IS/IT GOVERNANCE STRUCTURE AND ALIGNMENT:

AN APPARENT PARADOX

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EXECUTIVE SUMMARY

The rapidly changing business world demands flexibility and responsiveness in the business and therefore in IT. The traditional reaction is to place decision making closer to the changing environment where decision makers can anticipate earlier, diagnose better and accommodate fully any change in the environment. This appears to be the case for business units in today’s environment. Also, conventional wisdom implies that the organization structure of functional units will be the same as that of the business units. However, our research indicates that the exact opposite reaction may be appropriate for IT departments as they support their multi-business firms in the rapidly changing world. While business unit organizations may require decentralized decision making to meet the rapidly changing landscape, the IT function may be best suited to support such business units via a more centralized approach to IT governance. We pull together evidence of the recent centralization of decision making in IT, present a paradox that suggests centralized IT coordination may support the needs of decentralized business units, and develop an explanatory model suggesting that demands for integration and standardization may be driving this centralization in IT. Then, using this model, we consider whether alignment of the IT function’s decision making with the demands placed on it affects the performance of the IT group.
EVIDENCE OF CENTRALIZATION

There is a growing collection of evidence that seems to indicate that IT decisions are made more centrally in the organization than in the past. Just a few years ago, the common IT governance mode was assumed to be a federal model that included shared responsibility and authority between corporate units and business units.\(^1\) The prevailing thought was that technology and platform decisions could be centralized since each business unit is unlikely to demand its own customized approach to hardware. Centralization when it is practical is beneficial as it creates efficiencies and standardization. Meanwhile, the federal approach still allows business units their own discretion with respect to business requirements and the flexibility they need while providing the cost benefits of centralization. The attraction of this best of both worlds approach caused us to take notice when respondents of a survey of CIOs of large, multi-business unit firms in 2006 showed that IT decisions were primarily made in the corporate center across ten key decision areas\(^2\). A summary of the locus of IT governance in these ten separate decision areas is presented in Figure 1.

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\(^1\) The most prevalent form of IT governance was a hybrid approach in which IT and the business units share decision rights according to Weill, P. “Don’t Just Lead, Govern: How Top Performing Firms Govern IT,” *MIS Quarterly Executive*, 8, 1, 2004.

\(^2\) Our 2006 survey of CIOs exploring the guiding principles that IT organizations use indicated that the authority to initiate and approve IT activities rested significantly with corporate IT across the decision areas noted. In fact, CIOs envisioned even more centralization in the next three years. Results were presented in: Adams, C.R, Larson, E.C., Xia, W., “A Trend Toward More Centralized Information Technology (IT) Management,” in *Proceedings of the 13th Americas Conference on Information Systems*, Keystone, CO, 2007.
Although business units are decentralizing, centralization in decision areas such as “managing IT operations” and “managing technology assets” is probably not surprising. Centralized authority in traditionally decentralized or at least shared decision areas such as “managing IT projects,” “managing IT demand/use” and “defining/prioritizing IT projects” and especially “managing/improving business processes” is a surprising result. In addition, CIOs reported that these same decisions would become even more centralized in the future. This dramatic shift toward centralized IT governance coupled with an even stronger indication of an anticipated trend led us to explore what might be causing this shift to centralize IT decision making.

At the same time, others were noting this same shift in IT governance. An annual survey of CIOs in 2006 also indicated that only 16% of respondent companies described their
organizations as being a federal model of IT governance, the “ideal” model that shares decision
rights between corporate and business units.\(^3\)

One particular company truly exemplifies this shift toward more centralized IT decision
making. AgriBusiness, Inc.\(^4\) is a massive food, agricultural and risk management company that
has expanded through both organic growth from its base as a grain trading business and via
acquisition to its current form as a multi-national, multi-business firm. Today, the firm consists
of over 90 separate business units. One of AgriBusiness Inc.’s trademarks is its focus on the
customer so even as it combined previously separate businesses, the business units remained
fiercely independent to ensure that the customer focus remained. But, a dramatic change with
respect to how IT is managed occurred in the past few years. Previously, each business unit
had its own IT staff and decisions were made within each business, independent of the
technological decisions made by the other businesses. The corporate CIO’s role was limited to
managing technology platforms across the enterprise, while business unit CIOs managed
application systems. However, the CIO saw an opportunity for synergy among the business
units with respect to applications and even business processes. Why should each unit perform
its own projects when the enterprise could benefit from sharing costs and leveraging knowledge
and experience across units? The CIO led the formation of a group that acts as a corporate
coordinator of projects among combined business unit sets. The business unit sets (consisting
of between two and all of the corporation’s business units) are called “lakes” where multiple
business units come together for the purpose of sharing project efforts. Although the sheer size
of AgriBusiness Inc. makes the formation of a lake that includes every business unit in the
corporation unusual, lakes of 10-15 business units frequently collaborate to implement a
common system across that set of business units. Although this coordination did not integrate

