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**ORGANIZATIONAL CULTURE:  
ANOTHER PIECE OF THE IT-BUSINESS ALIGNMENT PUZZLE**

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**ABSTRACT**

The challenges associated with achieving a better fit between an organization's information technology (IT) strategy and its business strategy – most commonly known as “IT-business alignment” – have earned this issue a place as an IT management perennial top ten concern for organizational executives. Not surprisingly, the problems associated with attaining higher levels of IT-business alignment have received continuing notice in IT-related trade journals. A stream of research in the management information systems (MIS) literature includes multiple studies exploring the IT-business alignment construct and attempting to identify solutions for achieving a needed degree of alignment. Two dimensions of IT-business alignment, structural and strategic, have been proposed and studied in some detail, but the relationship between informal organizational structure as indicated by organizational culture and the achievement of IT-business alignment has yet to be empirically explored.

This research reported here breaks new ground by evaluating the relationship between the degree of congruence of the perspectives of the prevailing organizational culture and the level of strategic alignment maturity perceived in organizations. The results reveal a significant association between executives' level of agreement on the prevailing organizational culture and the level of strategic alignment maturity of the firms in the sample: firms with more congruent cultures had higher levels of strategic alignment maturity. The study results hold two implications for the field of management information systems. First, the potential of a third dimension of the achievement of IT-business alignment, congruence of organizational culture, was supported. Second, the results indicate the need for a continuation of research to further investigate the potential of this relationship for improving an organization's IT-business alignment.

**Keywords:** Organizational culture, IT-business alignment, IT strategy, maturity, congruence.

## INTRODUCTION: THE CONTINUING EXPLORATION OF IT-BUSINESS ALIGNMENT

While there is little doubt that progress has been made in achieving a better understanding of how to improve organizational success in IT-business alignment, the fact that this issue remains a top concern of CIOs and CEOs after 30 years of work by both practitioners and academicians is perplexing. A stream of research in the management information systems literature is represented by studies exploring the IT-business alignment construct and by studies attempting to identify solutions for achieving a needed degree of alignment. The problems stemming from a less than optimal degree of alignment between the IT and business strategies in organizations have received continuing attention in IT-related trade journals. The fact that this issue is a perennial contender for inclusion on lists of top management problems for high-level IT managers dictates the need for further study, particularly in an effort to uncover additional factors contributing to the problem<sup>1</sup>.

A number of examples of the dampening effect of a less than optimal level of IT-business alignment on organizational performance are found in the research literature. First, IT investments are likely to be high in cost and provide low return on investment. Difficulty in identifying IT applications with high business potential may also result. Business executives may face difficulties in attempting to communicate IT-related needs for strategic initiatives. Both business executives and business partners of the organization will likely express frustration over the overall poor performance of the IT function. And finally, the sub-optimal work environment caused by alignment problems will contribute to the attrition of talented IT personnel from the organization.

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<sup>1</sup> Alignment has been named a top IT management issue in the continuing Society for Information Management (SIM) Key Issues reports since 1987, e.g., Brancheau, J. C., Janz, B. D., and Wetherbe, J. C. "Key issues in Information Systems Management: 1994-95 SIM Delphi Results," *MIS Quarterly* (20:2), June 1996, pp.225-242; Luftman, J. "Key Issues for IT Executives," *MIS Quarterly Executive* (3:2), June 2004, pp.89-104; Luftman, J. "Key Issues for IT Executives 2004," *MIS Quarterly Executive* (4:2), June 2005, pp.269-285; Luftman, J., Kempaiah, R., and Nash, E. "Key Issues for IT Executives 2004," *MIS Quarterly Executive* (5:2), June 2006, pp. 81-99.

Two major dimensions, a strategic dimension and a structural dimension, of IT-business alignment have been proposed and studied. To date, three recurring themes related to the strategic dimension have been identified as prescriptive measures for improving the degree of IT-business alignment achieved in organizations: 1) elevation of the IT function to a strategic level in the organization, 2) full integration of IT strategic planning with the business strategic plan, and 3) incorporation of the organizational vision in strategic IT initiatives. However, a careful consideration of the research to date, along with the continuing recognition in practitioner journals of problems associated with the achievement of alignment, clearly indicate that much work, both in research and in practice, on this problem remains to be done.

In addition to the structural and strategic components of IT-business alignment, the potential of an additional component, informal organizational structure, has yet to be explored in depth. Chan [2] has proposed that the informal organizational structure is more important in the achievement of alignment than had previously been recognized, describing it as a "third, perhaps hidden, component of alignment." Probably the most appropriate candidate for indicating the nature of informal organizational structure is organizational culture. In fact, Chan's proposition suggests the possibility that organizational culture is a moderating factor in the achievement of IT-business alignment.

A first step in exploring this potential relationship between organizational culture and IT-business alignment lies in determining which aspects of organizational culture might illuminate this issue. Because the concept of "fit" lies at the heart of the IT-business alignment concept, the level of agreement – or "degree of congruency" – among organizational executives and managers on the prevailing type of organizational culture present in a company would seem to serve this exploration well. Specifically, as an indicator of informal organizational structure, the assessment of the degree of congruency of organizational culture within organizations supports a comparison of informal organizational structure to the degree of achieved IT-business alignment.

In light of Chan's proposition and the continuing, problematic nature of achieving IT-business alignment in organizations, the motivation for conducting this study was to provide new information about IT-business alignment. Consequently, this research was conducted to explore the relationship between organizational culture and IT-business alignment in organizations. To support this purpose, this study was specifically designed to explore the nature of the relationship between the congruency of perceptions of the prevailing organizational culture, as an

indicator of informal organizational structure, and the perceived maturity level of IT-business alignment achieved in organizations. The results of this research provide additional knowledge about IT-business alignment in organizations.

