Transforming IT Service Management – the ITIL Impact

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Abstract

Effective information technology service provision is key to the success of organisations. This paper presents results from five Australian organisations that implemented the Information Technology Infrastructure Library (ITIL). As a consequence, all these organisations have transformed their IT service management to provide significant benefits to their organisations, such as more rigorous control of testing and system changes, more predictable infrastructure, improved consultation with IT groups within the organisation, reduced server faults, seamless end-to-end service, documented and consistent IT service management processes across the organisation, and consistent logging of incidents. Key success factors for ITIL implementation include effective engagement of the personnel affected, support from senior management and communication of results.

Keywords

IT Service Management, IT Infrastructure Library, ITIL, IT Governance.

INTRODUCTION

IT service managers are responsible for an increasingly diverse and crucial infrastructure. They are under pressure to reduce costs while helping the organisation generate revenue, and to provide fast, cost effective service to their customers. Over the last few years, many Australian organisations have adopted the IT infrastructure library (ITIL) to provide effective management and control of IT service delivery and support. The ITIL best practice framework enables managers to document, audit, and improve their IT service management processes. However, to date, there has been limited academic research about ITIL adoption (Hochstein et al. 2005).

Through an investigation and analysis of ITIL adoption at five large organisations, this research aims to explore the impact of ITIL adoption, sequence of selection of ITIL processes, strategies applied to manage organisation change, role and use of supporting tools and technologies, and critical success factors and benefits of ITIL adoption.

The following three research questions represent the focus of this paper:
RQ1: What is the impact of ITIL adoption?
RQ2: Do organisations follow a consistent pattern when implementing ITIL processes?
RQ3: What are the challenges to successful ITIL adoption?

This research is very important because many organisations are investing heavily in training, tools (both hardware and software), and consultants as part of ITIL adoption. Although potential benefits in terms of decreased system downtime, improved security, and higher customer satisfaction are promised, there has been minimal rigorous academic research into the possible impact such as changes to IT strategies, organisation structures, and roles and responsibilities of IT service management staff, other IT groups, clients and senior management.

This paper is organised as follows. The background section reviews academic and practitioner literature with respect to IT governance in general, and ITIL in particular. The case study method used is described. In the findings section, the information gathered from each organisation is summarised to describe individual approaches to ITIL implementation. The discussion then links the findings back to the literature. The conclusion includes a discussion of the limitations of this research and provides recommendations and directions for further research. Throughout this paper, the term IT is used for information technology and is synonymous with the term ICT - information communications and technology.

BACKGROUND OF IT GOVERNANCE AND SERVICE MANAGEMENT

Recent corporate scandals such as HIH and OneTel in Australia, and Enron and Worldcom in the United States have raised the importance of corporate governance and prompted governments to provide guidelines to reduce risks to shareholders, employees and consumers (Holloway 2004). In the United States, the Sarbannes-Oxley Act 2002 introduced stringent corporate governance requirements. Organisations around the world are following the lead of the US and focussing on corporate governance (Peterson 2003). In 2003, Standards Australia released *AS 8000 Good Governance Principles* becoming the first standards body in the world to publish national guidelines on corporate governance. Organisations are establishing IT governance to ensure that IT is aligned with the objectives of the organisation (Sledgianowski et al. 2006). IT governance includes leadership, organisational structures and processes to ensure that the organisation's IT sustains and extends the organisation's strategy (Sallé 2004). Increasingly, IT governance is considered an integral part of corporate governance.

