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IT Service Departments Struggle to Adopt a Service-Oriented Philosophy

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ABSTRACT

Many IT service departments are adopting IT service management best practice frameworks such as the IT Infrastructure Library (ITIL) to improve the quality of service to customers. This study reports on recent surveys and case studies of organizations which have embarked on IT service management improvement. It highlights specific difficulties experienced by organizations. Six factors were found to be critical in achieving an effective service-oriented philosophy. The factors are support from senior management; the threat or opportunity to outsource IT services; integration of processes to provide end-to-end service; involvement of business stakeholders; culture change of IT staff to service excellence; and the redesign of processes prior to investing in tools. Emerging IT service frameworks such as ISO/IEC 20000, and the CMMI® for Service Delivery are discussed.

Keywords: Organizational culture, Outsourcing of IS, Process Improvement, IS Operations Activities, Systems Life Cycle Management, Information Services Organization, Service Quality, IT service management, IT Infrastructure Library, ITIL, ISO/IEC 20000, ISO/IEC 15504, CMMI® for Service Delivery, CMMI-SVC®.

INTRODUCTION

It is becoming increasingly recognised that the provision of high quality and competitive service requires organizations to adopt a customer-centric, service-oriented philosophy. The growth of the service economy has seen a paradigm shift which has moved the focus from goods to services, and impacts the business processes, management practices, employee policies, engineering knowledge, and culture of organizations (Rust & Kannan, 2003; Rust & Miu, 2006). After analysing a large financial service provider in the Netherlands as an example of a service-oriented enterprise, Janssen and Joha determined that the main critical management issues, apart from a carefully executed strategy, are the 'redesign and reorganization of activities and roles, the standardization of processes, applications and the underlying IT architecture, and management of the transformation by involving all stakeholders.' (2008, p. 35).

Information technology (IT) is considered to be the ‘critical enabler’ for transforming service industries (Chesbrough & Spohrer, 2006). As IT systems become more powerful and cost-effective they provide the potential to efficiently gather and analyse data, and to codify and transmit knowledge to the far corners of the globe (Bitner & Brown, 2006; Chesbrough & Spohrer, 2006). Although IT service providers are constituents in the service sector, their total contribution to the service sector can only be grasped by considering that private businesses in the USA spend 50 percent of all invested capital on IT – hardware, software and communications equipment (Laudon & Laudon, 2006). Specifically within the service sector, IT plays an important role in helping organizations provide better customer service, create new products and services, enhance relationships with suppliers, and improve decision making.

It has been noted by Johnson et al. (2007) that businesses are demanding more from their IT organizations than ever before. As well as ‘better and more disciplined provisioning of IT services to ensure smooth operation’ (p. 595), IT is expected to respond with agility in light of new business opportunities, to demonstrate responsible financial management and to satisfy internal staff and external customers. This level of service can only be achieved with effective relationships and communication between IT and lines of business.

However, despite the fact that organizations are increasingly reliant on IT and the increasing awareness of the need to become service-oriented and customer-focussed, many IT service providers are struggling to change the culture and processes within their own departments or organizations. Many IT service providers are still characterised by a culture which is technology-focused rather than customer-centric. Many of the IT line managers are ‘predominately ex-technologists’ (Bruton, 2004, p. 4).

This paper considers the people, process and technology issues related to improving IT service management. Although there is growing adoption of existing frameworks and standards, such as the IT Infrastructure Library (ITIL) and the IT Service management standard (ISO/IEC 20000), and development of new frameworks such as CMMI-SVC[®], many IT service providers find it an almost insurmountable challenge to achieve effective end-to-end service. This paper strives to answer the research question: what factors inhibit the transformation of IT service providers when seeking to adopt a service-oriented philosophy? The paper is structured as follows. The background provides a summary of popular and emerging standards for IT service management. Then, the research methodology is briefly explained, followed by a discussion of challenges identified through surveys and case studies. The conclusion includes directions for future research.

BACKGROUND

Recently, there has been a concerted effort to develop, refine and promulgate frameworks for IT service management. In this section, the current and emerging frameworks are described.

ITIL - IT Infrastructure Library

IT Service management standards such as the IT Infrastructure Library (ITIL) are of increasing importance to organizations around the globe. Although the actual number of organizations adopting ITIL is not known, there are many indicators of the growing

awareness and adoption of ITIL. For example, there are now 46 national chapters of the IT Service Management Forum (itSMF) with in excess of 100,000 members worldwide (itSMFI); itSMF conferences are enjoying record attendances; the demand for ITIL-qualified staff is increasing, accompanied by an exponential rise in the number of people qualifying for the ITIL Foundation certificate. The core of ITIL version 2, as released in 2001 comprises five service delivery processes (service level management, financial management, capacity management, IT service continuity management, and availability management); five service support processes (incident management, problem management, change management, release management and configuration management) and one service support function (service desk) (OGC, 2002). Service support processes apply to the operational level of the organization whereas the service delivery processes are tactical in nature.

