STRATEGIC IT ALIGNMENT: A MODEL FOR COMPETITIVE ADVANTAGE

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Abstract

This study examines how and why strategic IT alignment can be used to create competitive advantage and to what extent information intensity affects this process. A model is tested to examine how and why strategic IT alignment can produce enhanced organizational knowledge that yields competitive advantage. The model differentiates between alignment between the business plan and IT plan (BP-ITP alignment) and alignment between the IT plan and business plan (ITP-BP alignment). Results support six of the eight hypotheses and conclude that information intensity is an important antecedent to strategic IT alignment, that strategic IT alignment is best explained by multiple constructs which operationalize both process and content measures, and that ITP-BP, but not BP-ITP, alignment is significantly related to the use of IT for competitive advantage.

Keywords: Strategic IT planning, alignment of IT plans with business plans, competitive advantage.

ISRL Categories: AF0401.01, EF0201, EF04, EL0302, AI0104, GA01.

INTRODUCTION

Executives widely acknowledge that information technology investment can produce competitive advantage and that strategic IT alignment is an important predictor of IT investment profitability (Brown and Gatian 1995; Henderson and Venkatraman 1993); particularly so for information intense firms (Sabherwal and King 1991). Why alignment is important to successful investments is little understood.

In a recent London School of Economics survey, CEOs and IT executives stated that over half of their company's IT investments were aimed at gaining a competitive advantage (Compass Group 1999). In a follow-up survey, CEOs revealed growing expectations regarding IT profitability despite the failure of so many investments. CEOs were generally positive and rated IT as the firm's top strategic tool. Furthermore, the CEOs viewed the source of competitive advantage as superior management processes and knowledge, not technology *per se*.

Identifying and cultivating essential organizational processes can improve profitability and result in a competitive organizational asset (Ferrier et al. 1999; Tallon et al. 2000). To achieve success, firms have "had to realign not merely their IT strategy but also their business strategy and to maintain close alignment between the two" (Burns and Szeto 2000, p. 206).

MIS research has noted that organizational learning processes are increasingly important in identifying successful IT-based investments and creating IT enabled change (Markus and Benjamin 1997; Willcocks et al. 1997). Total management involvement empowers employees in regard to IT related decisions. This sharing of knowledge may be the key to sustainable competitive advantage because it leads to more focused IT strategies (Tallon et al. 2000). However, "knowledge by its nature is highly personal and extremely difficult to transfer with richness as complete as the original holder of the knowledge understands it" (Lee 2000, p. 34).

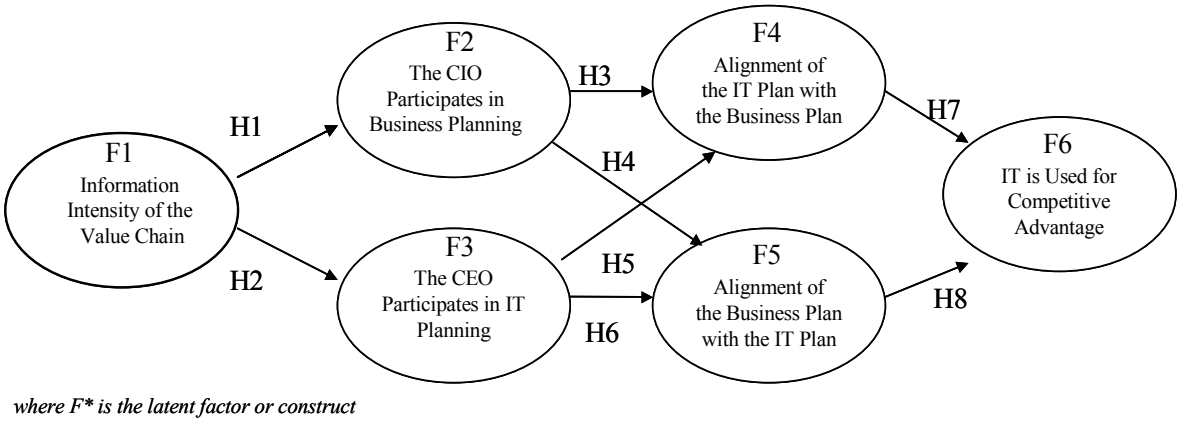


Figure 1. Model of Strategic IS Alignment

This paper seeks to (1) examine the influence of information intensity upon the strategic IT alignment process and (2) assess how and why strategic IT alignment can yield competitive advantage.

