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Executive Mindsets Influencing the Alignment of IT and Strategy

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Abstract

When examining previous research on the IT-business strategy relationship, it becomes evident that a key difficulty for organizations is the alignment of IT and strategy. We find that this alignment can be better understood when examining the heads of the IT and business strategy organizational components, the CIO and the CEO. We propose that a technologist CEO and/or a business savvy CIO will improve the communication and understanding between these components, therefore producing a higher level of strategic alignment. We also propose that the three dimensions of IT capability (which have already been linked business performance), a strong and responsive IT staff, a cost-effective & well-managed IT infrastructure, and an effective IT-business relationship, are direct outcomes of strategically aligned planning. We test our model using the Fortune 1000 insurance firms as our sample. Results indicate that firms with a business savvy CIO are more likely to have a higher IT capability than those without a business savvy CIO.

Introduction

Business strategy can be described as "the long-term plan of action a company may pursue to achieve its goals" (Adler 1989) and as "decisions pertaining to competitive product-market choices that lead to choices that pertain to the structure and capabilities of the firm to execute its product-market choices" (Henderson and Venkatraman, 1999). As is evident by these definitions, an organization's strategy can relate to all of the components of the organization. One major organizational component affected by strategy is information technology (IT). As technology has matured and advanced, the position and impact of IT has become more important to organizations. Now, it is commonly recognized that technology plays a pivotal role in determining market success (Council on Competitiveness, 1991).

This line of thought has led researchers to advocate tight IT-business strategy linkages and to recognize that the two affect each other significantly (Porter and Miller, 1985; Ahituv et al, 1999). This is evident in Adler's (1985) definition of "technology policy" as the embodiment of the choices companies make about acquiring, developing, and deploying technology to help reach the goals of their business strategy. However, understanding the importance of the linkage between the IT and strategy organizational components is not enough. In order to fully realize the benefits of both components, their roles and positions in organizations should be understood.

The IT-Strategy Relationship

A commonly recognized problem-area of organizations is the direct linkage between strategy and IT. Although the need for this alignment is common knowledge, some organizations still have problems with the relationship. Henderson and

Venkatraman (1999) argue that firms may not be realizing value from IT due to the lack of alignment between IT and organizational strategies. The source of these alignment problems becomes more clear when looking at the top executives of the IT and strategy components. Top executives are the primary formulators of strategy, and so they are critical to fully understanding business strategy and IT policy (Finkelstein and Hambrick, 1996). The top executives of interest to us are the CEO and CIO.

Numerous problems have been identified with the relationships between CEO's and CIO's. Ahituv et al (1999) talk of a 'deep problem' of inadequate control and a communication barrier between the two types of managers. Sauer and Willcocks (2002) state, "Executives are busy creating and refining visions and have little time to focus on technology," and "technologists are busy keeping the platform current and have little time to understand the business in depth." Upper level managers are often too comfortable in their own highly specialized areas to try to understand other business areas and their managers. Rigid mindsets can cause CEO's not to think as technologists and CIO's not to see the big picture of organizations, leading to a strategy-IT misalignment. One clear result of misaligned executive mindsets is CEO dominance over the CIO. If a CEO does not have a technologist mindset, they dismiss technologist-initiated ideas. When looking at such behavior in a turbulent environment, Haleblain and Finkelstein (1993) find that CEO dominance leads to lower organizational performance.

Substantial research has been conducted on executives' mindsets. At the heart of this literature is the concept that every manager is burdened with a unique cognitive mindset. These mindsets are the results of executives' experiences, capabilities, values, and personalities; and differences in these influences cause executives to differ in their awareness and interpretation of new information, their beliefs about causation, and their beliefs about what it is they are trying to accomplish and how urgent it is (Finkelstein & Hambrick, 1996). Two key determinants of managers' cognitive mindsets are their prior education and work experience. Finkelstein and Hambrick (1990) argue that executive experience in the firm is a proxy for an executive's commitment to the status quo, risk aversion, and narrowness of information sources used (all elements of their mindset), and Kimberly & Evanisko (1981) and Thomas et al (1991) find that the level of a CEO's education is associated with their adoption of innovation (a key mindset element).

The importance of aligned executive mindsets is highlighted by the fact that strategic alignment is not a static process. Organizations, environments, and technologies are continuously changing. Henderson and Venkatraman (1999) say that strategic alignment is not an event but a process of continuous adaptation and change. The dynamic nature of alignment increases the importance of aligned executive mindsets - strategic decisions must be made in a timely manner and IT must be continually improved with new technologies. A common understanding between executives can greatly increase the efficiency of strategic decision-making, increasing the chance for organizational success in a dynamic setting.

