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Using ITIL to Improve IT Services

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ABSTRACT

This paper examines the adoption and implementation of the Information Technology Infrastructure Library (ITIL). Specifically, interviews with a CIO, as well as literature from the ITIL Official site and from the practitioner's journals are consulted in order to determine whether the best practices contained in the ITIL framework may improve the management of information technology (IT) services, as well as assist in promoting the alignment of Business and the IT Function within the organization. A conceptual model is proposed which proposes a two-way relationship between IT and the provision of IT Services, with ITIL positioned as an intervening variable.

Keywords

Information Technology Infrastructure Library, Information Technology Services Management, IT-Business Alignment

INTRODUCTION

The Information Technology Infrastructure Library (ITIL) provides a framework for the management of organizational information technology services. While ITIL emerged as a collection of best practices for the management of information technology services, recent corporate experiences suggest that adoption of ITIL – and ITIL v.3 in particular – may provide an approach for achieving tighter alignment between IS and business. Although alignment between IS and business continues to be an elusive accomplishment for organizations, prior research has proposed numerous benefits to be gained from IS-Business alignment, including better integration of business and IT plans, more responsive IT deployment, and more strategic IT applications. Despite these potential advantages, however, alignment remains difficult to attain.

In this paper, we focus on the IT Infrastructure Library, a collection of best practices. We begin by providing the reader with a brief introduction to the IT Infrastructure Library, as we overview the basics of ITIL. We describe experiences gathered from companies which have adopted ITIL in order to benchmark best practices emerging from ITIL adoption, as well as to determine potential results arising from ITIL. Following this, we present a conceptual model. The model is informed and guided by the experiences of a CIO, who summarize best practices from his company's adoption of the ITIL framework. Although this work in progress goes as far as presenting a conceptual model, we conclude the paper by outlining additional steps needed to garner additional support for the model, and develop hypotheses.

BUSINESS-IT ALIGNMENT

Alignment between a business organization and the information technology (IT) which the firm deploys has been a goal for many organizations, and remains an elusive goal for many organizations. The importance of aligning business and IT remains critical in today's business environment where customers may be local or global, familiar faces and companies, or virtual customers elsewhere on the planet. Numerous researchers have discussed the importance of alignment for IT (Chan, Copeland, and Barclay, 1997; Croteau and Bergeron, 2001; Henderson and Venkatraman, 1993; Kearns and Lederer, 2000; Sabherwal and Chan, 2001). Luftman and McLean report that one of the top issues for IT executives is how well IT is aligned with the business strategy (Luftman, and McLean, 2004). Additionally, today's hypercompetitive business environment requires agile responses from organizational IT, whether the business is large or small, local, national or global.

While the MIS literature has repeatedly stressed the need for alignment between IT and business, prescriptions for attaining and maintaining this alignment have proven to be as elusive as the alignment itself (Cambell, Kay, and Avison, 2005; Chan, 2002; Reich and Benbasat, 2000). Weiss states that despite sophisticated governance and alignment models such as COBIT, CIOs remain dissatisfied with IT alignment (Weiss, Thorogood, and Clark, 2006). Luftman et al. (2004) state that "Business-IT alignment refers to applying Information Technology in an appropriate and timely way, in harmony with business strategies, goals and needs" (page 69). They emphasize the importance of IT management by noting that one of the most important challenges facing management is to construct an alignment between IT and the business. The researchers note that factors which inhibit the development of IT-Business alignment include IT which does not prioritize its tasks well, as well as an IT function which fails to meet commitments. As a means of assessing the firm's extent of alignment, the authors present a conceptual alignment maturity model in the shape of a triangle, or pyramid. As Figure 1 indicates, the bottom of the model is where business strategy and IT strategy are furthest apartment. However, as IT and business move closer toward alignment, and progress further up the pyramid, the degree of alignment between the two increases. The top of the pyramid is the point where alignment between the two strategies (business strategy and IT strategy) converges. The researchers divide the pyramid into five distinct steps, with the lowest step, Level 1, appearing at the bottom of the pyramid and Level 5, that of "optimized process" appearing at the top of the pyramid.

