Business Strategy, IT Management and Business Value – a tripartite interaction?

Emergent Research Forum Paper

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Abstract

Although there is much research on strategic alignment, cross-domain alignment, that is bridging externally focused competitive strategies with internal focused IT processes, remains largely untouched. In view of this gap, we aim to shed light on the relationship between IT management profiles and business strategies linked by unique IT business value profiles. Building on prior literature, we propose that each IT management profile taps unique sources of value from IT. Furthermore, we assume that each strategy archetype requires specific value profiles. Subsequently, we hypothesize that the alignment of a firm’s business strategy and the management profile of its IT function increases the overall impact of IT. In order to empirically confirm our hypotheses, we will conduct a matched-pair study among 1,000 firms. We expect the findings to result in significant recommendations for CIOs regarding the transformation of their IT management profile in order to support their organization’s business strategy best.

Keywords

IT management, IT function, IT contribution, business value, business strategy, strategic alignment

Introduction

Corporations around the world depend on information technology (IT) to fulfill their business requirements. The use of IT has increased significantly during the last decades (Schryen 2012) and today, only rare exceptions of very small enterprises can survive without it. Many –if not most– contemporary business processes are not conceivable without the support of adequate IT. Furthermore, in industries where products and business models are increasingly digitized, firms are not viable without IT (Peppard and Ward 2004). Consequently, spending on IT became a weighty part of corporate expenses (Schryen 2012). However, prior research has shown that investments in IT do not by default contribute to positive firm performance. Rather, the measurable impact of IT investments seems to be particularly dependent on the firm’s ability to effectively manage the resource IT (Santhanam and Hartono 2003). Additionally, the nature of the contribution of IT to a firm’s performance seems to be multilayered (see e.g. Kohli and Grover 2008) and contingent to complementary firm resources (Melville et al. 2004; Wade and Hulland 2004). Subsequently, IT management capabilities (Kohli and Grover 2008) and strategic business-IT alignment (Chan and Reich 2007) have been identified as key factors for realizing business value.

In view of the importance of IT for contemporary enterprises it is not surprising that the management of the IT function (i.e. the organizational unit responsible for the management of IT) gained significant importance in the last years. The professionalization and sometimes even the “industrialization” of IT management is particularly reflected in the growth of practitioner oriented reference and maturity models such as the IT Infrastructure Library (ITIL), the Control Objectives for Information and Related Technology (COBIT) and the IT Capability Maturity Framework (IT-CMF), to name just a few (see e.g. Becker et al. 2009; Disterer 2009; Iden and Eikebrokk 2013). However, it needs to be noted that these frameworks only consider specific aspects of the management of IT resources. Furthermore, scientific studies on IT management frameworks and the impact of these frameworks on the IT functions ability to create value are...
rare (Iden and Eikebrokk 2013; Thorogood et al. 2012). Altogether, knowledge in the area of IT management research seems to be very much fragmented (Guillemette and Pare 2012).

In response to these limitations, Guillemette and Pare (2012) proposed a typology of idealized IT management profiles. In line with the argument that the value of IT is multilayered (Kohli and Grover 2008), each profile is associated with unique sources of value to the organization. Guillemette and Pare further argue that IT functions which are close to any given ideal profile are most likely to outperform those with hybrid profiles. To harden their proposition, they call for further research. Based on this call we bring forward following research question:

(a) Does each ideal IT management profile provide a distinctive source of value to the organization (i.e. reveal a distinct value profile)?

Considering the adoption of an IT management profile, Guillemette and Pare confine their examination to CIOs interpretation of the centrality of IT to the organization as well as his/her perceptions on his/her strategic influence and top-management’s IT knowledge. However, following the imperative of business-IT alignment research (Chan and Reich 2007), we assume that the adoption of ideal profiles will also be dependent on the organizations business strategy. In order to gain knowledge on the relation between ideal IT management profiles and business strategy, we propose following research question:

(b) Does business strategy archetypes require specific ideal IT management profiles in order to maximize the impact of IT on firm performance?

To answer the research questions we first analyze the applicable literature and present our hypotheses. The hypotheses will be empirically tested using a matched-pair study (CIO and business executive). In order to examine the configurations of business strategy, IT management profile and IT business value, we intend to apply a fuzzy-set Qualitative Comparative Analysis (fsQCA) (Ragin 2000). We close the paper with an explication of the expected outcomes and the resulting contributions to theory and practice.

Theoretical Background and Research Propositions

IT Management Profiles and IT Business Value

The ideal management profiles for IT functions derived by Guillemette and Pare (2012) represent unique but compatible combinations of properties within four dimensions: the critical activities of the IT function, the most important skills and abilities for its employees, the nature of the relationship with business units and external partners, and the forms of IT governance models. Each ideal profile provides a distinctive source of value to organizations (see Table 1).