As shown in figure 1, there are various frameworks developed to assist with the definition, assessment, reporting on and improvement of internal control of IT in organisations (Ridley et al. 2004). Although this paper focuses primarily on ITIL, many organisations concurrently use frameworks such as Control objectives for information and related Technologies (CobiT), Capability Maturity Model Integration (CMMI) and ISO 9001 (Quality Management System). Other relevant frameworks gaining awareness are Six Sigma, Balanced Scorecard, ISO 17799 (IT security techniques), PMBOK (Project Management Body of Knowledge) and Prince 2.
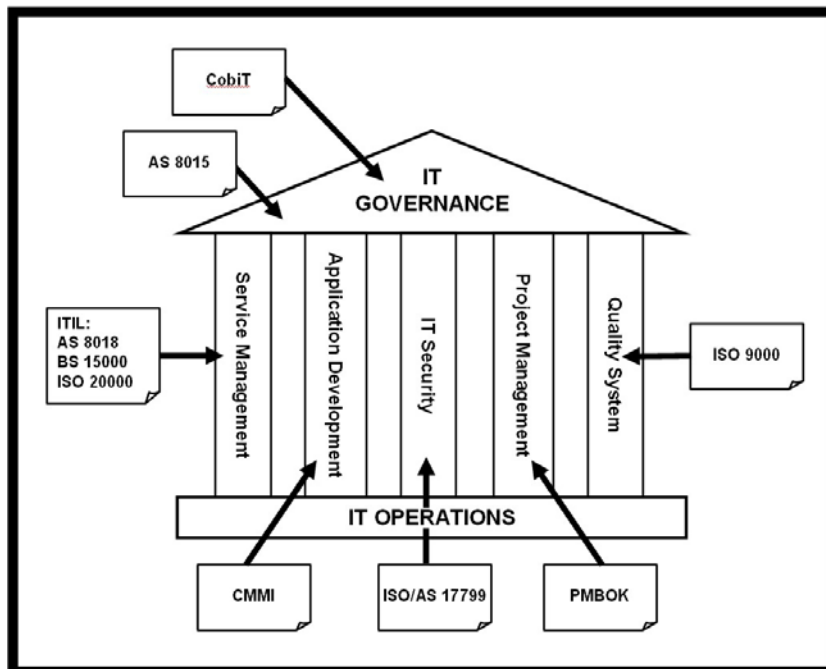

Figure 1 Frameworks relating to IT functions (Adapted from Ratcliffe 2004).

IT Service Management

In recent years, IT Service quality has drawn the interest of IS researchers (such as Hochstein et al. 2005, Pitt et al. 1998, Niessink and van Vliet 1998, Potgieter et al. 2005, Watson et al. 1998, Praeg and Schnabel 2006). A number of IS researchers have used the SERVQUAL instrument to measure service quality. SERVQUAL was developed from the services marketing discipline by Parasuraman et al. (1985) and relates to three underlying themes related to service quality: difficulty for consumers to evaluate the quality of services compared to the quality of goods; perceptions relating to service quality result from a comparison of consumer expectations with actual service performance; and quality evaluations involve evaluating the *process* of service delivery, not solely the *outcome* of the service.

The 'Gaps' model developed by Parasuraman et al. (1985) was used by Pitt et al. (1998) to focus on the difference between users' expectations and perceptions of service provided by the IS department. They contend that the shortfall is caused by four gaps: IS managers do not understand what the users want; IS managers know what the users want, but are unable to set service quality standards; service standards are set, but the IS department cannot meet them; and the service delivered does not live up to the promises of the IS department.

Recently, Praeg and Schnabel (2006) suggest an IT-service performance management framework consisting of four levels: strategic, business process, IT-service, and tools. They explain that it is important for IT service managers to focus on supporting the business processes as well as the strategic goals of the organisation. Earlier work by Watson et al. (1998) came to a similar conclusion: IS service quality is more than an operational issue and needs to be actioned at strategic and tactical levels. In the two case studies reported by Watson et al. (1998), IT service quality improvements were not lasting or institutionalised and they called for further research 'to determine how service quality can be made an enduring aspect of IS' (p.74).

IT Infrastructure Library (ITIL)

In response to the serious economic downtown in the late 1980s, the Central Computer and Telecommunications Agency (CCTA) in the United Kingdom developed the IT Infrastructure Library framework to reduce costs and to better manage IT service delivery (Sallé 2004). The ITIL framework is now administrated by the Office of Government Commerce (OGC) and its best-practice processes are supported by the British Standards Institute's BS 15000 Standard for IT Service Management. In July 2004, the Australian Standard AS 8018 ICT service management, based on the BS 15000 was released. In December 2005, ISO member countries agreed to adopt ISO/IEC 20000 based on BS 15000.