THE RESEARCH MODEL AND HYPOTHESES

Strategic IT Alignment and Competitive Advantage

Organizational competitiveness is dependent upon the use of organizational learning processes that can uncover dispersed knowledge capable of rendering superior organizational performance (Hunt 1999). While executives are aware that many business successes are the result of fortuitous circumstances, they would prefer to have a future controlled by experienced judgment rather than mere chance.

Strategic IT alignment is an organizational learning process that combines business and IT knowledge in order to support business objectives (Reich and Benbasat 1996). It can positively affect organizational profitability by creating superior strategies that achieve a competitive advantage. Alignment also includes the set of explicit outcomes contained in the business plan and IT plan (Earl 1993; Chan et al. 1997).

The study model in Figure 1 consists of six constructs, labeled F1 through F6, connected by paths signifying theorized causal relationships. A discussion of the model constructs and study hypotheses follows.

Information Intensity and Planning Participation

In this study, information intensity (F1) is defined as the extensiveness of the information component in value chain activities and is measured by the level of accuracy, frequency of updates, and the magnitude and extent of information in operations (Busch et al. 1991; Porter and Millar 1985). Because of its value (Hunt 1999), information intense firms cultivate processes of information acquisition, assimilation, and conversion (Nambisan et al. 1999) and are more likely to use IT in a strategic role (Sabherwal and King 1991).

Planning participation refers to the collaborative participation of the CIO in business planning and the CEO in IT planning. CIO participation is measured by participation in planning meetings, formulation of business goals, frequent access to the CEO, and regular informal contacts with other members of top management (Lederer and Mendelow 1989; Raghunathan and Raghunathan 1989; Sambamurthy and Zmud 1999). CEO participation is measured by regular contacts with the CIO, involvement on an IT steering committee, knowledge about competitor's use of IT, knowledge about IT opportunities within the firm, and treatment of IT as a strategic resource rather than a cost (Jarvenpaa and Ives 1991; Lederer and Mendelow 1988).

CIO and CEO collaboration in business/IT planning promotes organizational learning, results in more effective utilization of organizational knowledge (Bharadwaj 2000), and positions firms to create superior IT-based strategies (Johnston and Carrico 1988). Hence, the following hypotheses:

H1: Information intensity is positively associated with the CIO's participation in business planning.

H2: Information intensity is positively associated with the CEO's participation in IT planning.

CIO Participation in Business Planning and Alignment

CIOs who participate in business planning (F2), are more likely to understand business objectives and to link IT strategies closely with organizational strategies (Jones et al. 1995). CIO participation in organizational planning furthers the assimilation of technical and business knowledge and supports the goals of the business by creating alignment between IT and business strategies (Andreau and Ciborra 1996).

We define strategic IT alignment as two sets of outcomes: the alignment of the IT plan with the business plan (ITP-BP alignment) and the alignment of the business plan with the IT plan (BP-ITP alignment). ITP-BP alignment occurs when the business plan goals and strategies are reflected in the IT plan goals and strategies, and when the ITP reflects external environmental forces (King 1978; Teo and King 1997). BP-ITP alignment occurs when the business plan contains realistic expectations about IT performance, utilizes the strategic capability of IT, and references specific information systems and technologies (Goldsmith 1991; Lederer and Mendelow 1989; Sabherwal 1989).

Information intense firms cannot exclude CIOs from the planning process. Because of the potential that information has for enabling business initiatives, it is important that top management understands "the critical importance of establishing appropriate IT decision rights to direct and coordinate an organization's effective use of and exploitation of IT" (Sambamurthy and Zmud 1999, p. 282). Hence, the following hypotheses:

H3: The CIO's participation in business planning is positively associated with the alignment of the IT plan with the business plan (ITP-BP alignment).

H4: The CIO's participation in business planning is positively associated with the alignment of the business plan with the IT plan (BP-ITP alignment).

