence the notion of ITG has become a major issue for both business practitioners and academics [6], and researchers have examined the relationship between ITG, BITA and firms’ performance. Some claim a positive relationship between ITG and BITA [15, 24, 47], which in turn has a positive influence on business performance [11, 43]. However, there is dissension within this research stream, since other researchers do not agree that these relationships exist, and the entire BITA concept is highly complex and still under discussion [10, 49]. BITA is not the only desired effect of ITG which has a positive impact on business performance, and therefore the relationship between ITG and business performance should be analyzed independently of the very complex concept of BITA [22]. Hence, we...
decided to consider BITA as an independent research field and, instead, to follow another research stream.

The association between IT and business performance calls for further investigation [28, 52, 53]. Starting from the resource-based view of firms [27, 28], the economic theory of complementarities [31], and the concept of relatedness [8, 14], a positive relationship between IT relatedness and business performance was posited [52]. This approach was extended to form a theoretical framework for analyzing and explaining the relationship between ITG [15] and business performance [43] without incorporating a detour via the BITA concept [22]. We position the mediators IT relatedness [52] and business process relatedness between ITG and business performance. Further research is required to revise and verify the quality of the research framework. It is, therefore, of major importance to answer the following research questions:

(RQ.1) How are IT governance, resource relatedness and business performance associated?

(RQ.2) What are the IT governance levers in multi-business organizations which will increase business process performance?

In order to answer both research questions, this exploratory study conducts an in-depth literature analysis, forms a theoretical framework, and evaluates qualitative data from case studies of five multi-business firms. The research is focused on multi-business firms because they have significantly more synergy potential than single-business firms [52].

2. Theoretical background

2.1. IT governance

IT governance has been hotly debated in the extant literature in the last few years, resulting in numerous research streams [6]. While its origins can be traced back to corporate governance and strategic information systems planning [59], scholarly literature has focused on two streams [6]: the locus of decision-making structures [7, 45], and contingency analysis [44, 61]. However, despite the practical value of such research, the results and models which have been developed are mostly descriptive and hence lack depth in their theoretical background [22]. Exceptions are the BITA-centric models that consider the association with ITG and business performance. Numerous researchers claim that ITG and BITA [15, 24, 47] are positively associated, and that this in turn has a positive influence on business performance [11, 43]. However, ITG is only one out of six factors influencing BITA [24], and hence the implications remain pretty limited [22]. In addition, there is still disagreement about the definition of BITA [10, 49].

Another term that is hard to define is IT business value (ITBV), which has been one of the most discussed topics within IS literature in the last two decades. The value of IT, or, in other words, the contribution of IT to business performance, has been studied by academics mainly from two distinct perspectives: the market-oriented perspective and the resource-based view of the firm (RBV) [40]. Within the first paradigm, and based on Porter’s competitive strategy framework [36], IT is classified as a means of altering the competitive forces that collectively determine industry profitability [37], either by lowering cost or by enhancing differentiation. The second perspective regards the firm as a bundle of resources which include assets, humans, knowledge and processes. The RBV is based on the fundamental assertion that resources can be heterogeneously distributed among competitors, and that some of these resources are imperfectly mobile and thus can provide sustainable competitive advantage [2, 27]. ITBV scholars have studied IT resources from the RBV, and conclude that the value is created not directly but through the mediation of strongly related and complementary resources [27, 28]. In particular, the enhancement of business processes presents a critical mediating effect [28]. The growth of a firm is associated with the identification and usage of the appropriate resources [32, 40]. Selecting, coordinating and managing resources such as business processes [2] and IT [27] are governance activities.

