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Timothy Kayworth
Baylor University

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Cutting IT Costs Through Corporate Information Technology Standards: The Role of Corporate Enforcement

Timothy R. Kayworth
Hankamer School of Business
Baylor University

Abstract

There is widespread concern among management that IT costs are excessive and growing too rapidly. Consequently, the desire to regain control over information technology related spending has become a high priority in many organizations in both private and public sectors. While a growing body of IS literature claims that implementation of corporate level IT standards facilitate greater levels of control over escalating IT costs, there is a noticeable lack of empirical evidence to support these claims. This study reports the results of a series of case studies designed to investigate the potential impact that the use of corporate level IT standards have on overall corporate IT related spending. Research findings suggest that when accompanied by sufficient levels of enforcement, corporate IT standards help to facilitate reduced IT costs in areas related to purchasing, maintenance, training, and support.

Introduction

Responsibility for computing is becoming more dispersed with greater levels of responsibility for the management of IT being delegated to business units, divisional IS, and individual managers (Tapscott & Carson, 1993). While increased autonomy provides individual units with greater levels of autonomy, it also contributes to escalating IT costs. Incompatible hardware platforms, redundant use of human and physical resources, and reduced economies of scale in IT purchasing, maintenance, training, and support are examples of such increases. In addition, upward pressure on costs has also been accelerated by the rapid growth of hardware, operating systems, and applications software options available in the popular desktop environment.

Normative claims made by the IS literature suggests that IT standards may serve as mechanisms that facilitate IT cost control (Violino, 1995; Costly, 1995), however, these claims remain unsubstantiated. These arguments can be based on the notion of economies of scope (Teece, 1987) which suggests that the recurrent use of shared resources across organizational units will result in lowered transaction costs. Applied to the IT context, economies of scope suggests that the recurrent use of shared IT standards across organizational units will result in reduced IT related costs. Given these arguments, the following research questions have been proposed:

Do corporate level IT standards have a positive impact on the ability of organizations to control IT related costs?

What factors influence the degree to which corporate IT standards can be effectively used to control IT related costs?

Methodology and Site Selection

Because IT standards are part of a firm's standardized routines and procedures, they are linked closely with the specific organizational context they are a part of. Therefore, factors related to organizational culture, values, past history, as well as characteristics of individual units may all play a significant role in how standards are perceived, how they are used, and how they affect the organization. Therefore, the case study research method provided a more intrusive methodology to better understand the nature and role of IT standards in different organizational contexts.

Site Selection. Initially, a "pool" of 22 potential case sites was identified through industry contacts and professional colleagues. Senior executives at each firm were contacted to explain the nature of the study and to determine the level of interest in becoming a research partner in the project. For those expressing an interest in participation, several criteria were applied to determine the suitability of each firm as a member of the study's sample (Table 1).

Across firms, IT standards potentially cover a broad range of IT assets. To frame and appropriately bound our work, we decided to focus on the set of formal IT standards firms were using to design corporate PC/LAN standards. PC/LAN technology refers to desktop personal computers, operating systems, and software as well as the associated hardware and network software required to "link" these devices into large-scale organizational computing networks.

Table 1. Site Selection Criteria

Criteria	Rationale
Bureaucratic organizational procedures	Choice of firms operating through bureaucratic procedures enhances the prospects for observing standards' effects on IT costs
Low levels of corporate diversity	Strong main effects between IT standards and their associated effects are expected to occur in environments characterized by lower levels of corporate diversity
Use of formal and explicit PC/LAN standards	Measurement of standards' effects on IT costs require formal, written PC/LAN standards
Existence of PC/LAN standards for at least 12 months	Use across time ensures that the effects to be studied will be observable. The study of IT standards must take into account lag effects or the delay between the use of standards and the time that actual effects are observed

The four sites came from diverse industries; nonetheless, each site was judged to be bureaucratic in nature and to be characterized by relatively low levels of corporate diversity. The selection of firms from multiple industries reduced the possibility that systematic effects from any one industry would emerge to influence the results. In turn, the level of corporate diversity (even though it was a relatively low level) that was associated with the four firms enhanced the overall generalizability of our findings.