CEO Participation in IT Planning and Alignment

CIOs may envision IT-based strategies that are difficult for other managers to comprehend (Nambisan et al. 1999). When the CEO participates in IT planning (F3), however, other managers are motivated to become familiar with and make innovative use of IT (Jarvenpaa and Ives 1991). CEOs have the power to set "clear examples for their colleagues regarding the need to give quality time to IT (Earl and Feeny 2000, p. 17)." When management participates in IT planning, it fosters an appreciation for what is "meaningful and relevant" and promotes the combining of business with IT knowledge (Hann and Weber 1996). Furthermore, CEO participation is an effective mechanism for breaking down barriers to organizational learning imposed by hierarchical structures (Brown 1999), and is directly related to the quality of the IT plan outcomes (Byrd et al. 1995). Management's perspective on IT can impact the extent of process change undertaken (Broadbent et al. Thus, collaborative participation can support the alignment of IT goals and strategies with business goals and strategies.

Operating alone, CIOs are likely to craft inferior strategies because they do not understand the exact nature of how firm resources can create a competitive advantage (Schoemaker and Amit 1994; Tallon et al. 2000). When other managers participate collaboratively, business strategies will more likely reflect specific information technologies, have rational expectations of IT, and use IT strategically, which accomplished BP-ITP alignment. Hence, the following hypotheses:

H5: The CEO's participation in IT planning is positively associated with the alignment of the IT plan with the business plan (ITP-BP alignment).

H6: The CEO's participation in IT planning is positively associated with the alignment of the business plan with the IT plan (BP-ITP alignment).

Alignment and Competitive Advantage

In this study, the dependent variable—IT is used for competitive advantage—was operationalized by strategic IT applications that directly influence and defend against the five competitive forces (Porter 1980). Superior strategies use IT to lower product costs, create product differentiation, increase customer switching costs, combat competitors, and raise market entry barriers (Parsons 1983; Porter and Millar 1985).

Organizational knowledge allows some firms to achieve a competitive advantage and explains why firms treat organizational learning processes as valuable assets (Hunt 1999, 2000). Explicit articulation of this knowledge is embodied in the alignment outcomes. ITP-BP alignment supports the use of IT for competitive advantage by the more accurate mapping of IT strategies to business strategies.

BP-ITP alignment, accomplished by the explicit declaration of IT within the business plan, supports the use of IT for competitive advantage because explicit articulation IT in business strategies improves implementation. This requires managers to be more knowledgeable of IT opportunities, and can lead to an IT-based competitive advantage because of heightened internal consistency and improved implementation. Hence, the following hypotheses:

H7: Alignment of the IT plan with the business plan is positively associated with the use of IT to provide competitive advantage.

H8: Alignment of the business plan with the IT plan is positively associated with the use of IT to provide a competitive advantage.

RESEARCH METHODOLOGY

The Research Instrument

This study used a questionnaire that contained items measuring the six constructs and general demographics. Survey questions used a seven-point Likert-type scale anchored at strongly disagree (1) and strongly agree (7). These questions appear in Table 1.

Instrument refinement was accomplished using four MIS professors and eight executives from four different industries. Comments from the pilot were incorporated into the final instrument.

Using a random sample of 1,200 companies including all industries except government and non-profit institutions, surveys were sent directly to CIOs of companies with at least $75 million in annual revenues. The mailing list was purchased from a commercial firm that offered a large database of U.S. companies identifiable along several attributes that had been updated within the past 18 months. Participants were guaranteed confidentiality of responses and were offered an executive level summary of responses as an incentive.

This study is based on the perceptions of a single informant. However, CIOs were advised that results were completely anonymous; thus, any motivation for exaggeration and self-promotion was reduced. When single informants are used, it is necessary to select the most experienced and knowledgeable person (Huber and Power 1985). Surveys were sent directly to CIOs who, by virtue of their position, have been exposed to the views of other senior executives as well as those of peers and subordinates.