As shown in Table 1, the core of ITIL comprises five service delivery processes and five service support processes and one service support function (service desk). Service support processes apply to the operational level of the organisation whereas the service delivery processes are tactical in nature.

Table 1 Description of core ITIL components (adapted from OGC 2006)

Service Delivery – Tactical Level	
Service Level Management (SLM)	Negotiates service level agreements (SLA) and ensures that these are met. Responsible for ensuring that all IT service management processes, operational level agreements, and underpinning contracts, are appropriate for the agreed service level targets.
Financial Management	Manages an IT service provider's budgeting, accounting and charging requirements.
Capacity Management	Ensures that the capacity of IT services and the IT infrastructure is able to deliver agreed service level targets in a cost effective and timely manner.
IT Service Continuity Management (ITSCM)	Manages risks that could seriously impact IT services. ITSCM ensures that the IT service provider can always provide minimum agreed service levels, by reducing the risk to an acceptable level and planning for the recovery of IT services.
Availability Management	Defines, analyses, plans, measures and improves all aspects of the availability of IT services. Ensuring that all IT infrastructure, processes, tools, roles appropriate for the agreed service level targets for availability.
Service Support – Operational Level	
Service Desk	The single point of contact between the service provider and the users. Manages incidents and service requests, and also handles communication with the users.
Incident Management	Manages the lifecycle of all incidents. The primary objective is to return the IT service to customers as quickly as possible.
Problem Management	Manages the lifecycle of all problems. The primary objectives are to prevent incidents from happening, and to minimise the impact of incidents that cannot be prevented.
Change Management	Controls the lifecycle of all changes. The objective is to enable beneficial changes to be made with minimum disruption to IT services.
Release Management	A collection of hardware, software, documentation, processes or other components required to implement approved changes to IT services.
Configuration Management	Responsible for maintaining information about configuration items required to deliver an IT service, including their relationships.

ITIL processes can be linked to the organisation's strategy, internal business environment and IT strategy to contribute to business service excellence. At the strategic level, the organisation's mission feeds into the vision, and together they set the strategic goals and key result areas as detailed in the strategic plan. The IT strategy needs to be aligned with the corporate strategic plan through effective performance management and reporting. At the tactical level, the business objectives and core business activities, derived from the strategic plan, are used to determine the key performance indicators and are detailed in the business plan, typically with a 12 month timeframe. The IT business plan should include service management supported by the service and product catalogue and service level agreements. At the operational level, IT infrastructure management includes operational management, operational level agreements, event and fault management, and element management. These four operational components ensure activities and processes support the business requirements and provide performance metrics to feed back to the tactical and strategic levels of management.

Adoption of ITIL

ITIL has a strong following in Europe, especially in the government sector, and adoption is growing in North America and other countries (Barton 2004). ITIL is considered to complement the IT governance framework CobiT and recent surveys and case studies have reported an upsurge in awareness and adoption of both ITIL and CobiT (Nerney 2003, Hochstein et al. 2005, Casson 2005, Niessink and van Vliet 1998, Violino 2005, Schuller and Wheller 2006). Australia is at the forefront of ITIL adoption, possibly due to the strong links between Australian and the UK: 'ITIL in Australia has seen rapid adoption through consultancy and education programs since the mid 1990's' (ITIL Survival).

METHOD

To answer the research questions, a qualitative approach was taken using case studies with structured questions based on the instrument developed by Hochstein et al. 'to identify insights which can be logically followed and transferred to other organisations' (2005). After pre-testing the instrument, structured interviews were conducted with the managers of ITIL implementation projects in five large public-funded organisations. The interviews were conducted during March and April 2006. The organisations were selected on the basis of their response to a survey which was conducted at the IT Service Management Forum (itSMF) national conference in August 2005 (author reference removed for blind review). These five case studies complement the survey data and enable both a broad view of the phenomenon as a whole and a richer, more detailed picture of a few organisations (Groves et al. 2000). The interviews were recorded and transcribed, checked by the researchers and confirmed by the interviewees as a valid record of the interviews. The completed survey forms provided background information prior to each interview and supplemented the interview data.

