Strategic Alignment Analysis between IT-Business Strategies

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Abstract
Information technology can support or even shape business strategy. Furthermore, utilization of information technology can become strategic when used in innovative ways. Product and process innovations and innovative behavior is a strategic activity by which organizations gain and lose competitive advantage. More than thirty years of research has shown that the practical value of business-IT alignment is significant and that its importance derives from strategic impact on business outcomes. This study explored the extent to which Information Technology (IT) strategic alignment are impacted by IT governance structures. The purpose of this study was to explore the extent to which IT strategic alignment is affected by IT governance structures. The study adapted a non-experimental, correlative quantitative research used to determine the extent to which causal relationships exist for exploring four research questions. The studies population sample came from hospitals business and technology managers and executives of which 28 responded within the response timeframe. The study tested several hypothesis that yielded positive and negative correlations. The study concludes on the statistical correlation between IT strategic alignment and IT governance structural factors affecting organizational goals, objectives and competitive advantage and at the end, a BSC model for determination of IT-business alignment was used.

Keywords: Strategic alignment, Information technology, Business strategy

Introduction
Information technology is an important capital investment for firms because it provides internal and external business support for the interaction and integration of the firm’s staff and other firms (Laudon & Laudon, 2006). The ability of companies to market competently might be dependent on the way leadership combines strategy and IT resources (Gordon, Tarafdar, Cook, Maksimoski, & Rogowitz, 2008; Boaden, 2006). The business knowledge of a firm acquired by IT individuals or team groups might have an important role when fast innovative changes are needed. Experienced IT personnel is required when mandatory changes to meet other competitive business environments are needed for the stability and survival of the firm (Miller, Fern, & Cardinal, 2007; Overby, 2006). The loss of skilled knowledge professionals because of voluntary turnover might be disruptive and critical in the event innovative changes in the firm are critically needed (Luftman, 2004). Khaliq, Thompson, and Walston (2006) noted the turnover of one or more top ranked experienced IT personnel might have specific effects or disruptions on the effectiveness of a firm. Loss of the firm’s competitive edge and expensive costs for replacements might result from such disruptions. Organizations today depend more on Information Technology (IT) to support business goals and objectives for the purposes of organizational effectiveness, achieving competitive advantage and continual growth (Luftman, 2003). While the importance of IT strategic alignment is discussed in the extant literature, researchers continue to report on the failures of achieving IT strategic alignment in organizations (Luftman & Kempaiah, 2007).
Furthermore, the lack of IT strategic alignment in organizations lead to pure IT Return on Investment (ROI), inefficient operations due to pure performance (Luftman & Kempaiah, 2007; Sabberwal & Chan, 2001) that impact the organizations competitive advantage. Luftman & Brier (1999) adds that a successful IT alignment has the capability to transform an organization and an industry and is a "fundamental principle that has been advocated for over a decade" (p. 110).

Congruent to this assertion, Paterson (2004) identifies IT governance as the framework to guide organizations IT strategic alignment process. IT governance has become prevalent as organizational executives design or selects an IT governance structure to direct IT in sustaining business goals and objectives (ITGI, 2003; Van Grembergen, De Haes & Guldentops, 2004). However, the choice of a governance model or structure does not imply that the organization has effectively implemented a governance structure that enables and aligns its IT and sustains the organization. It is important that organizational leaders and board of directors understand the relationship and impact of IT governance structure to IT strategic alignment. The added knowledge may lie in the degree to which IT governance impacts IT alignment. According to Information Technology Governance Institute (ITGI) (2003), IT governance ensures that IT goals are met and IT risks are mitigated such that IT delivers value to sustain and grow the business. The institute adds that “IT governance drives strategic alignment between IT and the business and must judiciously measure performance” (p. 37). However, there is a gap in literature that describes the extent to which IT governance structures influence or impacts organizational IT strategic alignment (Peterson, 2004).

The research explores the correlation between IT Governance structures in organizations and IT strategic alignment in an effort to extend existing knowledge of IT strategic alignment and its relationship to IT governance. Furthermore, organizations that choose to combine IT governance structures continue to face difficulties as to the exact implementation strategy and combination of structural elements that is applicable (Peterson, 2004). Further investigation into IT strategic alignment and governance structural elements may contribute to existing knowledge as well as add practical know-how to managers and executives planning for IT alignment and governance in an effort to drive the organizations business with IT.