Survey Results

Over 150 of the surveys were returned stating that the addressee had moved and a forwarding address was unavailable. (This may reflect high CIO turnover rates.) A total of 161 usable surveys were returned over a six week period. Direct contact with over 400 of the non-responding companies revealed that 22% of the surveys had been intercepted by the CIO's secretary and discarded in accordance with company policy. Since these surveys did not reach the intended informer, they should not be included (Armstrong and Overton 1977). The unadjusted response rate was 13.4%. Adjusting for the 150 returned surveys plus 264 discarded (22%), the adjusted response rate would be 20.5%.

Respondents had an average of 5.1 years of college education and 20 years of experience within the IT area. Table 2 presents a list of industries surveyed.

Non-Response Bias

Non-response bias was investigated by comparing the average values for each of the constructs for weekly time intervals in which the completed surveys were received (Armstrong and Overton 1977). T-tests of the mean differences for each of the constructs failed to reveal any significant difference or trends over the six week period. Results suggested the absence of non-response bias.

Table 1. Study Constructs and Survey Questions

Constructs and Survey Questions	
(F1)	Information Intensity of the Value Chain (Adapted from Teo 1994)
V1.	Information is used to a great extent in our production or service operations.
V2.	Information used in our production or service operations is frequently updated.
V3.	Information used in our production or service operations is usually accurate.
V4.	Many steps in our production or service operations require the frequent use of information.
(F2)	The CIO Participates in Business Planning The IT executive...
V5,	regularly attends business planning meetings.
V6.	contributes to the formulation of business goals.
V7.	has regular informal contacts with top management.
V8.	has easy access to the CEO.
V9.	has frequent contacts with the CEO.
(F3)	The CEO Participates in IT Planning (Adapted from Jarvenpaa and Ives 1991) The CEO...
V10.	plays an important role in the corporate IS steering committee.
V11.	becomes knowledgeable about competitors' use of IS.
V12.	has frequent informal contacts with IS management.
V13.	becomes knowledgeable about IS opportunities within the firm.
V14.	regards spending on IS as strategic investments rather than expenses to be controlled.
(F4)	Alignment of the IT Plan with the Business Plan
V15.	The IS Plan reflects the business plan mission.
V16.	The IS Plan reflects the business plan goals.
V17.	The IS Plan supports the business strategies.
V18.	The IS Plan recognizes external business environment forces.
V20.	The IS Plan reflects the business plan resource constraints.
(F5)	Alignment of the Business Plan with the IT Plan
V19.	The Business Plan refers to the IS Plan.
V20.	The Business Plan refers to specific IS applications.
V21.	The Business Plan refers to specific information technologies.
V22.	The Business Plan utilizes the strategic capability of IS.
V23.	The Business Plan contains reasonable expectations of IS.
(F6)	IT is Used to Create a Competitive Advantage With respect to our company's core products or services and major customers and suppliers, IS has been used to...
V25.	provide advantages such as lower costs or product differentiation.
V26.	make it more costly for our customers to change suppliers.
V27.	establish electronic links with suppliers or customers.
V28.	create barriers to keep competitors from entering our markets.
V29.	influence the buyer's decision to switch to our products.
Constructs were not identified in the survey. They have been added in this table for the reader's convenience.	

Table 2. Survey Response by Industry

Industry	Frequency	Industry	Frequency
Manufacturing	50	Health Care	2
Wholesale/Retail	24	Legal	2
Utilities and Communications	20	Restaurants	2
Construction	8	Transportation	2
Finance	8	Agriculture	1
Publishing/News	7	Education	1
Computers	5	Hotels	1
Consumer Products	4	Insurance	1
Petroleum	3	Mining	1
Aerospace	2	Pharmaceuticals	1
Auto/Heavy Industry	2	Other	14
		total responses	161

DATA ANALYSIS

Study data were analyzed using structural equation modeling (SEM) in which parameters are estimated by minimizing the discrepancy between the model implied covariance matrix and the observed covariance matrix.

The Measurement Model

Modifications were made to the original measurement model in order to achieve a proper fit. Respecification omitted three multidimensional variables—V8, V9, and V23—to simplify evaluation (Anderson et al. 1987, MacCallum et al. 1992). Standardized factor loadings and measures of reliability and validity for the final measurement model are presented in Table 3. All of the six Cronbach alpha coefficients and composite reliability indices exceed the recommended minimum of .60. Standardized factor loadings are generally high (only one is less than .60) and significant ($t > 2.96$) for all measures.