2.2. Resource relatedness and performance effects

When we extend our scope from an individual firm to a multi-business firm, the subject of our investigation changes considerably. The RBV provides the economic foundation for the multi-business firm, as it clearly points out that strategic interrelations – known as synergies – among business units positively affect organizational performance [33, 41, 55]. Multi-business firms have significantly more synergy potential than single-business firms [52], since they rely on economies of scope [54]. The literature in the fields of strategy and economics defines the concept of synergies in terms of super-additive value synergies or sub-additive cost synergies. While super-additive value synergies arise if the joint value of business unit (a) and business unit (b) is greater than the sum of their standalone values [14], sub-additive cost synergies occur when sharing common factors of production
reduces the joint production costs of the individual business units [54, 55]. Whenever synergies exist among different business units, it is a key proposition of strategic management scholars that those synergies increase the overall value of the multi-business firm [20]. Nevertheless, these conceptualizations have turned out to be problematic for the examination of the direct link between synergy and organizational performance, since synergy is defined by its outcomes as super-additive value or sub-additive costs. When both synergy and performance are defined in terms of outcomes, a tautology occurs: if synergies exist, they are observable as super-additive value or sub-additive costs. However, this formulation represents the definition of a synergy [53]. Focusing on the sources of synergy instead of the synergy itself helps to avoid the problem [14]. The most prevalent source of synergy in multi-business firms is resource relatedness [53], which refers to the presence of similar activities and shared resources across business units in the firm [14]. Based on the groundwork of the RBV, researchers claim that the sharing of strategic resources across business units generates cross-business resource-based synergies, and that these in turn improve organizational performance [19, 26, 41]. Although the sharing of mutually independent resources allows firms' costs to be sub-additive, this sharing is not sufficient to achieve super-additive values. The concept of resource relatedness cannot adequately capture the super-additive value dimension of the resource combinations. Hence, we apply the theory of complementarities (TOC); this defines a set of resources to be complementary when the possession of one resource increases the returns from the other resources [30]. In other words, sub-additive costs deriving from relatedness are imitable, and can only lead to temporary competitive advantage. Super-additive values from a complementary set of resources with high relatedness, however, are imperfectly mobile and hence not easily imitable; therefore, they are a potential source of sustainable competitive advantage.

Emerging conflicts have to be managed in order to achieve superior business performance through IT resources [53]. IT relatedness is a source of cross-unit IT synergy and has a direct impact on organizational performance, but it also allows the exploitation of cross-unit business synergies, e.g. IT relatedness has indirect effects on organizational performance through the mediation of cross-unit capabilities. IT relatedness is defined as “the extent to which a multi-business firm uses common IT resources and common IT management processes across its business units” [52]. The IT relatedness construct comprises a parsimonious set of IT resources for conceptualization that can be traced back to the ITBV literature [58] and that is linked to the relatedness concept. Shared tangible resources refer to the deployment of a common IT infrastructure across business units. Coordinated strategies correspond to the deployment of a common IT infrastructure across business units. Coordinated strategies correspond to the deployment of a common IT infrastructure across business units. Pooled negotiating power can be achieved when relationships with IT vendors are coordinated. Shared know-how is advantageous when employees’ common IT skills and knowledge can be distributed across business units. Examining the relationship between IT relatedness and corporate performance, scholarly literature shows that the relatedness of single IT resources leads to sub-additive costs, while the relatedness of complementary IT resources additionally generates super-additive value and thus increases business performance [52]. These findings are in line with previous research on resource relatedness and complementarities [30]. Tying together these lines of argument, the definition of business process relatedness can be derived from resource relatedness [22] in terms of “the extent to which a multi-business firm uses common business processes across its business units”.

Figure 1. Research model
3. Research approach

3.1. Research model

The stringent literature review in the field of ITG points to the fact that the model of structures, processes, and relational mechanisms [15] is best suited to guide the research process. This model is concrete, relates to the fundamental body of knowledge, and fits with the theoretical lens of the RBV. Once the necessary information and decision structures are available, the harmonization and consolidation of the IT landscape and IT management procedures is only a matter of time [22]. Hence, we propose a positive association between ITG and IT relatedness (see Figure 1). According to the RBV, business processes are regarded as corporate resources [2]. Since we can observe strong interrelationships between IT and business processes [4, 28, 37], we integrated business process relatedness as a second mediating construct. Business processes are defined as “the specific ordering of work activities across time and space, with a beginning, an end, and clearly identified inputs and outputs” [12]. The relatedness of single IT-dimensions can lead to sub-additive cost synergies that are imitable and hence not sustainable. A complementary set of related resources can achieve super-additive value synergies that are associated with sustained competitive advantage and an increase in performance [3]. It is argued that an increase in performance is linked to the generation of sustained competitive advantage [43]. However, in our investigation, we focused on the performance effects of business processes [28]. Following the extant literature, harmonizing business processes is attended by improved business performance or improved organizational performance respectively [23, 25, 38, 63]. To sum up, we employed well-established constructs (see Table 1).

3.2. Research design

In order to analyze the association between ITG, resource relatedness and business process performance (RQ.1), and to identify the levers for the performance impacts of ITG (RQ.2), we applied a qualitative research design based on a multiple case study approach [17].