**Literature review**

Thompson, Strickland and Gamble (2007) describe strategy as the planned actions that management takes to attract, keep and please customers in an effort to compete successfully. Strategy is an inextricably woven plan of action that cooperatively embraces a company's vision, objectives, goals, operational plans and policies and guides the company for a competitive advantage. According to Porter (1996), a deeply rooted organizational strategy is one that makes a lasting difference between having a competitive advantage over competitors and companies who do not. IT strategic alignment is the combined engagement of all IT units’ strategies, plans processes, investments and decisions to support the overall functionality and purpose of the organization goals and objectives (Khadem, 2007). In other words all of the enterprise and functional IT units should actively support the organization’s mission, vision, goals and strategies. Execution of strategic alignment requires the merging of all organizational enterprise components, (including Operations, Financial, Human Resources, and IT departments) to consistently support the enterprise's overall business purpose, goals and objectives (Smaczny, 2001). Additionally, Chan and Huff (1993), defines strategic alignment as the systemic execution and integration of the organizations business needs with its IT resources. The assessment and evaluation of seminal and resent strategic alignment researches reveals that the foundational theory is found in strategy, IT and Information Systems (IS) planning. An understanding of strategy allows for an in depth look at the origins of the literature. This is critical as this literature review claims to establish a...
historical account of IT strategic alignment as the basis for adding to the body of knowledge and establishing the non existence of literature that explores the correlation between IT strategic alignment and IT governance.

Hirschheim and Sabherwal (2001) research focused more on the responsibilities and variables that actually brings strategic alignment to fruition. Such responsibilities and variables included organizational inertia, sequential attention to goal, knowledge gaps, split responsibilities and underestimation of problems. These variables may seem as external elements to IT alignment, however, it is the expert marriage of all organizational elements that makes an alignment successful (McKeen & Smith, 2003). A limitation found in Hirschheim and Sabherwal research is the absence of cognitive influences and IT governance effect on IT strategic alignment. Hirschheim and Sabherwal (2001) research draws heavily on Miles and Snow’s (1978) strategy typology and Venkatraman’s (1985) operationalization.

While the importance of strategic alignment had been documented in literature and several IT strategic alignment models proposed, Luftman and Brier (1999) research problem was that organizations faced difficulty in achieving IT strategic alignment. The study purpose was to find what the difficulties were. The author's qualitative research (using interviews and observations) surveyed executives attending classes at IBM's Advanced Business Institute (IABI) that represented over 500 firms in 15 industries. Luftman and Brier (1999) concludes that there were six enablers and six inhibitors that affected the success of IT strategic alignment of which the most prominent were IT governance through executive support and decision making, understanding the business, IT and business relations, and leadership. These were present in both the enablers and inhibitors. These alignment issues caused Luftman (2003) to develop a model based on a modified Carnegie Mellon University's Capability Maturity Model (CMM) to address these issues. The model addressed limitations found in previous strategic alignment models. Luftman (2003) model encompassed the organizations communications maturity, competency and value maturity, governance maturity, partnership, technology and skill maturity. However, Luftman’s maturity model failed to assess the relationship of IT governance structures to the alignment process due to a focus on the organizations business processes. Evidently, Peterson (2004) research reveals that an organizations IT governance serves as the enabling mechanism to enforce alignment execution. IT governance has become prevalent as organizational executives adapt IT governance structures or frameworks to guide and sustain business goals and objectives (ITGI, 2003; Van Grembergen et al, 2004). However, adapting a governance structure does not imply that the organization has effectively implemented a governance structure that aligns with IT and sustains and grows the business (Weill & Ross, 2005). With IT governance focus on specific IT decisions, functions, leadership responsibilities and management, the possibility of IT governance enabling a successful IT strategic alignment is very likely (Peterson, 2004; Weill & Ross, 2005). This process could be a factor of the degree to which IT governance relates and impacts IT strategic alignment. The impact of IT governance is important to the theory of IT strategic alignment (Korac–Kakabadse & Kakabadse, 2001).