Reliability and Validity

Internal consistency of the indicator variables was established using Cronbach's alpha and the composite reliability index (Fornell and Larcker 1981). Goodness-of-fit was measured by multiple indices to negate bias associated with a single index. The indices used for this study were the Normed Fit Index, the Non-Normed Fit Index, the Comparative Fit Index, the Average Absolute Standardized Residual, the Satorra-Bentler CFI, the Standardized Root Mean Squared Error, and the ratio of chi-square to degrees of freedom (χ^2/df). Table 4 presents goodness-of-fit indices for the final measurement model, which were generally within the recommended ranges (Harvey et al. 1985).

Evidence of construct validity was provided by measures for content validity, convergent validity, and discriminant validity. Content validity was based upon the pilot test (Cronbach 1971). Convergent validity was established by the high factor loadings and high levels of significance for the indicator variables. Evidence for discriminant validity was established by three tests.

First, the variance-extracted estimates in Table 3 revealed that five of the six constructs explain 50% or more of the variance. This demonstrates the ability of the measures to discriminate between constructs.

Second, a chi-square difference test was conducted to assess discriminant validity between theoretically related constructs that are highly correlated to ensure that they are really measuring different phenomena. Factor correlations of three sets of constructs that had theoretical associations were sufficiently high to question whether or not combining each set of measures into a single construct would provide about the same results with a more parsimonious model. Given the theoretical association of their underlying constructs, these were sufficiently high to warrant attention. In three separate tests, the correlation between associated factors was set to 1. For each test, the χ^2 difference exceeded the critical χ^2 value ($p = .001$) indicating that each construct indeed measures a unique phenomenon.

Table 3. Properties of the Final Measurement Model

Construct and Indicators	Standardized Loading	t-value	Reliability		Variance Extracted Estimate
Value Chain (F1)			.88[a]	.81[b]	.51
V1	.81	11.55	.65[c]		
V2	.93	13.99	.83		
V3	.64	8.52	.41		
V4	.76	11.21	.57		
CIO Participation (F2)			.92	.83	.67
V5	.91	14.29	.83		
V6	.98	16.29	.96		
V7	.66	9.06	.44		
CEO Participation (F3)			.93	.82	.54
V10	.70	9.62	.49		
V11	.84	12.63	.71		
V12	.78	11.25	.61		
V13	.91	14.40	.83		
V14	.85	12.82	.72		
ITP–BP Alignment (F4)			.96	.88	.59
V15	.94	15.40	.88		
V16	.97	16.40	.91		
V17	.91	14.59	.83		
V18	.71	9.99	.50		
V19	.61	8.30	.38		
BP–ITP Alignment (F5)			.95	.85	.59
V20	.89	13.98	.80		
V21	.93	14.87	.86		
V22	.90	13.84	.79		
V24	.68	9.39	.47		
Competitive Advantage (F6)			.76	.67	.34
V25	.75	9.92	.56		
V26	.48	5.79	.23		
V27	.61	7.61	.37		
V28	.67	8.62	.45		
V29	.61	7.58	.37		

[a]Cronbach Alpha Coefficient [b]Composite Reliability [c]Indicator Reliability

Table 4. Final Measurement Model: Goodness of Fit Indices

Test Statistic	Study Value	Prescribed Value
Average Absolute Standardized Residual	.04	< 1.0
Chi-Square	437.72	
degrees of freedom (df)	284	
χ^2/df ratio	1.54	< 2.0
Normed Fit Index	.86	≥ .90
Non-Normed Fit Index	.94	≥ .90
Comparative Fit Index	.95	≥ .90

Third, a confidence interval test was performed on the same three sets of factors. For each test, the confidence intervals did not include the value of 1.0, suggesting it is statistically unlikely that the population correlation between the factors is 1.0.