## THE ROLE OF IT-BUSINESS ALIGNMENT IN ORGANIZATIONS

Organizational alignment is a recurring issue found in the strategic management literature. As such, it provides a basis for understanding the context of IT-business alignment. Organizational alignment has been identified as one of six subsets dealing with the environmental domain of organizations [1]. It is most typically characterized as the “fit” between an organization’s strategy and its context, both internal and external. As an issue in strategic management, the achievement of organizational alignment has been associated with an increase in organizational performance [17]. Organizational alignment theorists have identified internal and external environmental dimensions of this adaptation process. Complicating matters, it has been argued that there is no one optimal organizational structure and that different organizational structures are not equally effective [10]. Thus, ef-

forts to achieve organizational alignment present never-ending challenges for selecting and implementing effective organizational strategies.

IT-business alignment can be considered as a subset of the organizational alignment issue. Among the various definitions of IT-business alignment available in practitioner and academic publications, a recurring theme is the interrelationship between the business and IT entities in organizations. Specifically, all of these characterizations and definitions provide a premise from which the extent of the “fit” between these two entities can be used to qualitatively characterize the degree of alignment achieved. The dimensions of the relationship commonly identified are strategic, structural, or both.

### Modeling IT-Business Alignment

Several models of alignment have been proposed. Chan and Huff’s Conceptual Model [6] depicts IS strategic alignment as the result of the fit between IS and business strategies in organizations. The resulting IS strategic alignment is shown as having a direct impact on both business performance and IS effectiveness. This model is displayed in Figure 1.

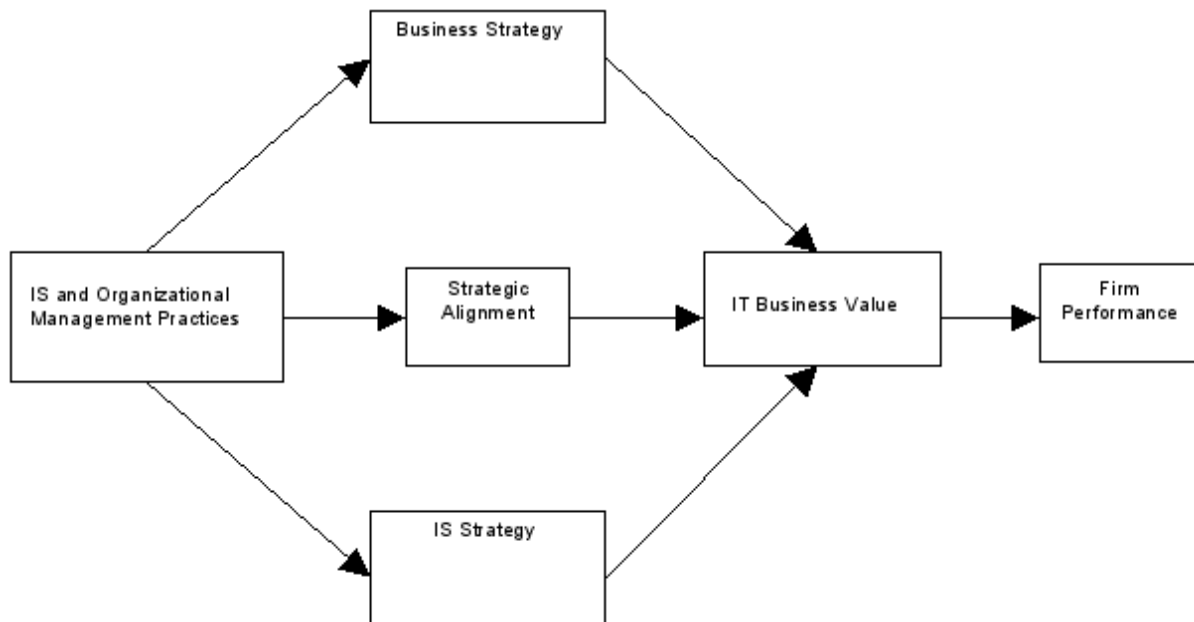


Figure 1: Conceptual Model of IS Strategic Alignment

In a similar vein, Tallon and Kraemer's Conceptual Model of Strategic Alignment [29] describes a process of management practices determining a business strategy and an IS strategy, which collectively set the stage for

strategic alignment. The outcome of the deployment of the business and IS strategies and the resulting strategic alignment has a direct impact on IT business value in the organization. This model is depicted in Figure 2.

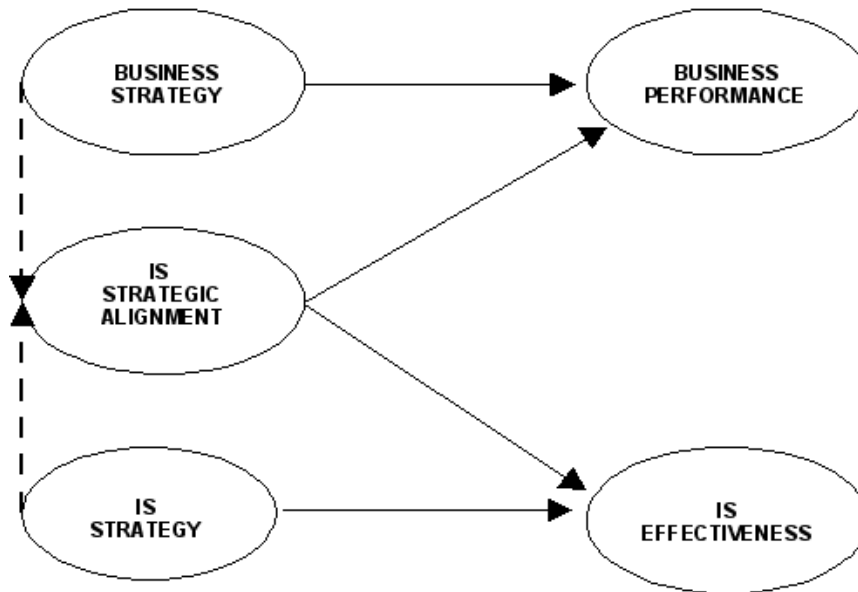


Figure 2: Conceptual Model of Strategic Alignment

The most widely cited and applied of these alignment models and frameworks is Henderson and Venkatraman's Strategic Alignment Model [12], which proposes a multidimensional orientation of the alignment construct. As illustrated in Figure 3, alignment in an organization results from the fit between and integration of business and IT strategies and infrastructures.