Sambamurthy and Zmud (1999) describes IT governance as a measure of organizational authority for IT activities. Such a measure of authority is critical for a strategic alignment success. The author's state that "during the last 20 years, three primary modes of IT governance have become prevalent: centralized, decentralized, and the federal mode" (Sambamurthy & Zmud, 1999, p. 261). While Sambamurthy and Zmud discusses structures of IT governance, Peterson (2004) adds that IT governance has emerged as the key to realizing IT business value.
Research Methodology & Findings
The purpose of the quantitative correlational study was to explore the extent to which Information Technology (IT) strategic alignment are impacted by IT governance structural elements based on an alignment maturity model and an IT governance framework (Luftman & Kemppainen, 2007; Peterson, 2004 and Luftman, 2003). The study focused on IT strategic alignment relationship with IT governance. This research was a non-experimental, correlative quantitative research used to determine the extent to which causal relationships exist for exploring the research questions. The research is exploratory in nature because it addresses the fact that the correlation between IT strategic alignment and IT governance is missing from the literature. The research was designed to use a web-based survey to collect quantitative data from hospitals business and technology managers and executives in Tehran. According to Swanson and Holton (2005), quantitative study is a research approach that often starts with a developed theory that leads to hypothesis, specific statistical testing and strict analysis. Creswell (2003) adds that a quantitative research often exemplifies experimental or non experimental strategy of inquiry that often follows a pre and post test measures of attitudes or actions. This means that an experimental study often demonstrate the assumptions commonly associated with the positivist traditions while non-experimental studies follow a process of understanding relationships or the correlation between variables. The contribution of this study is using BSC for classification of IT-Business indicators in four dimensions.

The balanced scorecard, as developed by Kaplan and Norton (1996), is a tool which enables an organization to unite and employ its mission uniformly throughout, addressing the need felt by Atkinson et al. (1997). By pairing an additional three performance measures to an organization’s go-to financial measurement, the balanced scorecard “enable[s] companies to track financial results while simultaneously monitoring progress in building the capabilities and acquiring the intangible assets they would need for future growth” (p.75). Instead of forcing managers to rely solely on financial measurements, the balanced scorecard instead allows managers the opportunity to infer, through causal linkages, how intangible assets can both influence their financial outcomes, but also how performance improvement initiatives influence longer-range strategic objectives. However innovative or comprehensive the balanced scorecard may appear to be at first glance, Kaplan and Norton (1992) stress that an organization will see that the areas they focus on will be impacted. Therefore, if an organization chooses ineffective measurements, the collected data may be of little importance. The balanced scorecard manages this problem through its scheduled review of dimensions. If at any time, a factor or measurement appears to inaccurately, or inefficiently, measure the intended action, it can be revised. The balanced scorecard is a system of combining financial and non-financial measures of performance in one single scorecard. By placing all elements together, each separate element serves as part of a pseudo checks-balance system. The balanced scorecard includes performance measures for four perspectives: financial, customer, internal business processes, and learning and growth (Niven, 2005). The balanced scorecard focuses on the link between business processes, judgments, and results. It is used as a device to direct strategy formulation, realization, and communication. It also helps follow the performance and provide feedback for assessment. In this manner the balanced scorecard system, when executed with support, has mechanisms built in that allow for sustained focus and attention on strategic initiatives and follow-through. Regression will be used to test each hypothesis. For interpretation of any statistically significant interactions, the interactions will be graphed according to the procedures outlined by Barron and Kenny (1986). The mediation hypotheses will be tested according to the procedures outlined by Barron and Kenny (1986). To test for mediation, Baron and Kenny (1986) stated four conditions need to be satisfied. First, the independent variable should be related to the dependent variable. Second, the independent variable should be related to the
mediator. Third, the mediator should be related to the dependent variable. Finally, the fourth condition stipulates that when the effect of the mediator is accounted for, the direct relationship between the independent and dependent variables should become non-significant (full mediation) or substantially smaller (partial mediation).

**Table 1: Regression Analyses Results of IT -Business Alignment**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Financial</th>
<th>Customer</th>
<th>Learning</th>
<th>Internal process</th>
</tr>
</thead>
<tbody>
<tr>
<td>Formal IT strategic planning</td>
<td>.14*</td>
<td>-.01</td>
<td>-.04</td>
<td>.05**</td>
</tr>
<tr>
<td>Formal Business Strategic Planning</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Senior level IT steering committee(s)</td>
<td>-.61**</td>
<td>-.60**</td>
<td>-1.14**</td>
<td></td>
</tr>
<tr>
<td>How IT projects are prioritized</td>
<td>-.03</td>
<td>-.04</td>
<td>-.10</td>
<td></td>
</tr>
<tr>
<td>Rational for IT investment decisions</td>
<td>-.23**</td>
<td>-.22**</td>
<td>-.20**</td>
<td></td>
</tr>
<tr>
<td>Rational for IT budgeting</td>
<td>.49*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IT response to changing business needs</td>
<td>-23**</td>
<td>-28**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Knowledge sharing between IT and Business</td>
<td>.03</td>
<td>.03</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Understanding of Business by IT</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Organizational learning</td>
<td>.68**</td>
<td>.14</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Understanding of IT by Business</td>
<td></td>
<td></td>
<td></td>
<td>.91</td>
</tr>
<tr>
<td>Effectiveness of IT and business liaisons</td>
<td></td>
<td></td>
<td>.39*</td>
<td></td>
</tr>
<tr>
<td>IT and business communication style</td>
<td></td>
<td></td>
<td>.04</td>
<td></td>
</tr>
<tr>
<td>Link between IT and business metrics</td>
<td>.42*</td>
<td></td>
<td>.42</td>
<td></td>
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<tr>
<td>Continuous improvement practices</td>
<td></td>
<td></td>
<td>.42</td>
<td></td>
</tr>
<tr>
<td>Assessment and review of IT investments</td>
<td>.02*</td>
<td>.54</td>
<td>.58</td>
<td>.58</td>
</tr>
<tr>
<td>Metrics to measure business contribution to the business</td>
<td>.52**</td>
<td>.04**</td>
<td>.00</td>
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</tr>
</tbody>
</table>