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\(^3\) Jerry Luftman found that only 16% of firms surveyed in 2006 were of the ideal, federal model of IT governance, see:
Stevens News Service, “Dr. Jerry Luftman Releases Results of 2006 CIO Survey,” press release by Stevens News

\(^4\) The name of the specific company described in this case review is fictional to protect its confidentiality.
all of the business units of the corporation in a comprehensive way, the new approach is significantly more centralized than the company ever demonstrated in the past.

Not surprisingly this new interdependence between business units and the shift of authority away from mostly autonomous business unit managers did not occur without a concerted effort. The CIO that initiated the change at AgriBusiness sought to better understand what guiding principles the organization lived by in its IT strategy and operations and then provide transparency to other senior executives as to what IT structure and choices are most valued by the organization. This assessment began with a careful survey of the values of business and IT managers in the organization to ensure an awareness of the IT guiding principles. It was followed by negotiating a consensus on what guiding principles will be foundational for the way the organization operates with respect to IT. The exercise raised the level of appreciation for IT governance principles at the senior executive level and throughout the business units, making it possible to accomplish the more coordinated and integrated decision making approach.

Overall, this evidence of centralization is interesting in that the general decision making structure of IT (predominantly centralized) diverges from structure of the business units (predominantly decentralized). This is contrary to the conventional wisdom that suggests a match between functional and business unit structure. The next section explores this apparent paradox and develops the theoretical argument for why this might be the case.

**A PARADOX – CENTRALIZED IT GOVERNANCE IN A DECENTRALIZED WORLD**

In an ever-changing and complex environment demanding flexibility and responsiveness, a preponderance of companies grant significant autonomy to their business units to anticipate and react to a rapidly changing marketplace. The ability to sense and

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respond is an important mechanism to create value for the organization.\(^6\) Decentralization of decision making provides the close proximity to the changing environment and a more immediate adjustment to the changing environment.

Meanwhile, the prevailing research on IT governance suggests that the choice of IT governance model should consider multiple contingencies including the corporate governance structure, economies of scope, and absorptive capacity,\(^7\) corporate strategy and business unit autonomy.\(^8\) In particular, this body of research suggests that the IT governance structure will mimic the corporate structure. This presents an apparent paradox in which the knowledge-based, innovation-driven and globally connected economy requires companies to be more decentralized, more in touch with a volatile and demanding marketplace. At the same time, technology has driven the cost of communication and storage down to enable more decentralization to take place. This earlier research on IT governance, paired with the demands of today’s environment, suggests a more decentralized or federal IT governance approach, at least taking advantage of the benefits of decentralization to tailor applications and business processes to the specific needs of each business unit. Yet, the evidence suggests that IT governance itself is becoming only more centralized.

This counterintuitive finding has some theoretical grounding dating back to classical organizational theory. It is quite possible for a functional unit of the organization, in this case IT,

\(^7\) Governance of IS/IT may be centralized, decentralized or federal with the ideal choice for each firm determined by a set of contingencies including the corporate governance, economies of scope and absorptive capacity. The contingencies may line up in the same direction or reinforce each other, negate the effects of other contingencies or conflict, or even dominate other contingencies, see Sambamurthy, V., Zmud, R.W. “Factors Influencing Information Technology Management Architectures in Organizations: A Theory of Multiple Contingencies,” MIS Quarterly, 23, 2, June 1999, pp. 261-290.
\(^8\) Brown and Magill found that the structure of the IT function is based on a "contingent pattern of overall organization antecedents that include corporate strategy, overall firm structure, and business unit autonomy," in Brown, C.V., Magill, S.L., "Alignment of the IS Functions with the Enterprise: Toward a Model of Antecedents," MIS Quarterly, 18, 4, December 1994, pp. 371-403.
to play the role of integrative device to achieve integration, while simultaneously maintaining differentiation. Organizational scholars also suggest the use of an over-arching group that encompasses multiple subunits as a mechanism to handle high levels of interdependence or integration. In fact, it is probable that standardization at one level may create flexibility at another level of the organization. This fascinating thought is called the “paradox of standards.”