<table>
<thead>
<tr>
<th>Ideal IT management profile</th>
<th>Main characteristics</th>
<th>Proposed contribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Architecture builder</td>
<td>Aims to build and manage an IT infrastructure that supports business processes and reduces architectural complexity; limited presence in business; technical skills and industry knowledge</td>
<td>Reducing architectural complexity in order to increase business agility.</td>
</tr>
<tr>
<td>Partner</td>
<td>Aims to support business transformation and fostering organizational innovation; strong and ongoing presence in business; technical and interpersonal skills</td>
<td>Improving productivity through reengineering the business processes and facilitating change.</td>
</tr>
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<tr>
<td>Project coordinator</td>
<td>Aims to give the organization greater flexibility; strong and ongoing presence in business (reactive); technical, negotiation and interpersonal skills;</td>
<td>Introducing a flexible and efficient sourcing strategy and improving the business’s ability to make better decisions regarding IT.</td>
</tr>
<tr>
<td>Systems provider</td>
<td>Aims to fulfil the needs of the business; limited presence in business (reactive); technical skills</td>
<td>Lowering the firm’s operating costs by reducing the cost of IT operations and selecting IT projects that minimize costs.</td>
</tr>
<tr>
<td>Technological leader</td>
<td>Aims to identify new business opportunities through IT; strong CEO–CIO relationship, on-going presence in business (proactive); technical, business and interpersonal skills, industry knowledge</td>
<td>Implementing emerging technologies with high strategic potential.</td>
</tr>
</tbody>
</table>

**Table 1: Ideal profiles based on Guillemette and Pare (2012)**

Guillemette and Pare (2012) identified five sources of value specific to each IT management profile. However, prior literature points out sources of business value from IT which are not covered by their propositions (see e.g. Sabherwal and Chan 2001; Schryen 2012; Wang et al. 2012). As a result of our extended literature review, we derived nine distinct sources of value from IT (hitherto IT business value domains, see Table 2).

<table>
<thead>
<tr>
<th>IT business value domain</th>
<th>Contribution of the IT function in this domain</th>
<th>Sources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Analysis and decision support</td>
<td>... increases a firm’s ability of prudent decision making by providing valuable and detailed information.</td>
<td>Venkatraman (1989)</td>
</tr>
<tr>
<td>Operational efficiency</td>
<td>... enables a firm to improve the productivity of its day-to-day business operations.</td>
<td>Karimi et al. (2007), McLaren et al. (2004)</td>
</tr>
<tr>
<td>Operational flexibility</td>
<td>... enables the firm to quickly adapt to planned and unanticipated changes.</td>
<td>McLaren et al. (2004)</td>
</tr>
<tr>
<td>Internal integration</td>
<td>... increases internal communication, coordination and knowledge transfer.</td>
<td>Ravichandran and Lertwongsatien (2005), Bradley (2006), Mitchell (2006)</td>
</tr>
<tr>
<td>External integration</td>
<td>... increases a firm’s ability to coordinate supplier linkages and monitor supply chains.</td>
<td>McLaren et al. (2004)</td>
</tr>
<tr>
<td>Market access</td>
<td>... increases a firm’s ability of entering new markets as well as introducing new products or services.</td>
<td>Wang et al. (2012)</td>
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Table 2: IT Business Value Domains

<table>
<thead>
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<th>IT business value domain</th>
<th>Contribution of the IT function in this domain</th>
<th>Sources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Innovation support</td>
<td>... increases the firm's overall innovation capability by fostering product development, shortening innovation cycle, and facilitating business process innovation.</td>
<td>Wang et al. (2012)</td>
</tr>
<tr>
<td>Risk &amp; compliance</td>
<td>... enables the firm to improve risk-handling as well as submission to internal policies and external regulations.</td>
<td>Spanaki and Papazafeiropoulou (2013)</td>
</tr>
<tr>
<td>Financial performance</td>
<td>... reduces operating costs of IT (run &amp; change) and enabling the firm to identify saving potentials.</td>
<td>Guillemette and Pare (2012)</td>
</tr>
</tbody>
</table>

Based on the assumptions of Guillemette and Pare (2012) we propose that –dependent on its management profile– an IT function does not equally contribute to the organization's performance in all nine IT business value domains, but in just a few. Subsequently, we assume that the contribution of an IT function associated to each ideal management profile is related to a distinct set of IT business value domains, which forms its unique IT business value profile.

Business Strategy and IT Management Profile

Research on business-IT alignment demonstrates that the impact of IT on firm performance is dependent on the fit between the capabilities of IT and business needs (Tallon 2007). In their seminal work, Henderson and Venkatraman (1999) note that IT and business need to be aligned on strategic and operational levels as well as across these levels. Although there is much research focusing on the strategic level (Chan and Reich 2007) and an increasing emphasis on the operational level (Mastrogiacomo et al. 2014; Wagner et al. 2014), cross-domain alignment remains largely untouched by research. Cross-domain alignment refers to all aspects of bridging higher level, externally focused strategies with lower level, internally focused processes (Gerow et al. 2014), such as reflected by various IT management approaches.