### A Social Dimension of Alignment

None of the models and frameworks previously depicted and discussed directly indicates the potentiality of a social dimension of alignment. Reich and Benbasat [26] proposed four potential social dimensions that may affect alignment: the shared domain knowledge of business and IT executives, the communications between those executives, the success of IT implementation, and

the connectivity of business and IT planning processes. Although organizational culture is not explicitly referenced among these dimensions, it would seem reasonable to assume that all four of these social dimensions would be affected by the prevailing organizational culture.

### Existing Knowledge on IT-Business Alignment

Multiple research studies related to IT-business alignment are available in the management information systems literature. The scope of the topics of those studies includes considerations of dimensions of alignment encompassing its antecedents, structure, enabling factors, inhibiting factors, and organizational outcomes.

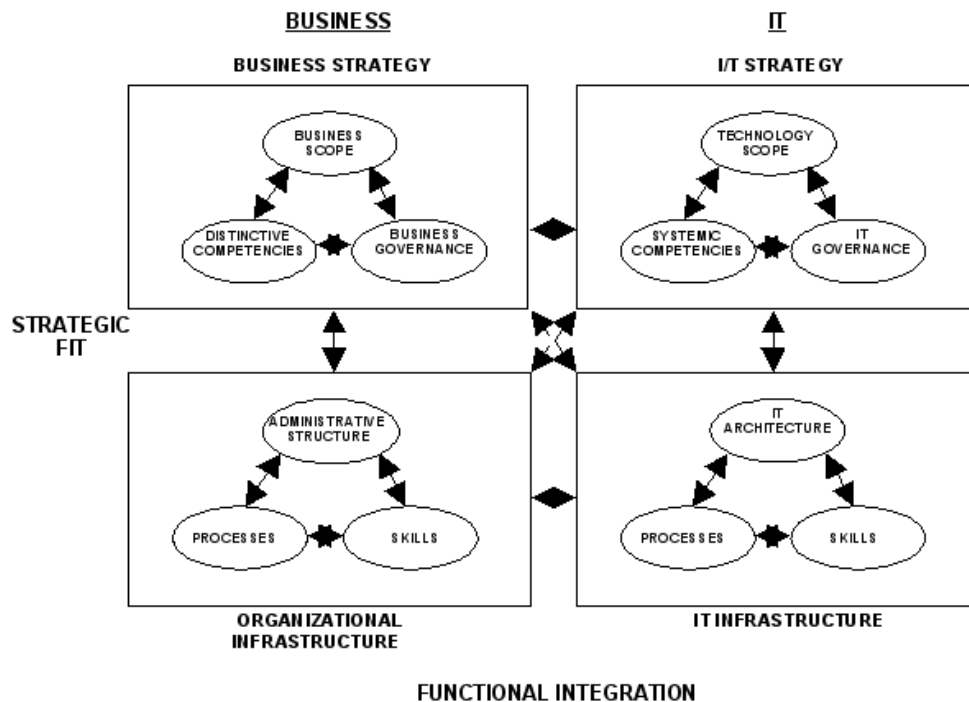


Figure 3: The Strategic Alignment Model

Brown and Magill [2] studied three pairs of Fortune 500 companies to identify potential antecedents to IS alignment decisions resulting in the achievement of some level of alignment between the IT and business functions in organizations. They found that the antecedents were related to the locus of the control structure for IT in the organization. They observed differences in the antecedents for IS alignment decisions among organizations with centralized, decentralized, or some hybrid between centralization and decentralization control structures. In the literature review conducted in preparation for this study, this was the only study that included a consideration of organizational culture as a potential factor in alignment. Here, culture was found to be a cause of misalignment as an emerging corporate culture of strong business unit autonomy led to dissatisfaction with a centrally administered IT function.

Other studies have produced results indicating potential strategies for promoting better IT-business alignment and their resulting payoffs. These studies have produced the following findings: 1) alignment between business and IS strategies positively influences the effectiveness of company IS [6]; 2) IS planning promotes

alignment, which in turn produces greater IS-based competitive advantage [13]; 3) Shared domain knowledge and strategic business plans both influence short and long-term alignment [26]; 4) Firms with close alignment between IT and business strategy have higher perceived payoffs from IT [25, 29]; and 5) Alignment of organizational and technological infrastructures enhances business performance [7].

Chan and Huff [6] used the results of a survey to propose a conceptual model for alignment in which the degree of IS strategic alignment results from the quality of the fit between businesses and IS strategy. This achieved degree of alignment, in turn, has a direct impact on business performance and IS effectiveness. As previously mentioned, Reich and Benbasat [26] investigated what they termed as the “social dimension of alignment.” In their study, domain knowledge shared by IT and business executives was found to influence continuing alignment, and strategic business plans were found to influence alignment in both short- and long-term contexts.