ITIL version 3 was released in 2007 and comprises five core texts: IT Service Strategies; IT Service Design; IT Service Introduction; IT Service Operations; and IT Service Improvement (*Service Strategy*, 2007). The latest version focuses on the life-cycle of services and attempts to remove process silos.

CMMI-SVC - Capability Maturity Model Integration for Service Delivery

In recent years there has been an increasing awareness of the need to integrate models for software development with processes for service support and management. The focus is moving to a life-cycle approach with shared processes rather than the confusing situation today whereby organizations are grappling with multiple models to ensure best practice in development, implementation and ongoing support.

The growing realisation of the importance of IT service management is evidenced by the current development work by the Software Engineering Institute on CMMI for service delivery (CMMI-SVC) (Douglass, 2007). Process areas focused on service delivery activities have been initially drafted and will be scheduled for piloting and refinement after the release of the CMMI for Acquisition (CMMI-ACQ) (Hollenbach & Buteau, 2006).

The CMMI-SVC comprises 25 process areas spread over four categories: process management, project management, service establishment and delivery, and support. Of the 25 process areas, 16 are common to CMMI-DEV and CMMI-ACQ. Supplier agreement management is shared by CMMI-SVC with CMMI-DEV. There are five new service process areas: problem management, incident and request management, service delivery, service transition, and capacity and availability management. CMMI-SVC also includes three optional service process areas: organizational service management, service system development and service continuity (SEI, 2006).

ISO/IEC 20000 IT Service Management Standard

In December 2005, ISO member countries adopted a standard for IT service management - ISO/IEC 20000, based on BS 15000 which was derived from ITILv2. ISO/IEC 20000 comprises five groups of processes: service delivery processes (service level management, service reporting, service continuity and availability, budgeting and accounting for IT services, capacity management, information security management); relationship processes (business relationship management, supplier management); resolution processes (incident management, problem management);

control processes (configuration management, change management); and release management (ISO/IEC, 2005).

A comparison of the ISO/IEC 20000 processes with CMMI-SVC reveals that the majority of the ISO/IEC 20000 processes are represented in CMMI-SVC with the possible exception of information security management, business relationship management, and service reporting.

ISO/IEC 15504 – IT Assessment Standard

In 2005, a team of researchers at the Public Research Centre Henri Tudor in Luxembourg developed a process reference model (PRM) and process assessment model (PAM) consistent with ITIL and compliant with the IT Assessment Standard ISO/IEC 15504 (Di Renzo, Barafort, Lejeune, Prime, & Simon, 2005). The Assessment and Improvement integrated Approach (AIDA) project developed the PAM based on the ISO/IEC 15504-5 assessment model (ISO/IEC, 2003) and includes process performance indicators for base practices and work products, and process capability indicators. The PRM includes the five ITILv2 service support processes (incident management, problem management, configuration management, change management and release management) and the five ITILv2 service delivery processes (service level management, IT financial management, capacity management, IT service continuity management and availability management). The ITIL books were used to identify input and output work products which were then classified according to relevant processes.

In June 2007, two new work items were proposed to the ISO/IEC Standards Working Group responsible for IT Service and Operations Management (JTC 1/SC7 WG25). To form a bridge between the IT service management standard and the IT process assessment standard, an exemplar process assessment model for IT service management is proposed as Part 8 of ISO/IEC 15504, and a process reference model is proposed as Part 4 of ISO/IEC 20000. The completion of these parts will enable compliant assessments of process capability to be conducted on IT service management processes.

RESEARCH METHODOLOGY

Since August 2005, researchers at the University of Southern Queensland have undertaken a project in collaboration with the Australian chapter of itSMF. The project aims to investigate the adoption of frameworks for improving IT service management. The project has taken on international significance with the collaboration of academics and researchers from many other universities including St Gallen (Switzerland), De Montford (UK), Appalachian State (USA), Carlton (Canada), NHH (Norway), and members of itSMF USA and itSMF Thailand.

The IT service management research project has surveyed delegates at the itSMF Australia Conferences in 2005, 2006 and 2007. The survey has been replicated at itSMF conferences in Thailand and Norway. Over the past three years, IT Service Managers from 17 organizations in the public and private sector have been interviewed to gain a deeper understanding of the benefits and challenges of improving IT service management through ITIL adoption. The interview instrument is based on that developed by Hochstein et al. (2005) for interviews with six German firms. The interviews, conducted in Australia, United Kingdom, New Zealand and

United States of America, have been transcribed, checked for accuracy and analysed to extract themes pertaining to the implementation of ITIL and ISO/IEC 20000.