Site Descriptions

Site 1 is a publicly held insurance company with branch offices throughout the southeastern United States. This firm has two major product divisions: retail insurance and the National Programs Division (NPD). The retail division sells wholesale insurance to private individuals through a network of agencies located throughout the southeastern U.S. Site 2 is a military base located in the southeastern United States. The mission of this base is to instruct military personnel in areas related to personnel and information management, computers and communications, meteorology, and training and support. The base is divided into squadrons that specialize in specific training areas. The third site is a large public school district located in Florida. The district has approximately 40 local area networks located at its various schools and administrative offices. Site 4 is a regional hospital located in the southern part of Florida. As a comprehensive facility, this hospital offers a broad array of services including radiation/oncology, respiratory therapy, wellness programs, obstetrics, imaging, and pharmaceuticals. There are approximately 1,000 users on the hospital's information system.

Data Collection

Data were collected through structured interviews from a minimum of seven respondents at each site. At the corporate level, the individual responsible for making decision or forming policies regarding PC/LAN standards was selected. Two individual's (the unit's manager and a lead technical person) were selected from a minimum of three units within each organization. Interviews were administered across case sites according to suggested case research practices (Yin, 1989).

Findings

Findings from this study help demonstrate that the mere existence of corporate level IT standards does not necessarily insure their success at reducing IT costs. Site 3 had very detailed and comprehensive standards, however, as Table 2 illustrates, this same site had very low enforcement of standards (and a correspondingly low ability to reduce IT costs). In contrast, at sites where enforcement of standards was taken seriously, the positive impact of these standards on reducing IT costs appeared to be much more favorable.

These findings are consistent with remarks made by Costly (1995) who states, "IS executives who insist on centralized policies [standards] without effective enforcement will be ignored." Thus, it appears from these findings that sites 1,2, and 4, were able to leverage the use of standards to reduce IT related costs while site 3 was unable to accomplish this. Data collected from interviews suggests that lack of enforcement was a major reason for the inability to reduce IT related costs at site 3. Comments from one technology coordinator at site three evidenced this general lack of enforcement of IT standards at this organization. He stated, "Standards need to be re-written, but better enforcement and monitoring is also needed."

Table 2. Summary of Key Findings

	Company 1	Company 2	Company 3	Company 4
Level of Detail of Standards	Moderate	High	High	Moderate
Enforcement of Standards	High	Moderate-High	Low	High
Level of IT Cost Reduction	No effect	Significant Cost Reduction	Moderate Cost Increase	Moderate Cost Reduction

There was widespread agreement that sanctions for non-compliance with standards are generally non-punitive in nature. The most typical sanctions reported were disapproval or delays in purchase orders, refusal to maintain non-standard technology, and refusal to allow network connection for non-standard technology. Although each of the four firms utilized these built in enforcement processes, they were exercised too much different degrees across sites. This was particularly evident at sites 2 and 3.

Conclusion

It appears that enforcement may be critical to the successful implementation of IT standards in corporate environments. If one views organizations from a rational perspective, it would be expected that an organization's multiple stakeholders would act in a manner consistent with overall firm objectives to reduce corporate IT costs. In effect, firms could expect IT costs to fall through economies of scope (Teece, 1987) as multiple business units adopt and comply with common IT standards. Under this "rational" perspective, enforcement would not be regarded as a significant factor. However, we argue that the political view of organizations (Morgan, 1989) provides a more realistic perspective; namely that organizations are political systems in which stakeholders typically have unique and differing agendas, goals, and priorities (Morgan, 1986). Under this latter view, in the absence of enforcement, organizational stakeholders (e.g. business units) may act in a fashion inconsistent with overall corporate objectives to reduce IT related costs. Thus, the political view of organizations suggests that the mere presence of written standards and policies may not necessarily insure corporate success in reducing IT costs. Rather, consistent with an agency theory approach, (Hesterly, Liebeskind, & Zenger, 1990) principals (corporate IS) may need to enact strict enforcement mechanisms to insure agent (business unit) compliance with corporate level IT standards. In the absence of such enforcement, the IT standards may be ineffective at reducing corporate IT related costs.

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