Kearns and Lederer [13] studied the relationship between IS and business planning in the context of the achievement of alignment. They found that participation

of IS executives in business planning and the participation of business executives in IS planning were significant factors in the achievement of alignment between IS and business plans. Similarly, Preston and Karahanna [23] suggest that having a shared vision between IT and its respective business partners is crucial to alignment.

Based on the survey results from a multi-year study, Luftman, Papp, and Brier [16] identified the top enablers of and inhibitors to the achievement of alignment. The outcomes of this study emphasized the importance of close working relationships between IS and business executives along with IT's understanding of the business and involvement in the strategic business planning process. The importance of close relationships between IS and business executives and cross-domain knowledge was also noted in this study.

Other studies have explored the organizational outcomes of the achievement of higher level of alignment. Tallon, Kraemer, and Gurbaxani [29] concluded that higher levels of strategic alignment were associated with higher perceived business value of IT. Higher levels of alignment have also been found to enhance business performance [7].

### Measuring IT-Business Alignment

Based on a review of the empirical work on IT-business alignment, Luftman's Strategic Alignment Maturity Assessment instrument [14, 15] was adopted for use in this study. Luftman's work is widely cited in the alignment literature, and the development of this instrument was based on an extensive program of research on IT-business alignment. This instrument, which the author notes has been successfully tested in over 60 Global 2000 organizations [15], delineates and measures six categories of alignment: communication, metrics, governance, partnership, technology, and human resources. These categories are used as the basis for the criteria assessed by the instrument.

As a result of application of this instrument, an overall level of alignment achieved in an organization can be determined. According to Luftman, there are five levels of alignment maturity possible: Level 1 - Initial /Ad Hoc Process, Level 2 – Committed Process, Level 3 – Established Focused Process, Level 4 – Improved/Managed process, and Level 5 – Optimal Process (Complete Alignment). A benchmark drawing from the administration of this instrument with 50 Global 500 firms shows that over 80% of the firms sampled exhibited characteristics of Level 2, or Committed Process, with some characteristics of Level 3, or Established Focused Process, strategic alignment maturities.

To calculate an overall level of alignment, the individual responses from the administration of the Strategic Alignment Maturity Assessment instrument in an organization are aggregated, and an organizational average is calculated from the responses represented in the aggregate. The resulting average signifies the level of alignment maturity present in the organization.

## UNDERSTANDING ORGANIZATIONAL CULTURE

Organizational culture has been identified as an important management issue since the 1980s, and it has been the subject of numerous studies found in the management literature. Specifically, organizational culture has been studied as a facet of organizational behavior.

In the work of Edgar Schein [27], who is widely cited in the literature addressing organizational culture, it is defined as "... the deeper level of *basic assumptions* and *beliefs* that are shared by members of an organization, that operate unconsciously, and that define in a basic 'taken-for-granted' fashion an organization's view of itself and the environment" [27, p. 6]. According to Schein [28], the construct of organizational culture operates at three conceptual levels: 1) Artifacts – the outermost level as evidenced by visible organizational structures and processes, 2) Espoused Values – strategies, goals, and philosophies as evidenced by espoused justifications, and (3) Basic Underlying Assumptions – the innermost level, constituted of unconscious, taken-for-granted beliefs, perceptions, thoughts, and feelings.

It was previously observed that IT-business alignment could be logically considered to be a subset of organizational alignment. Organizational culture has also been portrayed as a factor in organizational alignment. In fact, higher levels of congruence among perceptions of organizational culture have been associated with higher levels of organizational performance [3, 20]. Because of its direct connection to the concept of organizational alignment, the organizational culture dimension of interest in this study was the degree of the congruence of perceptions of the prevailing culture among key organizational informants.

Denison [9] has proposed a definition of organizational culture that expands the concept of organizational culture beyond just a set of underlying beliefs and assumptions to include "the set of management practices and behaviors that both exemplify and reinforce those basic principles" [9, p. 2]. This definition suggests that organizational culture can be operationalized as a set of

management practices and behaviors, and as such, would be a measurable entity.

Cameron and Quinn [3] have identified both qualitative and quantitative strategies for measuring organizational culture. They argue that a quantitative approach is valid if it measures the underlying beliefs and assumptions that represent culture rather than surface attributes reflecting organizational climate and propose the

Competing Values Framework [24] as the foundation for delineating a dimensional model of organizational culture. Originally proposed as a “framework for organizational analysis” [24, p. 1], the Competing Values Framework provides the theoretical basis for Cameron and Quinn’s work on profiling organizational culture. The Competing Values Framework is illustrated in Figure 4.