* p < .05  
** p < .01

**Table 2: Regression Analyses Results of IT Governance**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Financial</th>
<th>Customer</th>
<th>Learning</th>
<th>Internal process</th>
</tr>
</thead>
<tbody>
<tr>
<td>Governance Structure</td>
<td>.64</td>
<td>.37</td>
<td>.11</td>
<td>.13**</td>
</tr>
<tr>
<td>Effectiveness of IT</td>
<td>.34</td>
<td></td>
<td>.29</td>
<td></td>
</tr>
<tr>
<td>Competency and Value of IT</td>
<td></td>
<td>.46*</td>
<td>.84*</td>
<td>.65</td>
</tr>
<tr>
<td>Partnerships with IT</td>
<td>.22</td>
<td>.14</td>
<td>.34</td>
<td></td>
</tr>
<tr>
<td>IT Architecture</td>
<td>.17**</td>
<td>.40*</td>
<td>.82*</td>
<td></td>
</tr>
<tr>
<td>Skills</td>
<td>.81**</td>
<td>.19</td>
<td>.27</td>
<td></td>
</tr>
</tbody>
</table>

* p < .05  
** p < .01
Conclusion & Discussion
This research contributed to the body of literature knowledge of IT strategic alignment and IT governance structures by exploring the degree of relationship between the two dependent and independent variables. Organizations choice of IT governance structure as it aligns with IT strategic alignment is the focus of this study. The first research question and hypothesis sort to explore the relationship between IT strategic alignment and IT governance structures. While the test reveals that there is a positive correlation between IT strategic alignment and IT governance structures (rejecting the null hypothesis that there is no correlation), hypothesis two through four suggested that hypothesis one was not specific enough to
address governance structures as individual entities. In other words, hypothesis one focused on the relationship between IT strategic alignment and IT Governance structures. However, analysis and results of research question one presented a general relationship that was not specific to a single governance structure. The overall regression equation was significantly associated with IT strategic alignment. The most relevant research to the current study is that from Henderson and Venkatraman (1993) who originally presented the strategic alignment model (SAM) to the research community and Luftman (2003) who operationalized Henderson and Venkatraman’s research in a form that could be consumed by studies, including the current research, seeking to expand on the concept of Business-IT alignment. Additional research identified in the literature review provided varying levels of contribution to the current research. Miles and Snow (1978) provide a contextual understanding of organizational types. This research gives us a way to understand the posture organizations assume pertaining to change and other factors related to how ready they may be to develop their level of Business-IT alignment. Teo and King (1997) illustrated that business-IT alignment, is an evolutionary process and that there is no single path to full alignment (optimized SAM). Implications of the current research findings indicate that hospital organizations, while not at the bottom of the business-IT alignment barrel, need to improve strategic alignment between their business and IT units. As illustrated in this research, increased business-IT alignment is related to increased effectiveness and efficiency; and in the current-state of healthcare affairs in the Iran, hospital organizations need to become models of efficiency to survive and flourish. To secure an advantage discussed and to increase hospital effectiveness and efficiency, it is recommend that organizations develop procedures and processes that incorporate business and IT leadership in all strategic planning. Processes should be developed that not only prohibit the exclusion of either business or IT input but require their active participation; delegation to lower-level management should be discouraged. This exploration of strategic alignment maturity shows that while hospital organizations are by no means at the bottom of the strategic alignment maturity scale, they do have room for growth and improvement.
References


Overby, S. (2006). The top three positions you need: The internal IT staff is back. People with business skills are most valuable-and the hardest to find. CIO, 19(6), 1.