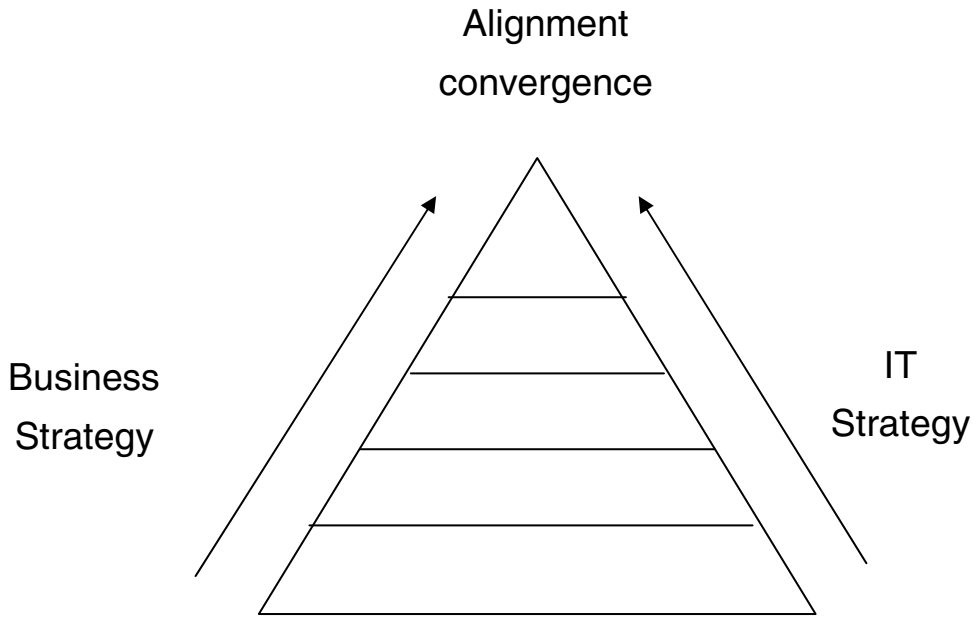

Figure 1. Addressing Business-IT Alignment Maturity; appears as Figure 3-3 in Luftman, et al., (2004), page 73.

Alignment has become critical to the organization, not only in driving the operational duties and responses of the IT function, but in assisting IT with defining the future of the organization's technology in conjunction with business. In businesses where the alignment level is high, IT and Business view each other in the role of a partner, a partnership where each is

familiar with the workings of the other, and each subscribes to the goals set forth by the other (McNurlin and Sprague, 2004). Pearlson and Saunders (2006) state that "although IS can facilitate the movement and exchange of information, an information system that is inappropriate for a given operating environment can actually inhibit and confuse that same exchange" (page 19). The authors go on to state that successful firms are those who balance their Business Strategy with their Information Strategy and Organizational Strategy, where balance indicates that both Information and Organizational strategies are driven by, and react to, the firm's overarching Business Strategy (page 20). Further, when one strategy changes, whether because of a change in the business environment or perhaps a change to the focus of the organization itself, the other two strategies must adjust as well to maintain the balance between the three (page 20). Similarly, the firm's choice of infrastructure and architecture must be guided by the firm's strategy, as IT decisions must answer to the type of data needs presented by the organization as a whole. Included in this mention of "data needs" would be the extent to which the firm centralizes or decentralizes practices, data collection, and managerial decision making (Ross, Weill, and Robertson, 2006).

AN ITIL-INFORMED CONCEPTUAL MODEL

ITIL, or the Information Technology Infrastructure Library, is proposed in this paper as a means of assisting the IT function in its goal of achieving alignment with the Business. ITIL, a set of best practices which is focused on IT service management, is the property of the British Office of Government Commerce (OGC). ITIL represents a framework composed of a series of best practices for managing IT within the firm, where IT Service Management is "concerned with delivering and supporting IT services that are appropriate to the business requirements of the organization" (Pink Elephant, page 15).

In describing the importance of a successful ITIL implementation to an organization, James McGrane, VP and CIO (Ret.), MeadWestvaco, notes that the IT environment within today's IT environment consists of a collection of "IT stuff" into which the organization is channeling funding, as shown in Figure 2.