Building on the argument of cross-domain alignment, it can be assumed that each of the ideal IT management profiles fits best to distinct business strategies. In order to classify business strategies, Miles and Snow (1978) developed a typology consisting of four stable and recurring configurations of business strategy patterns: prospector, reactor, defender, and analyzer (Smith et al. 1989). The archetypes are multifaceted, but they “exhibit competitive strategy patterns focusing on operational efficiency, innovation, risk minimization, and quick response, respectively.” (McLaren et al. 2004, p. 916). Furthermore, there is empirical evidence that each archetype requires a distinct set of IT business value domains (Sabherwal and Chan 2001; Tan 1995). For instance, Sabherwal and Chan (2001) suggest that the IT function of prospectors should focus on operational flexibility and innovation support. Therefore, we propose that an IT function’s contribution to firm performance is dependent on the cross-domain alignment between business strategy and IT management profile.

Research Model

Targeting our first research question, we hypothesize that each ideal IT management profile contributes to firm performance through contributing to a distinct set of IT business value domains (H1). Furthermore, we propose that realizing its strategic objectives, each strategy archetype requires IT to deliver value within a specific set of IT business value domains (i.e. some domains are more important than others, H2). Building on the assumption that each ideal IT management profile is related to a distinct set of IT business value domains, we further assume that an IT function’s contribution to firm performance is dependent on the cross-domain alignment between business strategy archetype and IT management profile. Subsequently, we hypothesize that the alignment between a firm’s business strategy and the
IT management profile increases the overall impact of IT to firm performance (H3). Finding evidence for H2 and H3 will enable us to answer our second research question (b). Figure 1 depicts our hypotheses.

**Research Method**

**Data Collection**

In order to test these hypotheses and to answer the research questions, we plan to conduct a matched-pair study of CIOs and business executives within the manufacturing industry using a randomly selected sample of approx. 1,000 medium sized firms (1,000 to 5,000 employees). The dataset containing the addresses has already been acquired and the funding for printing and sending the questionnaires, follow up phone calls etc. has been secured.

We intend to ask the business executive to assess the business strategy, the required IT business value profile and the actual contribution of the IT function to the IT business value domains, while asking the CIO to qualify the IT management profile he/she has implemented.

In order to capture the business strategy, we intend to use the measurement instrument developed by McLaren et al. (2004); McLaren et al. (2011). To capture the required IT business value profiles, we will ask the business executives to prioritize the IT business value domains according to their importance for their business strategy. Furthermore the assessment of the actual contribution of the IT function to the IT business value domains as well as the overall impact of IT on firm performance will be measured using slightly adapted items from prior research.

Finally, we will develop a set of items aimed to capture the IT management profile implemented by the CIO using the approach of Conant et al. (1990). For validating the newly-developed and adapted measurement items, we will apply the guideline of MacKenzie et al. (2011) as well as pre-test the measurement instrument with CIOs, business executives and associated scholars.

**Data Analysis**

As depicted in Figure 1, business strategy, IT management profile, and IT business value profile are multidimensional constructs. Using contingency approaches would require modelling a very large number of relationships (McLaren et al. 2011), which is not feasible. In light of this limitation, we intend to apply fuzzy-set qualitative comparative analysis (fsQCA), a variant of QCA (Ragin 1987; Ragin 2000). fsQCA uses set theory and Boolean algebra to analyze to what degree variables ('conditions') or combinations of variable
('configurations') are necessary or sufficient for the outcome under investigation. fsQCA formalizes the analysis of such conditions by applying set-theoretic relations and Boolean algebra.

Applying a profile-deviation approach, we will model the membership to each ideal management profile and business strategy as fuzzy-sets. Furthermore, we adopt the approach of Fiss (2011) and split the sample in firms where IT has high impact on firm performance, medium and low impact (using the tertile). Then, we apply fsQCA methods (Schneider and Wagemann 2010) to analyze if there are combinations of management profile and business strategy that are leading to high, medium and low impact of IT on firm performance (H3). The results of this analysis will help us to answer research question (b).

In order to answer research question (a) and to test H1, we will apply fsQCA to identify patterns within the data without assuming causation. As such we model the impact of the IT function on each IT business value domain as fuzzy-sets. Further we assign each firm to the management profile to which it reveals the smallest deviation and create subsets for each IT management profile. Then we examine if there are consistent and stable combinations of IT value domains within each subset. We will apply the same method to test if there are patterns between business strategies and required IT business value domains (H2).

**Expected Contributions**

This research aims to close an important gap in the field of IT management research. First, we expect to provide empirical support for the proposed ideal IT management profile. Second, we expect to show that the implementation of a management profile for the IT function should not only be dependent on CIOs perception on the strategic role of IT but needs also to be in line with the business strategy of the firm. We therefore expect to shed light on the relationship between IT management profiles and business strategies linked by unique IT business value profiles.

Both contributions would also have meaningful implications for practice. A combined typology of ideal IT management profile and business strategy archetypes could guide CIOs and CEOs to improve the cross-domain alignment between business strategy and IT processes and infrastructure and, ultimately, increase firm performance. The findings expected from this study could lead to profound recommendations for CIOs regarding the transformation of their management profile to a profile that fits best to the competitive strategy of their organizations.

**REFERENCES**


Schneider, C.Q., and Wagemann, C. 2010. “Standards of Good Practice in Qualitative Comparative Analysis (Qca) and Fuzzy-Sets,” *Comparative Sociology* (9:3), pp. 397-418.