An exploratory and qualitative case study research method is appropriate for theory-building, as it leads to a better understanding of the complex phenomena which are under investigation. Scholarly literature emphasizes the benefits of the multiple case study approach in terms of enhanced validity [18]. Furthermore, multiple researchers can improve the creative potential, while the convergence of observations strengthens confidence in the findings [17]. However, it is also an established research design for qualitative research within the area of IS [5, 64]. As the unit of analysis we took an organization that implements ITG. For multiple case studies, four to ten cases are suggested [17]; we took five cases into consideration and are thereby in line with this recommendation.

<table>
<thead>
<tr>
<th>Table 1. Research model constructs</th>
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<tr>
<td><strong>Construct</strong></td>
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<tr>
<td>IT governance - Processes [34, 35]</td>
</tr>
<tr>
<td>IT governance - Structures [34, 35]</td>
</tr>
<tr>
<td>IT governance - Relational mechanisms [34, 35]</td>
</tr>
<tr>
<td>Resource relatedness [14]</td>
</tr>
<tr>
<td>IT relatedness [14, 52]</td>
</tr>
<tr>
<td>Business process performance [28]</td>
</tr>
<tr>
<td>Organizational performance [28, 43]</td>
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Over a period of six months, from January 2010 to June 2010, we conducted five exploratory case studies in global multi-business firms (for details of the case companies, see Table 2). The firms were initially selected based on an analysis of their corporate balance.
sheet report. Only corporations with a diversified multi-business structure were selected, due to the fact that they have significant potential for economies of scope and hence relatedness [52].

Data were mainly collected by expert interviews which were guided by a semi-structured questionnaire. The questions were derived from established ITG theoretical constructs (inter alia those in [15, 52]). Further, the questionnaire had an open component which ensured the inclusion of aspects that might not otherwise have been addressed. The interviews were conducted by two researchers in person and lasted on average between two and three hours.

After writing up the interview notes, the researchers complemented the interview-based data collection by further analyzing public and additionally provided corporate documents. This documentation provides the basis for our detailed analysis. Therefore, we applied qualitative content analysis [21]. The results were discussed and evaluated with practitioners and scholars in two focus group workshops.

We investigated the elements of the research model (see Figure 1) in the case companies. In order to provide rigor in the qualitative research design, we built on theoretical constructs and applied the RBV as a theoretical lens. In order to answer RQ.1, we studied ITG, resource relatedness, and business process performance independently before we mapped the dimensions in a qualitative assessment. After that, key levers were deduced (RQ.2) from the fruitful discussions of the data and results.

4. Case study report

4.1. IT governance

For the purposes of comparison we employed the minimum baseline as suggested by the literature [15] (see the legend of Table 3 for a detailed list). Since the RBV is based on the assumption that resources are always applied to their fullest extent, we assessed ITG practices by whether they were implemented or not. However, by counting the distinct processes, structures, and relational mechanisms we were able to derive maturity levels. The definition of ITG in terms of structures, processes, and relational mechanisms allows three levels to be distinguished (as depicted in Table 4). Firms achieving a LOW ITG level are beginning to establish their first structures and relational mechanisms, while firms in the MEDIUM ITG level have successfully deployed structures and relational mechanisms but lag behind when it comes to processes. A HIGH ITG level is accompanied by mature processes and by real authority [1] over the IT. More concretely, the representative ITG practices for structures, processes, and relational mechanisms are compared across the individual firms to determine maturity level.

<table>
<thead>
<tr>
<th>Case (Company)</th>
<th>Industry sector</th>
<th>Employees &gt; 50k</th>
<th>Turnover 2010 € &gt; 50 Billion</th>
<th>Interview partner</th>
<th>Number of interviews</th>
</tr>
</thead>
<tbody>
<tr>
<td>ALPHA</td>
<td>Financial</td>
<td>✓</td>
<td>✓</td>
<td>Head of IT Strategy</td>
<td>2</td>
</tr>
<tr>
<td>BETA</td>
<td>Financial</td>
<td>—</td>
<td>—</td>
<td>CIO</td>
<td>1</td>
</tr>
<tr>
<td>GAMMA</td>
<td>Technology</td>
<td>✓</td>
<td>✓</td>
<td>Divisional CIO</td>
<td>1</td>
</tr>
<tr>
<td>DELTA</td>
<td>Industrial</td>
<td>—</td>
<td>—</td>
<td>Head of Internal Services</td>
<td>2</td>
</tr>
<tr>
<td>EPSILON</td>
<td>Utilities</td>
<td>✓</td>
<td>—</td>
<td>Head of IT Governance</td>
<td>2</td>
</tr>
</tbody>
</table>
BETA is undergoing a large restructuring project. After the dismissal of the former CIO, the new CIO is working on the implementation of a basic set of ITG practices. As a first step, the IT steering committee and some basic IT project management methodologies are being deployed in the organization. Since only one structure and one process were reported by the interview partner, BETA is evaluated as being at a LOW level of ITG maturity.