Enforcing discipline from one level may actually enable creativity and flexibility at another level.

IT and business managers alike should take note of this apparent paradox in IT governance. In terms of the strategic alignment model, the business governance of a firm (predominantly decentralized) may differ from the IT governance (predominantly centralized) for perfectly valid reasons. Alignment does not require a consistent match as much as it requires compatibility between the business and IT structure.

AN EXPLANATORY MODEL

In this section, we present an explanation of this paradox based on the notion that there are forces in the environment that are driving a demand for standardization and integration. These new demands create their own contingencies that may dominate the traditional contingency advocating a match between corporate and IT structure.

Demand for Integration

Our model places the demand for integration as a focal point of interest. As described in the case of AgriBusiness, Inc. earlier, companies appear to be seeking new ways to link previously divergent business units. Classic organizational theory suggests that complex organizations are likely to have high levels of interdependence among subunits and that the

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9 Although they did not refer to IT specifically on account of the date, Lawrence and Lorsch suggested that a function such as marketing or human resources could play the role of an integrative device, see Lawrence, P.R., Lorsch, J.W., "Differentiation and Integration in Complex Organizations," Administrative Science Quarterly, 12, pp. 1-47.

10 Malone describes how rigid standards at one level of a system may enable more flexibility at another level, op.cit.

11 The foundational work on strategic alignment suggests that the alignment between business strategy and IT strategy is one of many linkages to derive competitive advantage. Business governance is a component of business strategy while IT governance is a component of IT strategy, see: Henderson, J.C., Venkatraman, N., “Strategic Alignment: Leveraging Information Technology for Transforming Organizations,” IBM Systems Journal, 32, 1, 1999.
organizational structure is contingent on the demands of the environment.  

But, what is different about the environment today than in the late 1990s and early 2000s that might suggest a higher demand for integration?

A significant environmental issue is the change with respect to technology. The internet has profoundly changed the connectedness of the world as a whole. This dramatic change in interconnectedness has afforded some coordination among individuals and groups that just was not possible in the past. This is true both among individuals within the organization and between organizations. The other technology affordance is that the storage capacity of databases has grown to the point that database size no longer constrains organizations in their ability to combine enterprise-wide data in a single instance of data. This increased capacity to link the organization enables significantly more interdependence than previously possible.

Today’s constantly changing and uncertain environment creates a wealth of interdependence, especially with respect to information. Just-in-time inventory requires the downstream subunit to communicate information about production or market forecasts in near-real time so that the upstream subunit can adjust its output schedule accordingly. An awareness of supply shortages is critical for the downstream unit as well in order to adjust its production and sales efforts accordingly. This is further complicated when the interdependence is frequently between two or more firms. Organizations are also trying to increase their sales by cross-selling or bundling their products. This means that each subunit responsible for the individual products shares information about customers, marketing and forecasting and adjusts its own tasks based on this shared information. Meanwhile, new regulatory requirements, most notably the Sarbanes-Oxley Act of 2002, place demands on the organization for interdependence. The organization as a whole must demonstrate that security and controls are

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12 Organization scholar James Thompson is generally credited with the notion of contingency theory that posits that the structure of the organization depends on the demands from the environment. He also described three progressively building levels of interdependence: pooled, sequential and reciprocal, that depend on the coordination requirements of the organization, see Thompson, J.D., Organizations in Action, New York: McGraw-Hill, 1967.
in place to ensure effective financial reporting. Financial reporting is no longer purely the accumulation of the financial information from each sequential subunit, but is a continuously coordinated effort involving the finance, IT, corporate risk management and business unit subunits. For example, demonstrating adequate security of information systems requires the technical staff to safeguard data through appropriate passwords, authentication and authorization verification. But this security is not done in a vacuum. Business units must adjust their processes to ensure that corporate security requirements are enacted to protect the integrity of systems and data while not constraining the activities of the business.