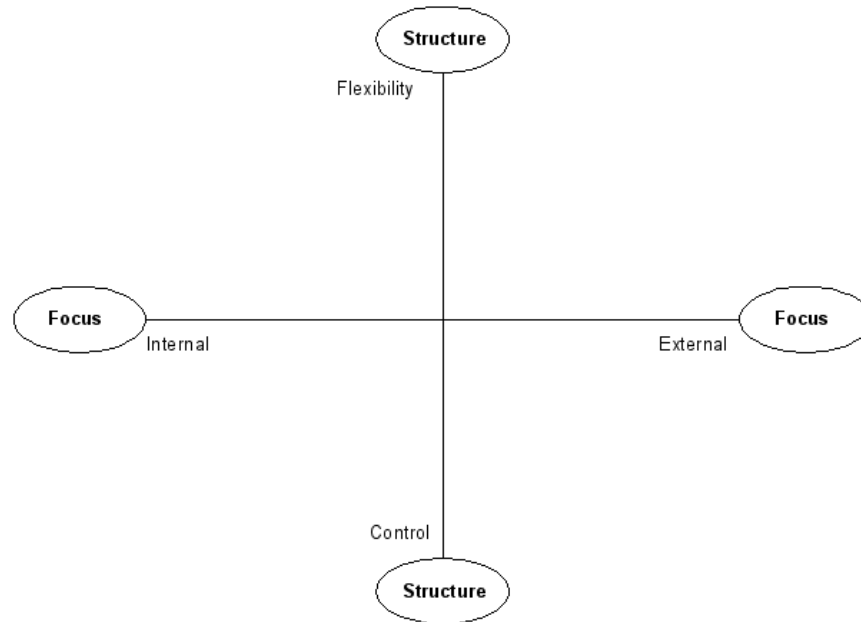


Figure 4: Competing Values Framework

This framework graphically depicts a profile of organizational culture along a continuum of two dimensions: the degree of inward/outward orientation of focus of an organization and the degree of stability/flexibility of the organization’s structure. These dimensions graphically result in a two-dimensional space where competing values are represented on two diagonals among the four quadrants. Specifically, the competing values are internal vs. external orientation and flexibility vs. stability.

Cameron and Quinn [3] have, in adopting this framework for depicting organizational culture, named each of the four quadrants to describe the associated characteristics of organizational culture. Organizations where an inward orientation and flexibility in structure are predominant are said to have “Clan” cultures. Organizations having predominantly outward orientations and exhibiting flexibility in structure are termed as having an “Adhocracy” culture. Organizations with a primarily outward

orientation along with an emphasis on stable and controlled structures are called “Market” cultures. And, finally, organizations with inward orientations and structure characterized by stability and control are said to have a culture of “Hierarchy.”

According to Cameron and Quinn [3], organizations with a clan culture orientation are characterized as having friendly, supportive work environments. Supervisors are seen as mentors, and the concern for people, both employees and customers, is high. An emphasis is placed on teamwork.

The dimensional opposite to the clan culture is found in the market culture quadrant. Here, a major characteristic is a hard-driving, competitive organizational environment. Managers are demanding, and a major organizational goal is winning in a competitive marketplace.

Organizations with hierarchy cultures are described as having formalized, structured work environ-

ments. A major emphasis is placed on coordination of efforts with the achievement of efficiency as a central focus. The management of employees is procedure driven, and predictability is valued.

Finally, the diametric opposite of the hierarchy culture is found in the adhocracy culture. In organizations predominated by an adhocracy culture, risk taking is acceptable. Cameron and Quinn [3] characterize these organizations as “dynamic, entrepreneurial, and creative” places to work [3, p. 58]. In adhocracy cultures, innovation and experimentation are valued, and employees are encouraged to act with individual initiative.

It is important to note that Cameron and Quinn [3] assert that there is no inherent superiority of any one of these organizational profiles over the others. In other words, different predominant organizational cultures can be equally successful in promoting organizational effectiveness among different organizations and under different environmental circumstances.

### Measuring Organizational Culture

Cameron and Quinn, drawing from the previously discussed research, developed the Organizational Culture Assessment Instrument (OCAI), which they assert can be used to measure multiple dimensions of the prevailing organizational culture, including type, strength, and congruence. They proposed that the “congruence of the culture profiles generated on different attributes and by different individuals” [3, p. 62] as one of the comparison standards available from the analysis of results of the administration of their OCAI in an organization. Thus, the administration of the OCAI provides results that can be used to quantitatively determine the degree of congruence. The OCAI has been tested for reliability and validity by multiple researchers in different study contexts, and all of the studies cited in Cameron and Quinn [3] have indicated that the instrument has exhibited sufficient levels of reliability and validity. In addition, the OCAI has been applied in nearly 10,000 organizations among diverse sectors.

Since the purpose of the present study in relation to organizational culture was to measure the underlying, shared beliefs of the research participants within each organization represented in the sample, the dimension of interest in this study is the congruence characteristic where, according to Cameron and Quinn, “...cultural congruence means that various aspects of an organization’s culture are aligned” [3, p. 64].

For identifying the levels of the four major culture types postulated by Cameron and Quinn [3] – Clan, Adhocracy, Market, and Hierarchy – the OCAI provides

four scores that can be used to plot the perceptions of culture from organizational participants as derived from the survey results. Each of the four scores indicates the collective perception of organizational participants

Scoring the OCAI involves first totaling the points assigned to each of the four alternatives from all respondents across the six questions. Then, an average score is computed for each of the four alternatives. The resulting averages for each of the four culture types can then be plotted graphically on the quadrant derived from the Competing Values Framework to depict the organization’s culture profile.

Among the organizational culture characteristics revealed by the results of the administration of the OCAI are the dominant type of culture within the organization, the strength of the prevailing culture, and the congruence of the responses from the participants within the organization on the levels of each of the four culture types.

In summary, because of its well-explicated, theory-based derivation, the Organizational Culture Assessment Instrument was selected for use in this study. The results of the administration of this instrument provided the means for assessing the degree of the congruency of perceptions of the prevailing organizational culture among business and IT executives within the organizations represented in this study.

### STUDY DESIGN OVERVIEW

The major purpose of this undertaking was to explore the relationship between IT-business and organizational culture, a research study was designed and implemented. As exploratory research, the research design used correlational analysis to analyze empirical data collected from participating executives in the organizations sampled. The correlational design was chosen in order to test the covariation between the degree of congruence of perspectives of the prevailing organizational culture and the level of strategic alignment maturity present in the organizations comprising the study sample. While correlational studies cannot be used to support conclusions about a causal relationships, they can be appropriately used as a first step in investigating the nature of relationships.

A second design feature of the study was the selection of particular types of organizational executives for participation. While this hampers the generalizability of the findings from a study, in this instance it was decided that this limitation was outweighed by the advantages of having an organizational “insider” (the designated facilitator) identify potential study participants. The facilitators were asked to identify key individuals who possessed all of the following characteristics: senior-level management



job role, strategy formulation and/or execution responsibilities, and perspective spanning both the business and IT strategic management and operations functions of the organization. For this reason, an organizational key informant methodology [4, 21] was employed to gather information from organizational senior-level managers whose job roles included either strategy formulation responsibilities, strategy execution responsibilities, or both.