Results of IT-Strategy Alignment

Short-term outcomes of efficiency, innovation, and profitability are not enough to assure long-term success in organizations; however, finding and leveraging a sustained competitive advantage can achieve this. This idea originates from the resource-based view of organizations. Mata et al (1995) describe this view when saying, "A firm is said to have a sustained competitive advantage when it is implementing a strategy not simultaneously implemented by many competing firms and where these other firms face significant disadvantages in acquiring the resources necessary to implement this strategy."

Past research on IT was often optimistic about the potential of IT to produce a sustained competitive advantage. The literature referred to examples such as American Airline's SABRE reservation system (Buday, 1986), Merrill Lynch's CMA (Wiseman 1985), and McKesson's Economost (Clemons and Row, 1988). However, recent literature has taken a different view, arguing that IT applications alone cannot produce sustained competitive advantages (however sophisticated and cutting edge they may be) (Henderson and Venkatraman, 1999). This approach is mainly due to the general consensus that information systems have become pervasive and relatively easy to acquire (Powell and Dent-Micallef, 1997).

Since IT alone may not lead to sustainable competitive advantages, many researchers now look at potential advantages resulting from IT's relationships with other organizational components. Powell and Dent-Micallef (1997) argue that social complexity, skills, and organizational interactions stemming from IT lead to the possibility of an advantage. The "strategic necessity hypothesis" (Clemons and Row, 1991) suggests that IT builds advantage by leveraging and exploiting preexisting, complimentary human and business resources. Keen (1993) says, "The wide difference in competitive and economic benefits that companies gain from information technology rests on a management difference and not a technical difference - some business leaders are somewhat better able to fit the pieces together the others." Lastly, Barney (1991) suggests that the role of history and complexity can allow resources to become sustained competitive advantages. So even if IT alone can't be a sustainable advantage, the complex relationships it forms with other organizational components offer a strong opportunity for a sustainable competitive advantage.

One of the organizational components offering such an opportunity is business strategy. The relationships formed by advanced IT and strategy can be a sustained competitive advantage when the two components are properly aligned. IT's role as a supplement to established methods and processes (traditional technologies), its management from the executive level, and its alignment with organizational strategy make it part of a complex system that draws on the unique history, processes, relationships, and vision of an organization. This presents a strong opportunity for an IT-strategy related sustained competitive advantage that can lead to organizational success.

Strategic Alignment and IT Capability

Simply proposing that the proper alignment of business strategy and IT leads to superior business performance because of a competitive advantage is not enough. Researchers should have a better understanding of what the specific outcomes of strategic alignment are and how they can be measured in order for this line of research to be continued. A key question is "what do the outcomes of strategic alignment really represent?" A common measure, IT capability, provides the answer (see Figure 1). IT capability is "the ability to mobilize and deploy IT-based resources in combination or co-present with other resources and capabilities" (Bharadwaj, 2000). Ross et al. (1996) recognize three dimensions of IT capability: an effective IT-business relationship, a cost-effective and well-managed IT infrastructure, and a strong and responsive IT staff.

The strategic alignment of IT and business strategy builds all three dimensions of IT capability. First, similarities in executives' mindsets that lead to strategic alignment also lead to a stronger IT-business relationship, building the first dimension of IT capability. When a CEO sees as a technologist and a CIO understands the overall vision of the company, both are more supportive of and receptive to each other's agendas. Second, strategic alignment leads to the development of an IT infrastructure that supports the vision of a company, building the second dimension of IT capability. If IT policy and business strategy are aligned, a CEO will want to provide the resources needed for the CIO to create the IT infrastructure needed to support the vision of the company. Third, a CEO in a strategically aligned situation will be motivated to provide the technology training for needed for staff in order to maximize the IT that is supporting the business strategy (Ross et al., 1996), strengthening the last dimension of IT capability.

As outlined above, strategic alignment leads to IT capability, but the question remains of how IT capability is related to business performance. Bharadwaj (2000) answers this question when explaining that not all firms are successful in creating an effective IT capability, and that in any sample of IT spenders "only a small subset of the sample is likely to have the right IT resources in place for achieving competitive advantage." This finding along with our previous discussion of the advantages of aligned IT relationships supports the idea that superior IT capability can provide a sustainable competitive advantage.

Research Hypotheses

We offer the following hypotheses based on our previous discussions:

H1a: The existence of a business savvy CIO leads to a higher level of IT capability.

H1b: The existence of a technologist CEO leads to a higher level of IT capability.

H1c: The existence of both a business savvy CIO and a technologist CEO leads to a higher level of IT capability.

Executives' prior educational and work experiences in technology-related (CEO) and/or business policy-related (CIO) arenas lead to the sharing of mindsets. The sharing of mindsets allows CEO's to think as technologists and CIO's to see the big picture of organizations so that IT is shaped by organizational strategy and that organizational strategy is reshaped by characteristics of IT that enable the vision of the firm.