These demands suggest that there is a greater need today for the business units to coordinate their activities to accomplish the desired tasks than even a few years. This need to coordinate is similar to the notion of integration, “the process of achieving unity of effort among various subsystems in the accomplishment of the organization’s task”. Our model suggests that this need to coordinate or the demand for integration is an increasingly important consideration for IT as IT often provides the capability to link the business units. It is important to distinguish the notion of integration and standardization, as described in the next section.

**Demand for Standardization**

Standardization differs from integration as standardization is only consistency across the firm, but does not imply the interdependent nature of coordination and integration. While standardization may be a necessary condition that facilitates integration, it is not by itself the same concept as integration. For example, a more technical definition of *data integration* is the “standardization of data definitions and structures through the use of common conceptual schema”. For the purpose of this paper, this definition of data integration is really

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13 Integration as defined in the classic study of the inherently opposed concepts of integration and differentiation, see Lawrence, P.R., Lorsch, J.W., "Differentiation and Integration in Complex Organizations," *Administrative Science Quarterly*, 12, pp. 1-47.

Standardization of technology, applications, data and business processes drives down costs by simplifying support, creating leverage over suppliers, and reducing per unit costs through economies of scale. Companies purely focused on reducing costs may seek standardization without regard to its impact on integration. On the other hand, companies that seek integration have a choice: they can either integrate on non-standard technology, paying the premium in costs of coordinating, or standardize, benefiting from the less expensive means of coordinating between subunits (essentially by a plan created by standardization). While integration without standardization is possible, it occurs through the most expensive coordinating mechanisms, such as mutual adjustment.\textsuperscript{15} Considering the importance of containing costs, companies that integrate will probably seek to do so using the least expensive mechanisms possible. So, a high demand for integration will drive a high demand for standardization. As a result, it is expected that the demands will act in unison, except that the demand for standardization is expected to be higher than the demand for integration because of the existence of some level of independent standardization purely for its own benefits as mentioned earlier. The relationships are specified in the following hypothesis:

Hypothesis 1: A high demand for integration is associated with a high demand for standardization. Yet, the demand for standardization will be equal to or greater than the demand for integration.

One company that exemplifies the use of standardized technology and applications is Hillside Foods Corp.\textsuperscript{16} At Hillside Foods, the IT department is absolutely focused on driving the cost of technology and systems to the minimum possible cost. In fact, a senior executive in IT...

\textsuperscript{15} Thompson suggests that a particularly expensive mechanism to integrate the enterprise is mutual adjustment, op.cit.

\textsuperscript{16} The name of the specific company described in this case review is fictional to protect its confidentiality.
proudly touts that one of their favorite performance metrics, IT spend as a percentage of revenue, is just 1.5%, significantly less than any of their competitors. They achieve lower costs through deciding at the corporate level what technologies and applications are allowed to be implemented throughout the enterprise. Standard vendors and products are chosen, formally documented and then enforced. Through its standardization, the company is able to leverage its full spectrum of purchasing to receive deeper discounts and reduce support costs by focusing on a smaller subset of technology. Some customization of technology and systems is allowed, but only after review and approval by a centralized architecture group. IT executives do worry that the organization may be missing out on top-line opportunities because the systems are aligned more with the corporation as a whole than the specific needs of each business unit, but they remain focused on the cost efficiency of the standardization approach.

Next, the use of coordinating mechanisms by the IT function is considered as a structural response to the demands for standardization and integration.

**Strength of Coordinating Mechanism**

To provide more insight into the relative strength of the mechanisms used to coordinate the information needs of the organization, a three-dimensional scale was constructed. 5 types of coordinating mechanisms, direct authority, standardization of outputs, standardization of processes, standardization of inputs and mutual adjustment,\(^\text{17}\) represent the nature of the coordinating mechanism and are described in Table 1.