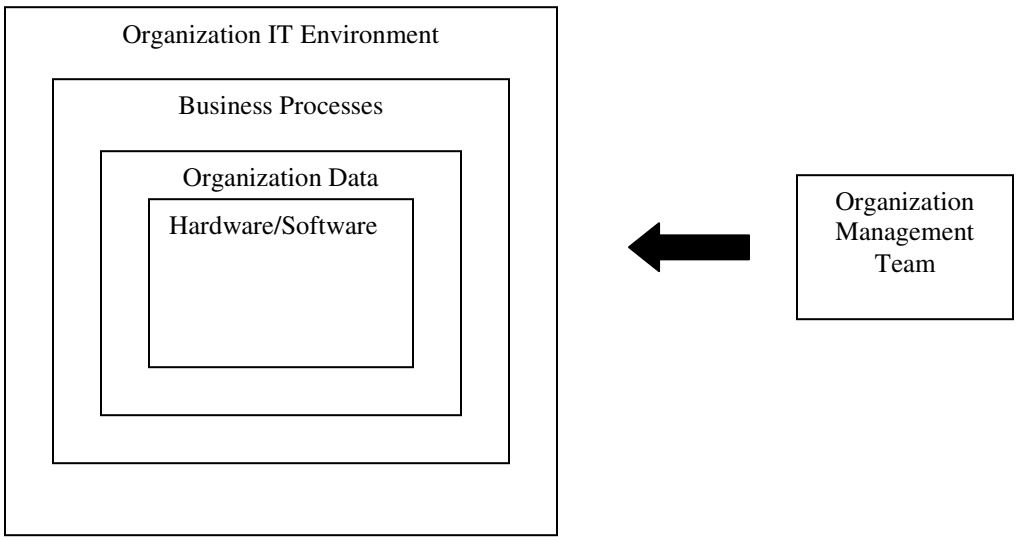

Figure 2. The Organization's IT Environment

This environment consists of a collection of business processes, a majority of which have been computerized or captured by information technology, vast amounts of data, collected and stored in databases, and hardware and software throughout the organization. McGrane notes that the organization provides funding to the IT function in order to achieve necessary levels of

support for business processing, to deploy IT in a fashion which enables the firm to pursue and achieve its goals and objectives. In return for this funding, the CIO – as well as the IT function generally – provides the organization with information concerning how the dollars have been spent, and how much the IT is costing the organization. Unfortunately, McGrane says, one thing which constantly interferes with this arrangement is that person who experiences a software or hardware problem, and does not arrange for the problem to be solved through the IT function. Instead, the person turns to a "power user," or co-worker, and the co-worker corrects the problem. In addition to correcting the problem, the co-worker has dashed IT's ability to inform the organization of what its IT support is costing.

McGrane faced numerous challenges during his tenure as CIO. As CIO of Mead, he led the organization through the merger of Mead and Westvaco. Further, the company invested in and deployed an ERP system, SAP, across the corporation, and finally, faced the divestiture of NewPage, a $2.5 billion operating unit in 2005. Against the backdrop of this corporate activity in addition to day-to-day operating issues, McGrane knew that operating the IT function in support of the business would prove difficult. To accomplish all of these tasks, McGrane led a fully integrated deployment of ITIL across MeadWestvaco from 2004 through 2006.

McGrane credits the ITIL implementation with enabling the company's IT to function as a business in support of the business. He describes today's IT environment as one of "Run, Change, Run." First, IT and business are intertwined with one another in today's firm. Second, given application integration, ERP systems, and organizational IT dependence, there is no longer an atmosphere in the organization where there exists the luxury of being able to take down an application. Hence, the goal of IT in providing service to the firm is to make changes to the application, infrastructure, hardware, etc., and to get it back up and running as quickly as possible. With reference to the intertwining, he notes that removing, changing, or modifying IT within the firm can and does have impacts that extend beyond a single application. For him, ITIL enabled the IT function to proceed in a systematic fashion, and to realize where impacts from changes in one piece of hardware, or one application, etc., were likely to emerge. An added bonus was that the results of the ITIL implementation resulted in a 10-15% reduction in operational IT expenses, while at the same time significantly enhancing delivery and value. McGrane noted that in the global manufacturing environment in which MeadWestvaco existed, the company needed to have a lean, integrated, nimble service delivery capability with flexible solutions, and superior operations to meet the demands of an ever changing and increasingly competitive market.

McGrane likens the ITIL framework to an ERP system. A company decides to implement an ERP system because data throughout the company must be available and visible to other parts of the company. The ITIL framework answered this for the firm's IT function, as McGrane notes that ITIL is like an ERP system for the IT function. We present a conceptual model of the relationship between business, IT, and the provision of IT services (Figure 3).