Methods

The Fortune 1000 list was used to identify high performing companies. In order to control for industry effects, we chose to include only those companies identified on the Fortune 1000 list that were in the insurance industry. We chose the insurance industry as it is heavily dependent on IT. Following the work of Bharadwaj (2000), we used the InformationWeek Innovation 500 list to identify companies that had high levels of IT capability. The two groups for which data was collected were insurance companies that appeared only on the Fortune 1000 list versus those insurance companies that were on both the Fortune 1000 and InformationWeek 500 lists. There were a total of 61 companies on the Fortune 1000 that identified

insurance as their primary industry. Of these 61 companies, 44 appeared only on the Fortune 1000 and 17 appeared on both lists.

In order to test the effect of a business savvy CIO and a technologist CEO, we collected data on the educational or experience background of the CIO's and CEO's of all companies identified in our sample. Data were obtained from biographical information available on corporate web sites, company press releases, and S.E.C. filings. CIO's with a business degree or a previous non-IT related executive position were coded as 1 and those without were coded as 0. Likewise, CEO's with either an IT related college degree or prior IT work experience were coded as 1 and 0 otherwise.

Data Analysis

We conducted t-tests for independent samples using SPSS. The t-test for the effect of a business savvy CIO had a p-value < .001, indicating that the presence of a business savvy CIO had a significant effect. The t-test for the effect of a technologist CEO had a p-value of .128, indicating that the presence of a technologist CEO did not have a significant effect. There were no instances of the presence of both a technologist CEO and a business savvy CIO in the same company, so there was no relationship to test.

Future Research and Limitations

Our next step will be to add organizational performance to our model. If IT capability is greater than that of competitors, a firm may have a competitive advantage and superior financial performance. No previous research has focused on the effect of IT capability on the relationship between strategic alignment and business performance. This effect also suggests that strategic alignment may not always lead to increased business performance. A strategically aligned firm may still have a lower IT capability than competitors, denying it a competitive advantage.

One limitation is we used only one industry to test our model. Testing our model with other industries as our sample will solve this problem. Another major limitation of this study was that many CEOs in the insurance industry come from investment backgrounds. This may have contributed to the lack of CEOs without IT backgrounds. Again, testing our model using other industries may remedy this limitation.

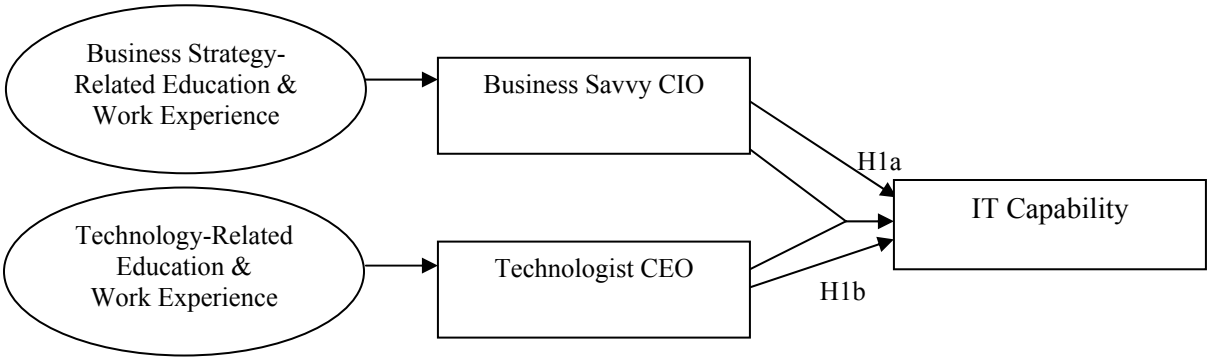
Conclusion

This study integrated several established theoretical ideas to further the understanding of the IT-strategy relationship. We first looked at the roles and positions of IT and business strategy in the organization, and then at their relationship with each other. We proposed that the existence of a technologist CEO and/or a business savvy CIO improves the understanding between the business strategy and IT organizational components, therefore producing a higher level of strategic alignment.

We then examined the outcomes of strategic alignment, hoping to build a foundation for empirical research on the subject. We found IT capability to theoretically be a direct outcome of strategic alignment. Previous research (Bharadwaj, 2000) already suggests that IT capability can be a sustainable competitive advantage and thus foster superior financial performance over similar organizations. If this capability is greater than that of competitors, a firm will have a competitive advantage.

Finally, we tested our model using the Fortune 1000 insurance firms as our sample. Results indicate that firms with a business savvy CIO are more likely to have a higher IT capability than those without a business savvy CIO.

Figure 1. Predictors and Outcomes of Strategically Aligned Planning



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