The study was designed to collect information from managerial-level individuals in approximately equal numbers from business and IT units within the organizations sampled. These key informants were asked by their organizational facilitator to complete the study survey, which addressed their perceptions of the characteristics of the prevailing organizational culture and the level of strategic alignment maturity, as an indicator of the level of IT-business alignment, present in their organizations.

A potential limitation of the key informant strategy in this study is based on the possibility of the designated organizational facilitators selecting participants who did not meet the stated requirements of participant selection for the research (senior-level managers or executives having IT and/or business strategy formulation and execution responsibilities). To address this limitation, each facilitator was provided with written requirements in the form of a memorandum containing instructions for facilitators. This was followed by speaking with each facilitator to repeat the explanation of the desired participant characteristics. During this discussion, each facilitator was asked if she or he clearly understood the participant requirements and was given the opportunity to ask for any needed clarifications.

Another potential limitation of the key informant strategy used in this study is the possibility that facilitator-selected participants' views of the organization may be limited to the unit or functional area of their primary responsibilities. To address this issue, the term "senior-level" was used in the instructions to the facilitators in order to promote the selection of individuals having an organization-level perspective of the issues represented in the questionnaire.

The facilitator identified for each participating organization was also asked to identify and recruit participants. As previously mentioned, the facilitators were given the responsibility of identifying participants who were senior-level managers or executives having IT and/or business strategy formulation and execution responsibilities. In addition, the facilitators were requested to recruit a participant group with an approximately equal mix of managers who had business function management as a primary responsibility and of managers who had IT function management as a primary responsibility.

An inherent limitation of a cross-sectional study design is that it only captures a snapshot of the current state of affairs from the respondents. In this study, this design was appropriate based on the fact that both organizational culture and strategic alignment are consistently portrayed in the literature as relatively enduring phenomena and as both slow and difficult to address through organizational change initiatives.

### **Participating Organization Characteristics**

The organizations comprising the sample for this study were primarily identified through an invitation to participate issued to the members of a Society for Information Management (SIM) Chapter in a top 100 Metropolitan Statistical Area in the United States. In response to the invitation to participate, representatives of seven SIM member organizations volunteered to facilitate the administration of the surveys in their organizations. Four additional participating organizations were identified through other professional contacts.

Data was collected through questionnaires from senior-level executives from the IT and business functional areas in the firms, which include three Fortune 500 companies, six multinational corporations, and span 6 of the 11 North American Industry Classification System (NAICS) supersectors. The NAICS supersectors represented among the organizations in this sample are education and health services, financial activities, leisure and hospitality, manufacturing, transportation and utilities, and wholesale and retail trade.

### **Participant Characteristics**

Among the participants, 41% reported having primarily business function responsibilities, 45% indicated having primarily IT responsibilities, and 14.0% reported an even division of business and IT responsibilities. These data indicate that the study goal of having an even distribution of participants across business and IT primary responsibilities was achieved.

The participants' years of employment with their respective organizations was also collected. The mean years of employment reported within the organizations represented in the sample ranged from 4.1 up to 20.7. For all study participants, the mean of the years of employment reported was 12.4, which indicates that the participants, on average, had substantial tenure within their respective organizational environments from which to base their assessments.

Study participants were also asked to indicate their highest level of managerial responsibilities. The percentages of the frequency distribution of responses are

displayed in Table 1. The distribution of the highest levels of managerial responsibility indicates that almost one-half of the respondents reported having enterprise-wide managerial responsibilities. The study results, as a whole, in-

cluded responses from individuals across lower levels of managerial responsibility within the organizations sampled as well.

Table 1: Highest Level of Managerial Responsibilities Reported by Participants

	% of Participants
Enterprise-wide	46
Operating division of enterprise	17
Functional area within an operating division	14
Unit within a functional area	20
No response	4

### Questionnaire Format

The survey questionnaire was designed to capture information that could be used to profile the prevailing organizational culture and to assess the strategic alignment maturity level of the organization. These questions were replicated from the Organizational Culture Assessment and the Strategic Alignment Maturity Assessment instruments discussed earlier. Demographic items were used to gather information on the respondent’s managerial focus in relation to business and IT, primary functional responsibilities, tenure with the organization, and highest-level of managerial responsibilities.

### Level of Analysis

A single-level analysis strategy [8] focusing on a “whole” comprised of the participants as a collective within an organization was selected for this study. The level of analysis configuration selected for this study closely matches the description of research on collectives at a single level of analysis as focusing on the differences among organizations on the basis that “individuals within an organization share a common set of experiences” [8, p.8]. This configuration is well suited to the strategy of measuring the underlying, shared values and beliefs among the members of an organization. This strategy supports the goal of measuring the degree of congruence of perspectives of the prevailing organizational culture and

the average strategic alignment maturity within each organization included in the study. Therefore, the responses from the participants within each organization were aggregated to a single level (the organization) with a collective unit (all respondents with an organization) of analysis.

### Study Variables

This study involved the collection of data on two variables: organizational culture and IT-business alignment. This provided the basis for exploring the nature of the relationship between those variables within the organizations comprising the study sample. Specifically, in each organizational setting included in this study, the data collected was used to assess the degree of congruence of perceptions of the respondents on the prevailing organizational culture and on their collective perception of the maturity level of the IT-business alignment.