FINDINGS

In this section, the salient points from the interviews of the five organisations are presented and illustrated with quotations from the managers interviewed. Due to the commercial sensitivity of the information and comments, the actual names of the organisations cannot be disclosed. The five cases are referred to as Case A to E with the interviewees referred to as Manager A to E and the corresponding organisations as Organisation A to E.

Case A

Organisation A provides IT services to government agencies and commercial organisations. ITIL implementation commenced in mid 2002 after a spate of less than acceptable service delivery outcomes. Although organisation A had been certified to ISO 9000 for many years, senior management recognised the need to be aligned with an IT service industry reference framework as well as the generic ISO 9000. Rather than attend ITIL foundation training courses, the managers decided to use a self study approach and successfully attempted the ITIL Foundations examination, prior to this core group undertaking the ITIL Manager's certificate program. Later, consultants were engaged to conduct the ITIL Foundations certificate course for IT staff. These training sessions brought together staff from different sections and provided serendipitous benefits with the opportunity for staff to meet and network among colleagues from various departments. Consequently, Manager A does not advocate self-study or online training in the future.

As well as the preliminary training, Organisation A conducted a series of workshops as part of the awareness phase of the project. During the workshops, each group identified potential benefits from ITIL adoption. Later, when challenges became evident, the project manager was able to remind staff of the potential benefits they had identified in the workshops. The workshops effectively helped achieve 'buy-in' from stakeholders.

Incident, problem and change management were the first ITIL processes implemented and the ITIL publications were heavily relied upon to provide consistency across the organisation. As far as tool support, the existing software implemented for the help desk system was used during the initial 12 – 24 months of the ITIL alignment program. Subsequently, an ITSM toolset refresh project, including interfaces with SAP to provide financial and asset information was undertaken. However, despite the impact of redefined processes and installation of a new tool set, Manager A firmly believes IT Service Management is all about people, not technology or processes. Staff were not given any allowance for adjusting to the new processes while doing their regular tasks: Question: 'You want me to do my job **and** this stuff?'; Answer: 'Your job **is** this stuff' – to record, monitor and continually improve. During the implementation, staff were encouraged to question the value of their current activities. This critical appraisal led to 'some protectionism kind of behaviour' but generally the staff accepted that the ITIL approach was superior to their current processes and saw the value of the whole organisation adopting a consistent approach.

As well as the three initial processes, Organisation A has implemented service level management, configuration management, and part of financial management. Work has commenced on service continuity management, and capacity and availability management are being revised. Service level management, change management and

configuration management are now tightly integrated and enable configuration items to be queried to identify how a change to a single item of hardware or software would impact on services and customers. Previously, Organisation A relied on individuals and informal practices and processes; now service management is consolidated and corporate-based, leading to business process improvement and enhanced maturity across the whole organisation.

Although the organisation has a strong project mindset, they believe ITIL is best done as 'business as usual', not as a project. Manager A sees ITIL as a path for continuous improvement: 'The ITIL alignment and improvement never finishes!' Whilst business cases had been presented for components of the investment in ITIL – such as training, Manager A does not consider capital budgeting methods such as return on investment are feasible for this type of initiative. "It would be like asking you to quantify the ROI of your General Ledger"

The wall of Manager A's office is papered with impressive looking graphs depicting performance measures and trends such as volumes of changes, service calls, and incidents; time to respond; average time to fix incidents; cycle times for changes; lead times for changes; and service availability. Since implementing ITIL, Manager A has noticed a change in the strategic focus of the IT group. Rather than delivering IT *products*, the new approach is focussed on IT *service* management: IT is now seen as a strategic enabler, rather than a cost centre.