This paper draws on the findings from the surveys and case studies to investigate factors which inhibit the transformation to a service-orientation as an objective of ITIL adoption.

DISCUSSION

All the organizations who responded to the Australian itSMF surveys had adopted ITILv2 and were making substantial progress in implementing this framework. To date, organizations have given priority to implementing the service desk function, incident management and change management processes. The strongest motivating factor to implement IT service management improvement is to improve the focus on IT service, followed by a desire to improve IT/business process integration, and to a lesser degree, internal compliance, cost reduction, and external compliance.

The 2007 itSMF Australian survey results confirmed that IT service management can help to promote a service-orientation: the highest rating benefit, selected by almost 70 percent of respondents was that IT service management provides improved customer satisfaction (Cater-Steel, Tan, & Toleman, 2008). Half of the respondents selected improved response and resolution, closely followed by clear identification of roles and responsibilities. The fourth ranked benefit was that IT services are better coordinated, followed by improved IT resources use. In contrast, the survey of the participants of the 2007 Thai itSMF Conference revealed less than half the respondents were adopting ITIL, although many had internally developed IT service management initiatives (Lawkobkit, 2008). It would appear that ITIL is more established in Australia: 2007 saw Thailand's first conference but Australia's tenth.

The interviews with IT Service Managers demonstrate that implementing ITIL can transform IT service management and provide benefits to organizations such as a more predictable infrastructure from improved rigour in testing and system changes, improved consultation with IT groups within the organization, smoother negotiation of service level agreements (SLAs), reduced server faults, seamless end-to-end service, documented and consistent IT service management processes across the organization, and consistent logging of incidents.

Many of the IT Service Managers interviewed reported that they have not made as much progress with ITIL implementation as they desired, due to problems such as lack of management support, cultural change in terms of resistance from technical staff, and delays in establishing an appropriate tool set.

To provide a more detailed discussion of the factors impeding the shift to a service orientation, the four-level IT-service performance management framework developed by Praeg and Schnabel (2006) is used to review the data collected. The rationale underlying the framework is based on the understanding that the strategic level and process levels determine the performance requirements while the tool level secures the sustainability of the performance.

Strategic Level – Executive Support and Outsourcing Trend

It was no surprise that the surveys revealed that commitment from senior management is regarded as the most critical factor for successful IT service management implementation. Managers interviewed also stressed the importance of support from senior management. As well as being necessary to guarantee funding for resources such as training, hardware and software, senior management support is essential to endorse policy and enforce compliance to the standard processes across the entire organization. Effective culture change is not possible without support from the highest level. To gain executive support most of the organizations interviewed sought approval by presenting a business case. However, there was a tendency by some organizations to view ITIL as ‘business as usual’ rather than as a project. Some view ITIL as an ongoing process improvement program (Cater-Steel & Pollard, 2008). This tendency to adopt ‘standards by stealth’ contradicts a basic tenet of IT governance: projects should not commence without an approved business case setting out all known and foreseeable risks, specification, benefits and costs of the project (Musson & Jordan, 2006).

Many of the Service Managers interviewed commented on the practice of outsourcing IT services. Increasingly, organizations are outsourcing all or part of their IT infrastructure services. According to Bitner and Brown (2006), standardised processes stimulate growth in off-shoring and will accelerate the trend to source service IT provision from developing nations.

The Gartner group has estimated that the worldwide IT outsourcing market will grow from the US\$180 billion revenues in 2003 to US\$253 billion in 2008 at a compound annual growth rate of 7 percent (Gonzalez, Gasco, & Llopis, 2006). The IT Service Manager of a large government department stated that the organization wanted to outsource some services but could not as the processes were not adequately documented. In this case, improving IT service management was seen as the precursor to outsourcing. A large financial company reported that ITIL adoption facilitated outsourcing of infrastructure support. This view is consistent with that of Janssen and Joha (2008) who claim that shared service centres based on service level agreements are often a first step towards outsourcing. On the other hand, a large organization in the financial sector saw certification to ISO/IEC 20000 as a defence against outsourcing. This firm successfully changed the culture of the organization by urging IT staff to adopt a service-centric focus to enable the IT department to become the ‘supplier of choice’ for other departments in the organization (Cater-Steel & McBride, 2007).