## RESULTS

To operationalize the congruence of culture as defined by Cameron and Quinn [3], the total variance among the ratings for each of the four types of culture among the set of six questions was calculated, resulting in a total variance statistic for each culture type. This statistic indicates the degree of variability among the collective perceptions of the organizational participants on each of the cultural types. The data collected from the OCAI can

also be used to indicate the type of prevailing culture in an organization. Among the 11 organizations represented in the study sample, the majority of the organizations, 7 out of 11, were dominated by a market culture orientation. Three of the organizations had a predominantly clan-based culture, and the remaining organization had a predominantly hierarchy culture.

The Strategic Alignment Maturity Assessment instrument [15] was used to measure the level of strategic alignment maturity perceived by the respondents in the organizations represented in the study. This measurement determined the value used for the alignment component of the correlational analysis. The range of possible means from the results of this instrument is from 1.0 to 5.0.

Luftman [15] characterizes the five levels of strategic alignment maturity as follows: Level 1 – Initial/Ad Hoc Process, Level 2 – Committed Process, Level 3 – Established Focused Process, Level 4 – Improved/Managed Process, and Level 5 – Optimized Process. The strategic alignment maturity means for the 11 organizations represented in the study sample ranged from 2.41 to 3.71. The strategic alignment maturity mean for the aggregate of all 11 organizations was 2.89. The levels indicated by the analysis of the strategic alignment assessment component for the organizations in the research sample are presented in Table 2. The results suggest that overall, the participant organizations are much like most organizations discussed in the literature in that their alignment maturity is a work in progress.

Table 2: Strategic Alignment Maturity Means for the Organizational Sample

Strategic Alignment Maturity	Frequency
2.0 to 2.5	1
2.5 to 3.0	8
3.0 to 3.5	1
3.5 to 4.0	1

The correlation between the organizational culture congruence variance statistics and the strategic alignment maturity levels indicated a significant inverse relationship between the total variance among the perceptions of the prevailing organizational culture and the average level of IT-business alignment maturity within the organizational sample of this study. In other words, the lower the variability of perspectives on the prevailing organizational culture within an organization (i.e., higher congruence), the greater the perceived level of IT-business alignment maturity within that organization.

## CONCLUSIONS

The major finding of this exploratory study was that among the organizations comprising the study sample, the degree of congruence of the perceptions of the prevailing organizational culture was significantly related to the level of strategic alignment. Specifically, organizations

having greater degrees of cultural congruence among senior-level executives exhibited higher levels of strategic alignment maturity.

The results also revealed that the degree of cultural congruence accounted for a significant amount of variance in the level of strategic alignment maturity present. These results suggest the possibility that the achievement of IT-business alignment, which is a perennial top concern of senior-level IT and business executives, is associated, at least in part, with problems stemming from the nature of the prevailing organizational culture.

Drawing from these findings, the overall conclusion is that the study findings are indeed interesting and support the need for continued research on the relationship between organizational culture and the achievement of IT-business alignment in organizations. From a prescriptive stance, the results also suggest that organizational culture change initiatives may hold the potential to

contribute to the achievement of an optimal level of IT-business alignment. Further, these results also support the plausibility of the existence of an additional dimension of the IT-business alignment concept: organizational culture as an indication of the informal organizational structure.

These study results provide support for Chan's [5] proposition that informal organizational structure may represent an additional dimension affecting the achievement of IT-business alignment. Here, the degree of congruence of perspectives on the prevailing organizational culture, as a major component of the concept of organizational culture, was found to be significantly associated with the level of strategic alignment maturity, as an indicator of IT-business alignment, among the organizations represented in the study sample.

### Implications for Continued Work on IT-Business Alignment

The results of this study hold significant implications for the continuation of research on IT-business alignment. First, the potential of an additional dimension, informal organizational structure, of the construct is supported. Further work in this area is needed to better explicate the nature of this dimension in the achievement of IT-business alignment.

In light of the confirmation of the plausibility of this new dimension of the IT-business alignment construct, additional research on this dimension as a moderating factor of IT-business alignment could prove helpful in better identifying the role of the three major aspects of organizational culture explained by Cameron and Quinn [3]: strength, type, and congruence, in the alignment construct. As an exploratory investigation, the results of this study represent a preliminary foundation for confirming the conclusions drawn from those results in a larger context as a basis for supporting continued work in this area. This would provide additional support for the assertion that organizational culture, as an indication of informal organizational structure is a moderating factor in the achievement of better IT-business alignment in organizations.

### Implications for Practice

The study results also hold an important implication for improving practice by suggesting a new factor to be considered in IT-business alignment improvement initiatives. These results suggest that organizational culture may be a factor in the achievement of higher levels of IT-business alignment. Thus, it would seem reasonable to propose that an assessment of the nature of the prevailing

organizational culture should precede the design of strategic initiatives to improve IT-business alignment. Specifically, seeking to develop a shared level of understanding and agreement of the prevailing culture prior to strategy formulation could prove helpful. Furthermore, the results of this assessment would reveal organizational culture issues that may hold the potential to affect the overall level of IT-business alignment achieved.