DELTA has implemented critical structures, as well as portfolio management, and budget control and reporting processes. The interview partner acknowledges that the CIO is not a member of the executive committee, and reports to the CFO. He states that “instead of charging significant external costs to the business unit, these costs are limited by the budget of the finance department” to which the IT department is organizationally assigned. Hence, we classify the ITG maturity of DELTA as MEDIUM.

ALPHA is more advanced in terms of structures, but lags behind in essential processes such as portfolio management and strategic information systems planning. IT leadership is also not achieved due to the decentralized business model.

EPSILON achieves a MEDIUM ITG maturity level. Except for the IT steering committee, all structures are in place. Portfolio management, IT budget control and reporting, as well as project management methodologies, have successfully been deployed in the organization. However, the Head of IT Governance of EPSILON clearly points out the difficulties of a decentralized business. He argues that “infrastructure decisions are made on a 50:50 basis between the CIO and the management of the subsidiaries. Even if the business case turns out to be positive, the expenditures for IT can be increased in the beginning or might be lower for the entire group but not for the particular subsidiary. The CIO is formally allowed to make the decision, but he needs the budget of the subsidiary. Therefore, his right to take decisions is not consistent.”

GAMMA is the only multi-business firm that has developed ITG to HIGH maturity. In total, eight of the ten minimum baseline practices have been implemented. Besides the aforementioned structures and processes, IT leadership is not limited to the IT organization but also has an impact on business decisions. This makes particular sense as GAMMA is a technology company. The close collaboration between business and IT takes place through informal meetings and is supported by the management through joint performance incentives for business and IT stakeholders.

<table>
<thead>
<tr>
<th>Table 3. IT governance assessment</th>
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<tbody>
<tr>
<td>IT governance practices (Structures, Processes, Relational mechanisms)</td>
</tr>
<tr>
<td>S1</td>
</tr>
<tr>
<td>-----</td>
</tr>
<tr>
<td>ALPHA</td>
</tr>
<tr>
<td>BETA</td>
</tr>
<tr>
<td>GAMMA</td>
</tr>
<tr>
<td>DELTA</td>
</tr>
<tr>
<td>EPSILON</td>
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</table>

Legend:  
S1 IT steering committee  
S2 CIO on executive committee  
S3 IT strategy committee at board level  
S4 IT project steering committee  
S5 CIO reporting to CEO or COO  
P1 Portfolio management  
P2 IT budget control and reporting  
P3 Strategic information systems planning  
P4 Project management methodologies  
R1 IT leadership  
✓ Implemented practice  
- Non-implemented practice

4.2. Resource relatedness analysis

According to Tanriverdi [52], IT relatedness encompasses the dimensions of IT infrastructure, IT strategy making, IT human resource management and IT vendor management. Due to space restrictions, we limit ourselves to one dimension and present an excerpt, although we have analyzed all four dimensions. In the following we describe the sourcing approaches – representing the vendor management dimension – of the five case companies for both information technology outsourcing (ITO) and business process outsourcing (BPO [23, 25, 38, 63]).
Currently, ALPHA is undergoing a transformation from decentralized ITO and a heterogeneous supplier portfolio to a more centralized, group-wide IT sourcing approach, by implementing a common IT sourcing framework. Yet ALPHA is still in the transformation phase and has not fully unleashed the potential of this central IT sourcing strategy. With regard to BPO, ALPHA is rather reluctant to outsource business processes. In some rare cases, local business entities outsource non-business critical functions, such as certain accounting activities, to a captive near-shore center.

Similarly, BETA does not follow a centralized BPO strategy and, moreover, ITO lies in the autonomy of the individual business units.

In contrast, GAMMA centrally coordinates both ITO and BPO activities across all business entities and has, for instance, globally outsourced parts of its HR recruiting process. In this context, central sourcing has been identified as strategic lever, and GAMMA has implemented a shared service organization that serves all divisions in the multi-business firm.

Likewise, DELTA has pooled and outsourced almost 80% of its IT activities through a central sourcing approach. However, with regard to BPO, DELTA is very restrained, in the same way as ALPHA and BETA.

Based on a strong history of mergers and acquisitions, EPSILON is characterized by a non-integrated IT landscape across the group that is accompanied by a decentralized sourcing approach. Correspondingly, BPO at EPSILON is rarely accomplished.