Case B

Organisation B is a university and the IT department was facing challenges common to many organisations today: a requirement for agility and flexibility, the expectation to implement emerging technology, and a shrinking maintenance window. The organisation had expanded geographically as a result of its strategic focus to move from being a niche player to a mainstream player, and had 'outgrown the ad-hoc world' inhabited by 'distributed IT fiefdoms'. The trigger for the adoption was senior management's expectation that the industry was formalising processes, coupled with their awareness that ITIL was a suitable framework to standardise their IT service management processes.

Prior to the ITIL project in Organisation B, there were 'little islands of expertise and islands of practice with little connections or standardisation', and multiple help desks. Many documented processes existed throughout the silos of service management, but used different terms, names, labels and were at different levels of maturity.

After the business case for implementing the ITIL change management process was approved by senior management, consultants were engaged to provide advice and produce a draft handbook. All new processes were strongly aligned with the ITIL publications and the 'implementation was as off-the-shelf, vanilla-flavoured as possible.' Training was also provided by the consultants. Almost everyone in IT service and the senior IT managers attended the ITIL Foundations course. This was followed by awareness campaigns including newsletter articles, workshops and briefings at team meetings. A simple Lotus Notes forms application was developed and successfully used for workflow and electronic signoff.

Manager B stressed the importance of focussing on the affected staff: 'Understanding and working the audience was far more important than other things, like a fancy electronic tool to register incidents or a beautiful dust-collecting process handbook. Engaging the audience, it is all about the audience'. Senior managers were encouraged to be open with staff and build a sense of trust about the additional work required.

The critical success factor for change management was to eliminate surprises, especially at the service desk on Monday mornings. It was critical to have 'consultation by design rather than consultation by accident'. ITIL promotes the concept of change advisory boards (CABs) and to succeed it was important that the CABs were 'a comfortable place'. Since ITIL change management implementation, it is noticeable that there are less major changes and far more registered standard changes. During peak processing times, a change freeze policy was implemented necessitating the sign-off of emergency changes by senior management. There has been an increase in the rigour of evaluating, planning and recording changes. The intangible benefits are well recognised in terms of a more predictable infrastructure and better consultation within various IT groups. The organisation is better able to cope with the environment which is characterised by large peak workloads with short lead times.

Case C

Since the year 2000, Organisation C, a large government department, had experienced increased competition in its market, and the pressure to become 'more lean and mean' had led to 'rethinking up in the stratosphere'. The IT department had undergone rapid growth with the number of servers proliferating from 10 to 400, resulting in maintenance issues. At the senior-most level, outsourcing was discussed but considered impossible to organise as the IT services and processes were not consistently provided or documented.

In 2001, the Enterprise Architect at Organisation C identified ITIL as a suitable framework to improve IT service. A business case was presented and endorsed by the CIO. External consultants were engaged to undertake an initial review.

Following the review, Organisation C decided to commence ITIL implementation with three processes: financial management, service level management and configuration management. The original plan intended that three additional processes would be implemented each year, but this did not eventuate due to delays in selecting and implementing a tool for configuration management. Previously, islands of quality processes existed, for example, various sections compiled their financial budgets differently. Organisation C found the key to successful ITIL implementation was encouraging staff to document the processes in actual use. As a result, at times, staff realised that what they actually did was a 'heap of hogwash' and were motivated to improve their processes in line with ITIL. Many of the 'so-called quality processes' which had been previously documented but not practiced were improved.

One of the major challenges faced by Organisation C involved improving communication and coordination between the various sections to provide a seamless end-to-end service: 'the customer was falling through the gaps in great big hole between two processes'. Although the ITIL implementation did not pose a problem for staff in terms of processes within the team, it did result in extra work for managers to ensure the various teams could 'hook together' and understand how the process flowed through to ensure data integrity, recordability, trackability, and measurement of server activity to enable it to be related back to the service level agreements.