## REFERENCES

- [1] Bluedorn, A. C., Johnson, R. A., Cartwright, D. K., & Barringer, B. R. "The Interface and Convergence of the Strategic Management and Organizational Environment Domains." *Journal of Management*, (20:2), 1994, pp. 201-262.
- [2] Brown, C. V., and Magill, S. L. "Alignment of the IS Functions with the Enterprise: Toward a Model of Antecedents," *MIS Quarterly* (18:4), 1994, pp. 371-403.
- [3] Cameron, K.S., and Quinn, R. M. *Diagnosing and Changing Organizational Culture: Based on the Competing Values Framework*, Addison-Wesley, 1999
- [4] Campbell, D. T. "The Informant in Quantitative Research," *American Journal of Sociology* (60:4), January 1955, pp. 339-342;
- [5] Chan, Y. E. "Why Haven't We Mastered Alignment? The Importance of the Informal Organization Structure," *MIS Quarterly Executive* (1:2), June 2002, p. 107.
- [6] Chan, Y. E., and Huff, S. L., "Investigating Information Systems Strategic Alignment," in the *Proceedings of the Fourteenth International Conference on Information Systems*, Orlando, FL (December 1993), p. 346.
- [7] Croteau, A., Solomon, S., Raymond, L., and Bergeron, F. "Organizational and Technological Infrastructures Alignment," in the *Proceedings of the 34<sup>th</sup> Hawaii International Conference on Systems Sciences*, Wailea Maui, HI (January 2001), p. 8049.
- [8] Dansereau, F., and Alutto, J. A. "Level of Analysis Issues in Climate and Culture Research," in *Organizational Climate and Culture*, B. Schneider (ed.), Jossey-Bass, San Francisco, 1990, pp. 193-226.
- [9] Denison, D. R. *Corporate Culture and Organizational Effectiveness*, John Wiley & Sons, New York, 1990, p. 2.
- [10] Galbraith, J. R. (1973). *Designing Complex Organizations*. AddisonWesley, Reading, MA, 1973.

- [11] Ghosh, B. and Scott, J.E. "Relational Alignment in Offshore IS Outsourcing," *MIS Quarterly Executive*, (8:1), 2009, pp. 19-29.
- [12] Henderson, J. C., and Venkatraman, N. "Levering Information Technology for Transforming Organizations," *IBM Systems Journal*, (32:1), 1993, pp. 476.
- [13] Kearns, G. S., and Lederer, A. L. "Alignment of Information Systems Plans with Business Plans: The Impact on Competitive Advantage," in the *Proceedings of the Third Americas Conference on Information Systems*, Indianapolis, IN (August 1997), pp. 840-842.
- [14] Luftman, J. "Assessing Business-IT Alignment Maturity," *Communications of the AIS*, (4:14), 2000, pp. 1-50;
- [15] Luftman, J. *Competing in the Information Age: Align in the Sand*, Oxford University Press, 2003.
- [16] Luftman J., Papp R., and Brier, T. "Enablers and Inhibitors of IT-Business Alignment," *Communications of the AIS*, (1:3), 1999, pp. 1-33.
- [17] Lawrence, P. R., and Lorsch, J. W. *Organization and Environment: Managing Differentiation and Integration*, Boston: Division of Research, Graduate School of Business Administration, Harvard University, 1967; ; Miles, R., and Snow, C. *Organizational Strategy, Structure, and Process*, McGraw-Hill, New York, 1978
- [18] Miller, D., & Friesen, P. H. "Strategy-making and Environment: The Third Link," *Strategic Management Journal*, (4:3), pp. 221-235;
- [19] Mintzberg, H. "Strategy Making in Three Modes," *California Management Review*, (16:2), Winter 1973, pp. 44-53; 1979;
- [20] Nadler, D. A., and Tushman, M. L. "A Congruence Model for Organizational Assessment" in *Organizational Assessment: Perspectives on the Management of Organizational Behavior and the Quality of Working Life*, Lawler, E. E., Nadler, D. A., and Cammann, C. (eds.), John Wiley, New York, 1980, pp. 261-278.
- [21] Phillips, L. W., and Bagozzi, R. P. "On Measuring Organizational Properties of Distribution Channels: Methodological Issues in the Use of Key Informants," *Research in Marketing* (8), 1986, pp. 313-369.
- [22] Powell, T. C., "Organizational Alignment as Competitive Advantage," *Strategic Management Journal*, (13:2), February 1992, pp. 119-134.
- [23] Preston, D. and Karahanna, E. "How to Develop a Shared Vision: The Key to IS Strategic Alignment," *MIS Quarterly Executive*, (8:1), 2009, pp. 1-8.
- [24] Quinn, R. E., and Rohrbaugh, J. "A Spatial Model of Effectiveness Criteria: Towards a Competing Values Approach to Organizational Analysis," *Management Science* (29:3), March 1983, pp. 363-377.
- [25] Rai, A., Im, G., and Hornyak, R. "How CIOs Can Align IT Capabilities for Supply Chain Relationships," *MIS Quarterly Executive*, (8:1), 2009, pp. 9-18.
- [26] Reich, B. H., and Benbasat, I. "Factors that Influence the Social Dimension of Alignment between Business and Information Technology Objectives," *MIS Quarterly*, (24:1) 2000, pp. 81-113.
- [27] Schein, E. H. *Organizational Culture and Leadership: A Dynamic View*, Jossey-Bass Publishers, 1985.
- [28] Schein, E.H. *Organizational Culture and Leadership, (Second Edition)*, Jossey-Bass Publishers, 1992.
- [29] Tallon, P. P., and Kraemer, K. L. "A Process-Oriented Assessment of the Alignment of Information Systems and Business Strategy: Implications for IT Business Value," in the *Proceedings of the Fourth Americas Conference on Information Systems*, Baltimore, MD, (August 1998), p. 551.
- [30] Tallon, P. P., Kraemer, K. L., and Gurbaxani, V. "Executives' Perceptions of the Business Value of Information Technology" A Process-Oriented Approach," *Journal of Management Information Systems*, (16:4), Spring 2000, pp. 145-174.
- [31] Venkatraman, N. "The Concept of Fit in Strategy: Toward Verbal and Statistical Correspondence," *Academy of Management Review*, (14:3), July 1989, pp. 423-444;
- [32] Venkatraman, N. and Prescott, J. E. "Environment-Strategy Coalignment: An Empirical Test of Its Performance Implications," *Strategic Management Journal*, (11:1), January 1990, pp. 1-23.

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