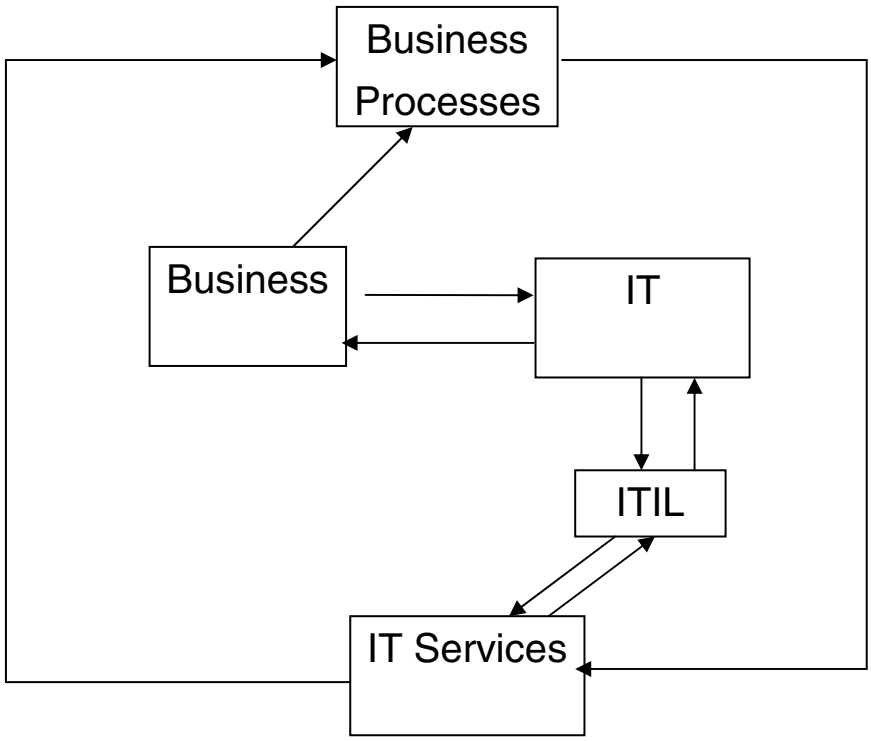

Figure 3. A Conceptual Model of ITIL Impacts on IT Services

The conceptual model drawn in Figure 3 posits two way exchanges between the firm's IT function and business. This is necessary as new innovations appear on the horizon, or as regulations change or business practices and processes change. Business drives the business processes, while IT provides and drives IT services to the organization. However, the model places ITIL in between IT and IT Services. In this capacity, ITIL presents IT with a framework from which to approach, structure, and respond to IT Services. Additionally, when a service experiences problems (or an incident occurs), the data tracking and response practices in ITIL notify IT of these problems in order to enable IT to move quickly to restore service levels to their agreed upon specifications.

Although McGrane's experiences with ITIL are at the center of this paper, other firms as well have experienced similar successes with ITIL. An article in Bank Technology News notes that Sallie Mae used ITIL to break down silos which existed in their IT function. ITIL was instrumental in assisting the company in standardizing processes and procedures across the company. Before ITIL implementation, the company was awash in diversified procedures. Their VP of Enterprise Technologies is quoted as saying that "the fact that we had these different practices made it virtually impossible to comply with audits. We had to standardize some of those procedures" (Adams, 2006, page 63). Steinberg and Goodwin credit ITIL with raising customer satisfaction, reducing waste in the IT organization and lowering operating costs. They state that Web incidents or problems at Caterpillar had a response time target for resolution of 30 minutes – a target that, pre-ITIL, was accomplished only 30% of the time. Following ITIL implementation, this target is met more than 90% of the time (Steinberg and Goodwin, 2006).

Remarkable results such as these are due in part to the ITIL framework which stresses response and data and information recording (Fox, 2006). Central to ITIL are the functioning of the call center and the "Configuration Management Database," or CMDB.

The call center is a customer-facing frontline, first-response point of contact for IT within the organization. All calls into the call center are recorded as incidents; an incident could be anything from a printer malfunction to a Web service which has gone down. In either case, calls to the call center are recorded and prioritized in such a way that even the most insignificant item is given prompt response. ITIL responses are geared around either resolution (in which the incident is resolved to the satisfaction of the customer), or escalation. Escalation occurs when the call center is unable to solve a problem or incident.