4.3. Discussion and identification of levers

In the qualitative assessment, we mapped the dimensions we had previously discussed in order to investigate the relationship between ITG maturity and the relatedness of IT and business processes. For a better understanding, ITG maturity is positioned below the chart while the two dependent variables are displayed on the axes in Figure 2. This study confirms the recent findings that a mature ITG is positively associated with harmonization and consolidation initiatives in IT and business processes [22]. The manager of GAMMA describes the incentive for ITG as the “development of guidelines, the definition of costs and standards, since only those means allow us to govern the organization in order to realize synergies”. Actually, the standardization and consolidation of IT resources is identified as one of the primary objectives of ITG. A low IT relatedness refers to corporate focus on the consolidation of IT infrastructure and the harmonization of internal IT processes. For instance, the corporate strategy of BETA follows an autarkic and decentralized approach, resulting in several decentralized IT strategies, and, consequently, IT related synergies cannot be realized. Only basic processes such as the purchase of SAP and Microsoft licenses are managed across all divisions centrally. Instead, within the division there are initiatives for a harmonization of IT and business processes. On the other hand, case companies possessing a high IT relatedness show IT support and delivery processes for a harmonized IT application/service portfolio. The high-performing firms strongly show a prudent increase in interaction and knowledge sharing between IT and the business, which allows the IT to harmonize the IT supported business processes themselves. This desirable state is achievable only if business process relatedness is at a high level.

![Figure 2. Qualitative assessment](image)

In order to realize the performance effects of corporate ITG initiatives, it is crucial to harmonize not only the IT resources but also the business processes themselves. Two distinct approaches can be observed which foster close collaboration between business units. The first approach is to conduct consolidation projects with local business units and then use these successful projects as a reference for other business units. The second approach relies instead on the power of a board member who pushes business process consolidation initiatives through the entire organization. Both approaches are reported by firms
that achieve HIGH or at least MEDIUM maturity in ITG.

Regardless of the chosen approach, three development phases are observable that act as ITG levers to improve business process performance. In the first phase, a basic ITG body, including structures and relational mechanisms, is put in place. The focus is on IT infrastructure for cost-saving purposes, and on the harmonization of IT processes for efficiency purposes. In the second phase, when the ITG practices are successfully deployed, ITG initiatives aim at the consolidation of IT applications and the definition of a unified service portfolio. A major objective is the provision of high-quality services for customers and users. Consolidation of the IT application landscape reduces costs, and is supported by efficiency gains in IT support and a delivery process for harmonized applications and offered services. In the third phase, the focus is shifted towards the harmonization of the business processes themselves. For that purpose, harmonizing the business processes and their end-to-end optimization seem promising as a means of achieving cross-unit synergies. In particular, interaction and the sharing of knowledge are crucial.

5. Contribution, Limitations, and Outlook

The aim of this paper was to analyze resource relatedness and IT governance in the context of business process performance. Therefore we conducted an extensive analysis of the literature to identify relevant theoretical constructs. These constructs (e.g. RBV) form the basis for the analytical framework which we applied to the multiple case studies.

The first research question (RQ.1) addressed the issue of how IT governance, resource relatedness and business performance are associated. Based on the analysis of the literature, we set these three terms in our research model in context. The insights from the multiple case studies were examined using the analytic framework which we derived from the theoretical constructs we had identified. This framework focused on ITG maturity as well as details about ITG practices (processes, structures, and mechanisms) for each case company.

The results of these analyses were evaluated and discussed, to discover levers which increase business process performance coordinated by IT governance, in order to address the second research question (RQ.2). Thus, the researchers identified and described significant levers which can lead towards an improvement in business process performance.

However, the analytic framework is the result of an exploratory study with only five companies. The dataset needs to be enlarged in order to refine the framework for the purpose of quantitative theory testing. We do not propose that the set of mediating constructs within the relationship of ITG and business performance is yet complete. One central limitation is that we primarily talked to the IT side of the corporations. Consequently, the framework is yet to be contrasted with case studies within business departments. IT governance is further concerned with both generation and preservation of value. Both objectives can lead to higher business performance. This research only analyzes the effects of the generation of business value. We chose to limit ourselves to corporations from Europe for our initial research, enabling us to reduce complexity considerably. The same holds true for the size of the companies analyzed, and the fact that all of them were multi-business firms. The framework needs to be further expanded to include the cultural dimension and additional potential moderators, such as authority, specificity of knowledge, industry and the size of the corporation. Finally, the transformation of competitive advantages from the business process performance level to the organization performance level calls for further investigation for a full exploitation of the potential of the research model employed.

6. Acknowledgements

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7. References