<table>
<thead>
<tr>
<th>Table 1 - Coordination Mechanisms (^\text{18})</th>
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<tr>
<td><strong>Direct Supervision/Authority</strong></td>
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<tr>
<td><em>Use of a &quot;czar&quot; to dictate action.</em></td>
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<tr>
<td><strong>Standardization of Work Processes</strong></td>
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<tr>
<td><em>Agreement on the specific way each business process will be performed throughout the firm.</em></td>
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Standardization of Outputs  
*Agreement on process outputs.*

Standardization of Skills/Inputs  
*Agreement on specific inputs to applications and processes.*

Mutual Adjustment  
*Reliance on individuals to work out arrangements needed to coordinate and integrate their efforts.*

Also, the extent of use (none, little, some, moderate, considerable, very much and extensive) of each of the five mechanisms is measured. Finally, the locus of the mechanism to coordinate (mostly business units/decentralized to shared to mostly corporate/centralized) is measured. The strongest mechanism is therefore direct authority that is used extensively by mostly corporate/central units. Figure 2 depicts the three dimensions of the strength of coordinating mechanisms.

**Figure 2 - Three Dimensions of Strength of Coordinating Mechanism**
Aligning Demand with the Strength of Coordinating Mechanisms

The appropriate organizational governance response should consider the demand for integration to provide the appropriate amount of coordination. Ideally, companies that have high demand for integration and standardization will utilize stronger coordination mechanisms. Meanwhile, it is not necessary and may be counterproductive for companies to over-utilize coordinating mechanisms when they are not needed. This framework suggests that IT functions recognize the demand for integration and apply the coordinating mechanism strength that matches the demand. The framework in Figure 3 compares the relative demand for integration to the strength of the coordinating mechanisms used as a general guideline for checking alignment.

Figure 3 - Demand for Integration/(Standardization) vs. Strength of Coordinating Mechanism
This proposed framework suggests that high demand for integration or high demand for standardization will be associated with the choice of strong coordinating mechanisms and leads to Hypotheses 2 and 3:

Hypothesis 2: All else equal, a high demand for integration will lead to the use of strong coordinating mechanisms.

Hypothesis 3: All else equal, a high demand for standardization will lead to the use of strong coordinating mechanisms.

**IT Performance**

The next extension is to determine whether IT functions that develop this alignment between the demand for integration and the strength of coordinating mechanisms actually are able to achieve differential performance. Performance is measured on 12 separate self-reported items and the composite measure reflects the overall performance of the IT function relative to competitors across the 12 dimensions enumerated in Table 2:

**Table 2 – IT Performance Dimensions**

<table>
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<th>Dimension</th>
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<tr>
<td>Delivering IS/IT products/services with a low percentage of downtime</td>
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<tr>
<td>Providing high quality information products/services</td>
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<tr>
<td>Delivering application systems on time</td>
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<tr>
<td>Completing application systems within budget</td>
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<tr>
<td>Delivering IS products/services that meet user's needs</td>
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<tr>
<td>Overall IS/IT cost performance, e.g., IS/IT cost per employee or % of revenue</td>
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<tr>
<td>Maintaining appropriate level of IS/IT investment</td>
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<tr>
<td>User/customer satisfaction with IS/IT</td>
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<tr>
<td>Attracting and retaining needed IS/IT personnel</td>
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<tr>
<td>Bringing in relevant new technology</td>
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<tr>
<td>Being responsive to business changes</td>
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<tr>
<td>Being proactive in initiating new business solutions</td>
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Accordingly, the belief with respect to IT performance is that organizations that match the strength of the coordinating mechanisms used with the demand for integration will perform better those organizations that have a mismatch. This does not require that strong or weak coordinating mechanisms are used to achieve better performance, but that strong mechanisms be associated with a high demand for integration or weak mechanisms be associated with a low demand for integration. In other words, demand for integration will moderate the effect of coordinating mechanism on overall IT performance. Hypothesis 4 captures this proposed test:

Hypothesis 4: Companies that match the use of strong (weak) coordinating mechanisms to situations where demand for integration is high (low) achieve higher overall IT performance than companies that do not.

The Research Model

Next, the four hypotheses presented above are combined into the complete research model. The objectives of the model in total are to extend our understanding of the relationship between integration and standardization, test whether the strength of coordinating mechanisms used by the IT organization are related to the demands for integration and standardization and determine if performance is related to an alignment, or match, of the IT governance with said demands. The overall research model is presented in Figure 4.

Figure 4 The Proposed Research Model
HIGH LEVEL SUMMARY OF DATA AND METHODOLOGY

We mailed surveys to 790 chief information officers (or individuals in equivalent positions with different titles) in Fortune 1000 firms. The sample was designed to generalize the results to large, multi-business firms. We have received completed responses from 37 CIOs (4.7% response rate) at this point. Additional follow-up is on-going as well as a final phase of sampling to occur in the near future. Expansion of sample size to improve statistical power is an important objective of this effort.