Manager C believes the organisation was blessed with a strong culture at the 'grass roots level' which genuinely wanted to improve customer service and desiring improvement in delivery of services. This has overcome the lack of resources which resulted from luke-warm management support. Resources assisting the implementation and aiding understanding ITIL processes included: Help Desk system (HEAT), Asset Register, Standard Operating Environment (SOE) for desktops and Servers, and HP Openview for configuration management and documentation provided by the consultant firm 'The Art of Service'. . A handful of IT service managers from various organisations implementing ITIL began meeting on a regular basis. Known as *it*SMUG (IT Service Management User Group), the participants provided support and advice to each other by swapping war stories and 'having a cry and hug'!

Prior to the ITIL implementation, Organisation C found it was impossible to get all SLAs signed off each year by managers. The ITIL SLM manager used his personal network to influence the other managers. He took a practical approach, changed the SLA format to suit the style of the managers and ensured the appropriate level of detail was available where needed. As a result, for the fiscal year 2004, all SLAs were signed by June 30th. Manager C cited two further measures of success: there had been no server faults for the nine months prior to the interview, and IT service management is now included in staff performance review criteria.

Case D

Organisation D is a large government department. Over the last six years, Organisation D expanded substantially and as IT was not under strong central control, multiple IT groups across the organisation developed individual processes. It became clear that these 'feral groups' represented a risk to the organisation: processes needed to be documented and used consistently across the entire organisation. ITIL implementation commenced in mid 2001 with change management the first process adopted. A business case was not presented: the ITIL implementation was not seen as a project but a series of processes. At the time of the interview, Manager D estimated that implementation of the change management process was 95 percent complete, and release management and incident management 60 percent. Work had also commenced on problem management. Overall it was estimated that service delivery was 10-15 percent complete.

During the course of the ITIL implementation, significant waves of organisation restructure occurred within the IT department. Firstly, IT operations under the control of the CIO was broken into three groups: service management; IT infrastructure and communications; and application support. The second stage saw the creation of an infrastructure communications technology branch separate from the CIO's department. In the third stage, the operations side was also separated from the CIO's department.

Manager D explained that the ITIL adoption has been hindered by delays in purchasing a Configuration Management Database (CMDB): 'that's our biggest problem'. After calling for tenders, various proposals were received from vendors. The vendors' presentations proved to be an effective means to increase awareness of senior managers about ITIL. However, it became clear that some of the prospective vendors did not understand the tender specification. Consequently, the tender documents are under review and the tender process will be repeated. Meanwhile, operations staff are populating a temporary database as a hardware asset register while SMS (desktops) and MOM (servers) collect base information for software asset registers. When the CMDB is installed, these registers will be consolidated. Most of the clients have accepted the use of Quetzel software to log all jobs, providing useful data for performance management and trend analysis.

Organisation D engaged consultants to provide the ITIL Foundations course to all staff involved in IT service management. A major effort of the two full-time staff spearheading the ITIL implementation is in developing policies to support and enforce the new processes. Often, processes are rewritten to better refine the policies. It

is vital that ITIL is supported by senior management to ensure the policies and processes are accepted at the operational level. Senior management endorsed the terms of reference of a change advisory board (CAB). The CAB has proved to be successful with fortnightly attendance rising from 3-4 to 20-25 staff. Manager D believes effective communication is essential and aims to meet individually with all 55 client managers to explain ITIL and how it impacts in terms of increased testing in the release policy. Manager D expects all new hires and contractors in the IT service area to hold ITIL Foundations certification.

Case E

Organisation E, a university, became aware in 2002 that other large organisations were addressing IT governance. Organisation E subscribes to a federated model for their IT structure comprising 35 decentralised IT areas. Although the areas all work well together, ITIL was seen to offer the potential to provide a common language to help manage IT and to improve the services provided in terms of efficiency and accountability. Prior to ITIL, there was 'the odd policy document here and there', and a lack of consistency and formalisation as processes were not formally defined or documented in some sections.

Consultants were engaged to provide ITIL Foundations training to all IT service staff in 2003. A formal project plan was developed, and a business case successfully presented to senior management. Senior management support has been evident since the project was initiated. Implementation of the incident management process was commenced in 2004, followed by problem management and more recently change management. The ITIL project manager visited all work areas and devised process maps, common standards, and publicised ITIL. As well as through extensive training and workshops, buy-in was achieved by designating processes to IT service managers to champion.