Business Process Level – End-to-end Service

As part of ITILv2 adoption, many organizations found it effective to appoint process owners for each of the ITIL core processes. This certainly provided impetus to define and implement each process but raised the difficulty of integrating these processes to enable a seamless end-to-end provision of service. A large government department reported that each section was performing their processes well but that the users had ‘fallen down the sink in this great big hole between two processes’. Other organizations explained the importance of involving all stakeholders in integration mapping workshops. A significant effort is required to ensure the interfaces between processes are effective. Steinberg warns of the risks of only implementing selected processes and insists that all processes need to be developed simultaneously (2005).

It is evident that ITIL is providing the means to compensate for the four gaps between users' expectations and their perceptions of the service provided by the IT department as identified by Pitt et al. (1998). Through better communication and a stronger business and strategic focus, IT managers can understand what the users want. Rather than the time consuming and onerous task of developing their own standards, ITIL provides a convenient starting point for IT Service Managers to set and monitor achievable service quality standards. With the help of effective SLAs, delivery of a structured and integrated service can deliver on the promises made by the IT department.

IT-Service Level

The most difficult aspect of ITIL implementation was evident at the IT service level with new terminology, policies, procedures, and employee performance evaluations modified to include ITIL.

Managers who reported successful implementation of ITIL stressed the importance of identifying stakeholders and especially gaining the commitment of all IT staff. In one large financial company, the external consultants who were contracted to implement and enforce the new processes were referred to as 'ITIL Nazis'. A university found it very difficult to persuade technical staff to complete documentation of their activities. This challenge was overcome by a charismatic 'Doctor ITIL' who conducted fun-filled workshops and training seminars to engage with the IT staff as well as corporate users.

One of the difficulties in transforming IT culture is due to the practice of promoting people with good technical skills to management positions (Bruton, 2004). Unfortunately, these people often do not have expertise in customer service management or relationship management. For example, some firms interviewed were grappling with changing their IT service metrics to collect and report statistics that were meaningful to the customer rather than the technology.

Most of the managers interviewed reported that one of the most effective change management activities was the simulation game included in the ITIL Foundations training course. Each training provider has a variation on the experiential learning exercise which might be set, for example in a busy shipping port, railway or space shuttle launch site. During the game, players become aware that delays in providing work-arounds for incidents or solving problems will have dire consequences. As well, the importance of building up a knowledge base becomes apparent. Feedback from interviewees repeatedly indicated that the game resulted in a change of attitude of many technical staff. They realised how their work impacted on the profitability and reputation of the business.

Tool Level

According to Praeg and Schnabel (2006), the tool level encompasses methods and instruments. Tools vendors have responded to the increased popularity of ITIL by developing sophisticated, integrated tools. These tools facilitate the end-to-end and life-cycle view by integrating the recording of incidents with the configuration management database and change management. There are also discovery tools which monitor the performance of network components and assist in diagnosis,

reconfiguration and recovery. However, many managers interviewed described that their initial attempt to adopt ITIL failed because they purchased a tool before understanding and developing their processes. A large government department were many months through a tender process before they realised their specification was totally inadequate. Another government department explained the tool selection process totally derailed the ITIL project. Two of the large finance companies interviewed reported they had a history of purchasing expensive IT service management systems which were never implemented. There is evidence that many organizations focus on acquiring tools without first designing IT service management processes. The mistake of premature purchase of tools is symptomatic of the culture of focussing on technology as a panacea, instead of first considering the processes the tools are meant to support.

CONCLUSION

From the analysis of the surveys and case studies, six factors are identified as critical for IT departments to transform to a service orientation:

- Support from senior management is essential to provide resources and enforce compliance to new processes. As in most initiatives involving organizational change and technology, the key is effective engagement of personnel affected coupled with support from senior management. Senior management does not need an in-depth understanding of ITIL but must provide support in terms of resources and authority to enforce new policies.
- The threat or opportunity to outsource IT service management needs to be considered.
- Process silos need to be overcome by integration to provide end-to-end service. Each process has critical dependencies with other processes.
- Business staff and customers need to be identified as stakeholders and involved in process redesign. Effective use of one-on-one communication with key stakeholders, backed up with newsletters and workshops helps to promote ITIL to the wider group of stakeholders.
- The culture of IT staff needs to change in terms of focus from technology to service excellence by understanding how IT contributes value to the business and customers.
- Processes should be redesigned prior to investing in tools.

IT Service Managers need to consider these factors when implementing IT service improvements. If IT service providers fail to provide a reliable customer-centric focus, it will impact on their organizations by limiting the potential for IT to add value.

The ITIL phenomenon has radically changed the discipline of IT service management. Emerging frameworks such as CMMI-SVC and ISO/IEC 20000 will extend the impact, and in the future, it is likely that providers will be selected based on capability assessments or certification. Future research will analyse certification records to perform an international comparison of the up-take rate of the international standard. We also intend to track and report on the release and uptake of CMMI-SVC.

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