When escalation happens to an incident, it is then termed a problem. Problems, too, are recorded and fully investigation. The investigation results in either determining the root cause for the problem (in which case it is solved), or in continuing to research the issue while a "work-around" is provided. The work-around allows the business to continue to function through alternative means.

All calls to the call center, all incidents, all problems, etc., are recorded in an error database, which in turn enhances IT's knowledge abilities, and hence IT's ability to deliver on promised services. When future calls come in or additional incidents are reported, the IT function has a knowledge repository to which it can turn to determine whether a pattern is emerging with a particular software or hardware. When one company began recording calls, they quickly discovered the cause of failures, a feat that they would have been unable to accomplish had they not been recording incidents in order to discern patterns emerging among multiple calls (Thibodeau, 2007).

A second feature of the ITIL framework is that of the CMDB, the configuration management database. Firms which subscribe to ITIL utilize the CMDB as a knowledge repository for all things IT. All of the firm's hardware is recorded into this database, including description information such as make and model, as well as data concerning acquisition date. A hardware record would be updated over time to reflect any changes, repairs, modifications, etc., to a particular piece of equipment.

In a similar fashion, all of the organization's software as well as infrastructure components are also recorded in the CMDB. As records are added to the CMDB over time, it assumes more the role of an organizational knowledge repository. It gives IT an audit trail to which they can turn when investigating possible likely causes for an incident or problem. Additionally, when IT is conducting an investigation, the CMDB provides fertile ground when searching for similar incidents or problems.

Having access to the data and information recorded in the CMDB permits IT to inform their investigations with a knowledge/error database. In turn, comparing incidents to known events in the knowledge/error database permits faster responses to problems, and systems which return more quickly to providing business support (Marquis, 2007).

ITIL v3 is being touted as having incorporated best practices geared toward more strategic aspects of the organization (Kamath, 2007). ITIL will incorporate stated service strategies into the framework. This feature aims at reaching service level agreements with the business, and structuring Service Operation, Service Design and Service Transition practices aimed at continuous service improvement (Meijer, et al., 2007). Organizations which adopt and implement ITIL may finally realize IT-Business alignment.

DISCUSSION AND FUTURE DIRECTIONS

ITIL seems to hold great promise for organizations wishing to gain control of the manner in which the IT function provides IT services, while at the same time providing services which better support the business. Further, articles in practitioner publications give preliminary indications that ITIL v3 may be an effective tool in achieving alignment between the IT function and business (Gruman, 2007; Murray, et al., 2007; cites here). Luftman defines six components of assessing alignment maturity (Luftman and Kempaiah, 2007). It is essential to measure communications, the value of IT, governance, partnership, scope and architecture, and skills. Luftman's five levels of alignment maturity focus on processes and process improvement. ITIL addresses a number of these components and provides a framework for defining services and communications with business customers. Our preliminary research, based mainly on interview work, seems to echo these predictions by noting that the provision of better service of IT for the organization, and more consistent service offerings has given credibility to the IT function. Our next steps, then, are clear.

Our conceptual model (Figure 3) is informed through Jim McGrane's details of his work and experiences at MeadWestvaco. Additional interviews with other companies at various stages of ITIL implementation are required in order to obtain additional support for the model. This, however, may result in corrections or modifications to the conceptual model. Once the conceptual model has received verification, it will then be possible to generate propositions based upon the model, and to work toward transforming the conceptual model into a research model. We hope to reach the point where hypothesis testing can be accomplished, as this will assist us in understanding the relationship which ITIL may bring to IT services management, as well as to the Business-IT dynamic.

Finally, there is the task of investigating the impact which successful ITIL implementation has on IT-Business alignment. This paper proposes that ITIL adoption and implementation will assist in bridging the alignment gap. As our plan is to engage other organizations which have implemented ITIL into this research, we have an avenue through which to identify

factors critical to alignment. If we are able to identify similar factors across multiple organizations through our exploratory interviews, we may reach the stage where propositions aimed at examining the impact of the factors can be generated. In turn, this will guide our work in transforming our conceptual model into a research model, a research model aimed at improving our understanding of IT-Business alignment.

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