Manager E finds the ITIL publications invaluable. The *it*SMUG is administered by Organisation E: 'they don't pretend things are working when they are not … very open, honest communication'. Organisation E continues to use their existing help desk tool (Quantum) but would prefer a more ITIL-friendly tool to log calls and support configuration management. All incidents are now logged, and almost everyone is using the same logging tool. Criticality is determined logically by service desk staff rather than being based on the client's perception.

One of the challenges faced by Organisation E was to gain support from the technical staff. There was some resistance to adhering to the new documentation and communication processes. This situation was resolved by constant feedback to the technical staff from the ITIL process champions, and by maintaining a light-hearted approach in presentations and workshops. A related challenge involved changing the focus from crisis management and work-arounds to consideration of the 'real problems' as defined by ITIL, resolving the important underlying problems. Manager E also mentioned the challenge in attempting to measure return on investment. The costs can be quantified, but it is very difficult to actually measure real benefits.

Organisation E introduced a variation to the standard CAB format by implementing a two-tier CAB. The first tier considers the technical ramifications of the change prior to submission to the second tier CAB for approval. Manager E believes the support from senior management is crucial for initiation and ongoing implementation of ITIL. As the IT managers are very busy, it is preferable to have an ITIL project manager dedicated to the task. It is important to encourage everyone in the organisation to use the common ITIL language, to have the same priorities across the organisation, and standard processes for service. Manager E is now interested in service-based statistics (e.g. application availability) rather than machine based (e.g. server downtime). The implementation of ITIL has enabled the IT service to be driven by client needs rather than focussing on the technology.

DISCUSSION

In answering the first research question concerning the impact of ITIL, the five organisations examined in this research have been using ITIL for more than three years and are convinced it has provided a positive impact. The benefits realised include improved focus on IT service management, more rigorous control of testing and system changes, more predictable infrastructure, improved consultation with IT groups within the organisation, smoother negotiation of SLAs, reduced server faults, seamless end-to-end service, documented and consistent IT service management processes across the organisation, effective CAB, and consistent logging of incidents.

The six 'successful initiatives' identified by Hochstein et al.'s study of six German firms (2005) were also evident in the cases presented here: start with processes likely to deliver 'quick wins'; guarantee sustainability of success by continuous improvement; create acceptance and understanding though the use of marketing campaigns; request support from management to exert pressure to change; include broad based training and personnel development; and form teams to integrate new processes into service orientation.

The second research question considers the sequence of adoption of ITIL processes. It is evident from the comparison of the five cases as summarised in table 2 that substantial variation exists in many aspects of their ITIL implementations. As far as the sequence of processes implemented, change management was consistently treated as a high priority. ITIL is not a prescriptive framework, the sequence should be dictated by the specific business strategy and benefits sought and tailored to suit each organisation's needs.

Table.2 Summary of key aspects of five organisations

Factor	Case A	Case B	Case C	Case D	Case E
# of Screens	600+	~5,000	12,500	35,000	11,000
ITIL start date	Mid 2002	Early 2003	2001	Mid 2001	2003
Initial process implemented	Incident, problem, change mgmt	Change mgmt	Financial, service level, change, configuration mgmt	Change mgmt	Incident mgmt
Subsequent ITIL processes	Service level, configuration, availability mgmt	Service desk, Problem, configuration mgmt	Incident, problem mgmt	Release, incident, problem mgmt	Problem, change mgmt
Business case	Unsure	Yes	Yes	No	Yes
Role of consultants	Training	Training, initial advice, draft handbook	Training, initial review, Manuals	Training	Training
Initial IT structure	Centralised	Multiple helpdesks	Decentralised	Decentralised	Federated
Restructure	Nil	Nil	Nil	Major	Minor

The third and final research question considers the challenges faced by organisations in their ITIL adoption. Many reported that they have not made as much progress 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. Many of the managers mentioned the difficulty in quantifying benefits, supporting the view of Praeg and Schnabel: 'The financial view is quite important but much too limited for IT service performance management' (2006 p.2).