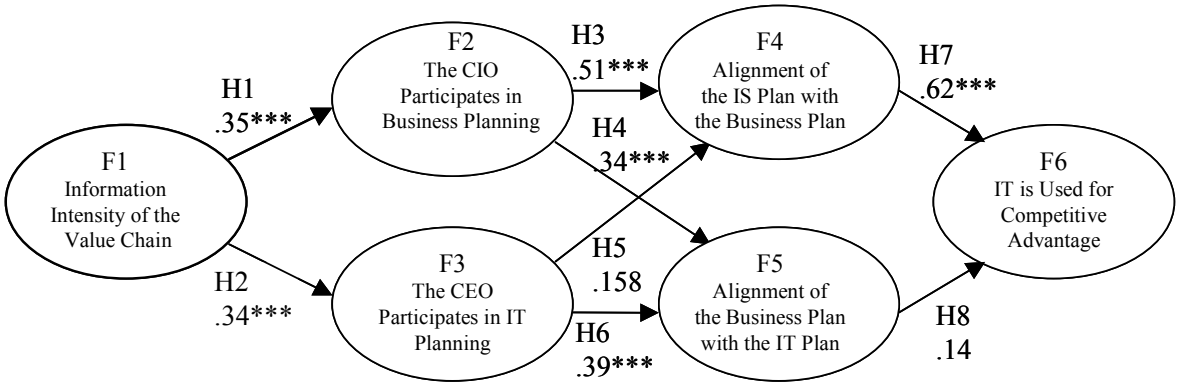
The Structural Model

A structural model was specified based on the final measurement model and the hypothesized paths. Initial fit indices were unsatisfactory. The Lagrange multiplier test identified several pairs of disturbance terms and error terms that, if allowed to covary, would improve model fit. Correlated errors indicate that the variation in the measurements is produced by something other than or in addition to the underlying theoretical concepts and random error. Allowing these terms to covary did not detract from the theoretical meaning of the model. Specifically, the three pairs of terms were the error terms associated with the variables V15 through V16 and V26 through V28 and the disturbance terms associated with the constructs F2 and F3.

RESULTS

The final revised research model with path coefficients appears in Figure 2. The model accounts for approximately half of the variation in the dependent variable (R^2 = .50). Thus, the model is reasonably successful in positively relating alignment to organizational performance.

Table 5 shows that the goodness-of-fit indices in the final structural model were well within the prescribed range. Table 6 shows that six of the eight hypotheses were supported.



*, **, *** significance level of t-values is p < .05, .01, and .001 respectively.
Dependent variable R^2 = .50.

Figure 2. Final Structural Model with Path Coefficients

DISCUSSION

The first study goal was to examine the influence of information intensity on alignment processes. Information intensity was found to positively and significantly influence both the participation of the CIO in business planning (H1) and the participation of the CEO in IT planning (H2).

The second study goal was to assess how and why strategic IT alignment can yield competitive advantage. Four constructs, composed of process and outcome measures, represented the alignment mechanism. Participation by the CIO in business planning was strongly associated with both ITP-BP (H3) and BP-ITP (H4). Thus, we have evidence consistent with the expectation that the CIO's increased participation improves alignment of IT strategies with business strategies and promotes the identification of explicit information systems and technologies in business strategies.

Table 5. Final Structural Model: Goodness of Fit Indices

Test Statistic	Study Value	Prescribed Value
Average Absolute Standardized Residual	.06	< .10
Chi-Square	440.59	
degrees of freedom	287	
χ^2/df	1.54	< 2.0
Non-Normed Fit Index	.94	≥ .90
Comparative Fit Index	.95	≥ .90
Satorra-Bentler CFI	.96	≥ .90
Standardized Root Mean Squared Error	.05	< 1.0

Table 6. Support for Study Hypotheses

Hypothesis	Supported	Beta (significance)	T-value
H1: Information intensity of the value chain is positively associated with the CIO's participation in business planning.	Yes	.35 (p < .001)	4.25
H2: Information intensity of the value chain is positively associated with the CEO's participation in IT planning.	Yes	.34 (p < .001)	4.01
H3: The CIO's participation in business planning is positively associated with the alignment of the IT plan with the business plan.	Yes	.51 (p < .001)	5.39
H4: The CIO's participation in business planning is positively associated with the alignment of the business plan with the IT plan.	Yes	.34 (p < .001)	3.70
H5: The CEO's participation in IT planning is positively associated with the alignment of the IS plan with the business plan.	No	.16 (p < .10)	1.69
H6: The CEO's participation in IT planning is positively associated with the alignment of the business plan with the IT plan.	Yes	.39 (p < .001)	4.15
H7: Alignment of the IT plan with the business plan is positively associated with the use of IT to provide competitive advantage.	Yes	.62 (p < .001)	5.72
H8: Alignment of the business plan with the IT plan is positively associated with the use of IT to provide competitive advantage.	No	.14 (p < .15)	1.42