One of the unique features of the survey is the granularity designed into it. Questions were asked with respect to each of four domains within IT: technology, applications, data and business processes. This was particularly important because of how each of these domains is frequently governed very differently in multi-business unit firms.

We also contribute a new measure called Strength of Coordinating Mechanism. It combines 3 dimensions of IT governance to provide a more complete picture of the coordination mechanisms. This adds considerable depth to our previous notion of IT governance as being centralized, decentralized or somewhere in between.

Although sample size prevented comprehensive use of the control variables we have available in the survey, we did incorporate 3 dimensions of emphasis in IT as controls in regression models in the study. The three control variables capture the extent that the IT organization emphasizes low cost IS/IT operations, flexibility and responsiveness to user needs and business changes and innovation of business products/services using IT. Improved sample size may allow for the incorporation of additional control variables in subsequent analyses.
RESULTS

We begin the results section by quantifying the demand for integration and standardization. The average levels of demand for integration and standardization are reported along with their anticipated levels 3 years from now. The first, perhaps surprising observation, is that the demands are relatively similar across the four IT domains. This may be explained by very different levels of standardization and integration achieved to date that counterbalance the pressure to standardize in a particular domain. The overall interpretation is that demand is at least moderate for both standardization and integration, but that CIOs expect to see a sizeable jump in the demand in three years. The levels of demand for integration and standardization are presented in Figure 5 and Figure 6 respectively.
Figure 5  Demand for Integration by IT Domain

Figure 6 – Demand for Standardization by IT Domain
Relating the Demand for Integration to the Demand for Standardization

CIOs report that the overall demand for integration in their organizations is positively and strongly related to the overall demand for standardization. There are three basic relationships worth noting in our sample. First, there is a high correlation between the demand for integration and demand for standardization. This may be a result of the increased cost to integrate on non-standard technology and applications that leads organizations to standardize in order to facilitate integration. Second, there are no companies with little to no demand for both integration and standardization. Most companies have at least moderate demand for integration and standardization. Finally, the overall demand for standardization is generally higher than the demand for integration. This is a particularly interesting result considering that there may be some demand for standardization purely for the benefits that it provides without consideration of integration. At the same time, demand for integration generally does not exist without some accompanying demand for standardization. Taken together, these relationships are supportive of Hypothesis 1. These relationships may be viewed pictorially in Figure 7. These same general relationships held for all four IT domains, technology, applications, data, and business processes, although with slightly different coefficients. The technology domain shows the highest level of standardization for its own sake, while data shows the least. One explanation is that technology is generally standardized across the enterprise regardless of whether integration is desired or not. However, the main justification for standardizing data is to enable sharing or accumulating data (integration). Standardizing data purely for cost savings is not nearly as compelling as standardizing technology, applications or business processes.
Relating the Strength of Coordinating Mechanisms and Demand for Integration

CIOs also reported a positive relationship between the demand for integration and the strength of coordinating mechanisms used in IT across all four domains. After controlling for the emphases of each IT function, the relationship is positive and statistically significant. This result is supportive of hypothesis 2. Organizations that feel a greater demand to integrate, utilize stronger coordinating mechanisms. A similar relationship exists in each of the four IT domains.
Relating the Strength of Coordinating Mechanisms and Demand for Standardization

The relationship between the strength of coordinating mechanisms and the demand for standardization is not quite as clear as with integration. The overall effect is not statistically significant. Interestingly, the four IT domains are worthy of a more detailed look in this relationship. All five coordinating mechanisms are used with high strength in the area of coordinating business processes. It is clear that CIOs in our sample view the need for strong coordinating mechanisms as particularly relevant when the demand for integrating those business processes is high. The other domains did not indicate this same relationship.

Aligning for Performance

Across all four domains, there is a positive, though statistically insignificant, relationship suggesting that companies that match the demand for integration with the appropriate strength of coordinating mechanisms see improved IT performance relative to their competitors. The lack of significance may be a result of there being no or little effect. However, the small sample size coupled with the consistently, positive relationship across the four IT domains is encouraging that a population effect may be present, but requires more statistical power to discern.