To provide a more detailed analysis of the cases, the four-level IT-service performance management framework developed by Praeg and Schnabel (2006) is used. 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

All five organisations mentioned 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 organisation. In three cases (B, C, E), a business case was presented, however there was a tendency by some organisations to view ITIL as 'business as usual' rather than as a project as ITIL is an ongoing process improvement program. 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 and Jordan 2006).

Business process level

The importance of IT fulfilling the business needs of the client is recognised in all cases, either through effective SLAs, or workshops with business people. The necessary links between IT and the organisation in terms of financial management and asset management has required assessment of related business processes. Organisation A recognises the need to undertake further business process reengineering (BPR), while the outcome of Organisation E's BPR program changed the structure and reporting line of the IT help desks.

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 IS department 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 to the promises made by the IT department.

IT-Service level

The major impact of ITIL was evident at the IT service level with new terminology, policies, procedures, and employee performance evaluations modified to include ITIL. Process owners were appointed to champion the development and implementation of new processes. To achieve end-to-end service, the various teams within IT needed to integrate their services. An interesting finding from the interviews was the importance of networking through informal meetings with IT service managers from other local organisations. Although itSMF provides valuable events, bulletins and conferences, the 'vendor-free' *it*SMUG provided essential peer support to help overcome challenges.

Tool level

According to Praeg and Schnabel (2006), the tool level encompasses methods and instruments. In all the organisations interviewed, the ITIL manuals were considered an essential and useful resource. A major advantage of ITIL is that it is supported by a professional certification scheme, providing a path to career development (Schuller and Wheller 2006). Organisations found the readily available ITIL Foundations course provided a consistent and detailed introduction to the core processes.

Many organisations found it a challenge to optimise their software tools. Delays were experienced in the specification, purchase and implementation of the appropriate software packages for logging incidents at the service desk, and the configuration management database. The managers interviewed suggest the best approach is not to let tool selection delay the project, rather, continue with a hybrid mix of current tools. It is better to forge ahead with a less than optimal tool set rather than delay implementation until the right tool is selected and implemented.

CONCLUSION

The case studies presented here demonstrate that implementing ITIL can transform IT service management and provide benefits to organisations such as a more predictable infrastructure from improved rigour in testing and system changes, improved consultation with IT groups within the organisation, smoother negotiation of SLAs, reduced server faults, seamless end-to-end service, documented and consistent IT service management processes across the organisation, and consistent logging of incidents. Although there is no set recipe for the correct sequence to implement the ITIL processes, an effective strategy is to initially look for quick wins. As in most initiatives involving organisational 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. 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. Business process reengineering may be also needed for effective ITIL implementation along with a cultural change for IT staff, users and customers to achieve business service excellence.

This study makes four significant contributions. First, the detailed examples of the adoption of ITIL by five large organisations provides useful information for IS managers in terms of the impact, challenges and benefits to expect. Second, it is the first Australian study to provide evidence of sustained commitment to ongoing process improvement in the service management area. Third, this research reinforces the view of Watson et al. that IT service management should be part of the IS curriculum (1998). Specifically, in light of growing adoption of ITIL and the preference of IT service managers for ITIL-certified staff, it is recommended that ITIL concepts and terminology be included in undergraduate and postgraduate IS courses. Finally, this study has contributed to the research literature on IT service management by confirming the findings from the German case studies (Hochstein et al. 2005) and supporting previous research by Praeg and Schnabel (2006), Pitt et al. (1998) and Watson et al. (1998).

It is clear that organisations such as those described in this paper are convinced of the positive impact of ITIL in transforming IT service management. Although ITIL is gaining wide recognition in industry, academic institutions are lagging in terms of research and inclusion of ITIL in curriculum. In the near future, the Australian interview protocol, based on the German case studies will be replicated in Norway, Sweden, the UK and elsewhere, providing opportunities to compare ITIL adoption across multiple nations and a wide variety of organisations.

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