Also, participation by the CEO in IT planning was strongly associated with BP-ITP (H5). Thus, we have evidence consistent with the expectation that when the CEO participates in IT planning, explicit information systems and technologies will more likely be identified in business strategies. Why, then, was a significant relationship between the CEO's participation and ITP-BP (H6) not found?

Part of the answer may lie in the responses for the constructs for CIO participation and CEO participation, 5.1 and 4.4 respectively. The importance of the CEO's participation to the successful implementation of IT applications has been noted (DeLone 1988). Limited participation by the CEO in IT management may result from a lack of understanding about IT issues and IT resources (Jarvenpaa and Ives 1991). With less CEO participation, however, other business executives will less likely participate and the alignment of IT strategies to business strategies will suffer.

Also, it has been noted that many CEOs state that they support the strategic role of IT but, in reality, their actions do not confirm their message (Earl and Feeny 2000). In the current research, such behavior might account for the lower means and non-significant relationship between CEO participation and ITP-BP alignment.

Finally, ITP-BP alignment (H7), but not BP-ITP alignment (H8), was positively and significantly related to the use of IT for competitive advantage. The lack of a significant relationship between BP-ITP and the use of IT for competitive advantage implies missed opportunities: organizations may not be taking advantage of organizational learning by failing to record and disseminate their knowledge.

Recently, MIS research has characterized the CEO as being IT-savvy and supportive of IT's strategic role. This study contradicts that view. Here we see that CEO participation is lukewarm and that strategic IT alignment remains the primary burden of the CIO.

Implications for Researchers

This study shows that the CIO continues to play the stronger role in IT planning and the promotion of explicit reference to IT in the business plan. The study confirms, as in past empirical research, a strong and significant relationship between ITP-BP alignment and the use of IT for competitive advantage.

Lack of an association between BP-ITP alignment and the use of IT for competitive advantage should inspire researchers. If we accept the importance of organizational learning, then effective implementation of IT-based business strategies depends upon the specific reference to IT in the business plan. Clear acknowledgement of IT in business strategies might spur innovation through CIO and CEO collaboration. Explicit alignment outcomes assist in understanding and implementing strategies.

Implications for Practitioners

Both the process and content items in the multidimensional model of strategic IT alignment have important implications for practitioners. First, study results indicate that information-intensive firms place increased emphasis on collaboration in business and IT planning. In order to be competitive, CIOs may wish to focus on and cultivate management processes that combine business and IT knowledge, particularly those routines that allow for the creative exchange of domain knowledge in order to achieve superior strategies.

Second, respondents in this study perceived participation of the CIO in business planning as being important to the content of both the business plan and the IT plan. Where managers are not IT-literate, CIOs might consider a relationship manager to support integration of technical and business knowledge (Nambisan et al. 1999) and increase the efficacy of IT-adoption through an environment that encourages "experimentation and exploration with new technologies" (Agarwal and Karahanna 2000, p. 688).

Future Research

Future research could refine and further elucidate this framework by testing new measures or continuing to validate existing ones. Further inquiry is needed to (1) examine the proper role of CEO participation; (2) determine the value of BP-ITP alignment; and (3) increase our understanding of how IT knowledge can best be combined with other domain knowledge.

Validation of these constructs and the use of dual informants in a future instrument would strengthen their reliability.

CONCLUSIONS

This paper makes three important contributions: It contributes to our understanding of both the process and outcome dimensions of strategic IT alignment; it provides an explanatory framework of the alignment-competitive advantage relationship; and it provides a new dependent variable, heretofore untested although grounded in MIS theory.

Alignment can be viewed as being composed of multiple process and content measures that represent participation by all areas of management. Evidence suggests that the CIO continues to support the IT planning process and is primarily responsible for identifying which information systems and technologies will support or enable business strategies.

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