IMPLICATIONS AND FURTHER RESEARCH

Impact of Integration Demands on IT Governance Choice

This study highlights integration and standardization as important considerations for IT and business executives to consider when designing organizational structures, in particular coordinating mechanisms. The conventional wisdom that the IT organization should mimic the structure of the business units may be antiquated. Instead, the specific demands of the organization should be considered. An organizational assessment surveying the CIO, top corporate executives and business unit management of what pressure they feel to integrate and standardize may be of particular use to the company as it conceives the best IT governance structure.
CIO & IT Organization Role Change

A more central IT organization with significant authority to drive integration and standardization requires an awareness of how a new role will be managed. CIOs, especially those with a more technical background, may lack the skills to handle such a prominent role in the organization. Even if they possess the right mix of skills, there may be reluctance to take on more than is already on their plate. The job they have is hard enough so why make things more complicated. Other corporate executives and business unit managers may be unwilling to relinquish control of IT decisions and concede power to the IT function. Even going beyond integration and standardization, a hot topic among CIOs is the ability to attract and retain quality IT employees that understand the business. A more centralized IT function elevates the requirements for IT employees that can coordinate the IT needs of the business.

Innovation

One potential concern when standardizing technology, applications, data and business processes is whether standardization stifles innovation. Companies that standardize may embrace the bottom-line efficiency and simplicity. But, do they sacrifice creativity and top-line revenue opportunities as a result? At a minimum, standardization may lead to a step function with respect to the organization’s ability to implement new IT systems. Rather than incremental change accomplished by each business unit, standardization requires that changes to technology, applications, data and business processes are completed as a company or at least with some level of consensus as to what the standard is. This requirement to “bring along” the organization as a whole may cause innovation to lag as a result of standardization. Organizations that seek standardization may need to seek alternative mechanisms to cultivate innovation. If such mechanisms are present, change can be accomplished efficiently within a standardized context. An alternative possibility is that standardization actually promotes flexibility and frees up resources from operational tasks to focus on new opportunities. This distinction is an important empirical question that should be pursued.
ABOUT THE AUTHORS

Carl Adams is a professor in the Carlson School of Management at the University of Minnesota. He received his doctorate in management sciences from the Krannert School at Purdue University. His research focuses on IS/IT strategy, organizational design and governance; IS/IT organizational capabilities and business alignment; and IS/IT structure and performance. His writings have been published in a number of academic journals and international conference proceedings including: MIS Quarterly, Decision Sciences, Journal of Decision Support Systems; Journal of Health and Human Resources; Journal of Consumer Marketing; and Information and Management. He served as the Department chair of the Management Sciences and Information and Decision Sciences at the Carlson School for 17 years. Currently he is the Director of the Management Information Systems Research Center and is Co-director of the CIO Research Consortium on IS/IT Organizational Design and Governance at the Carlson School.

Eric C. Larson is a PhD student in the Carlson School of Management at the University of Minnesota. He has 14 years of industry experience with three companies, Conoco, Inc., Anderson Consulting LLP and Quorum Business Solutions, Inc. Most recently, he served as Product Manager for Quorum – Liquids Marketing, an integrated contract, risk management and transactional system built to manage commodity trading businesses. Eric earned a bachelor’s of science in Chemistry from Colorado State University and an MBA from Oklahoma State University.

Weidong Xia is an assistant professor in the Department of Decision Sciences and Information Systems, College of Business Administration at Florida International University. He received his doctorate in information systems and strategic management from the University of Pittsburgh. His research interests include IT strategy, organizational design and governance; IT organizational capabilities and business alignment; IT project management; innovation adoption and evaluation; and quality and process management. He has published in a number of
referred journals and conferences including *MIS Quarterly, Decision Sciences, Communications of the ACM, Journal of Management Information Systems, Information and Management, European Journal of Information Systems, International Journal of Career Development, Journal of Statistics and Management Systems, Journal of End-User Computing*, and *International Conference on Information Systems*. Prior to joining FIU in Fall 2007, Dr. Xia was on the faculty of the Carlson School of Management at the University of Minnesota where he served as MBA MIS program coordinator, undergraduate MIS program coordinator, and taught a number of courses at the PhD, Executive MBA, MBA, and undergraduate levels. He is a co-founder and co-director of the CIO Research Consortium on IS/IT Organizational Design and Governance. He has worked closely with senior executives of a number of Fortune 500 companies.

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