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Regis University
College for Professional Studies Graduate Programs
Final Project/Thesis

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**ITIL ADOPTION IN HEALTHCARE:
A STUDY OF PROCESS IMPACT AT A NEW ENGLAND HOSPITAL**

A THESIS

SUBMITTED ON 28TH OF FEBRUARY, 2011

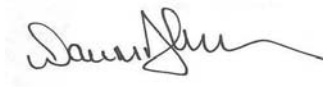
TO THE DEPARTMENT OF INFORMATION SYSTEMS

OF THE SCHOOL OF COMPUTER & INFORMATION SCIENCES

OF REGIS UNIVERSITY

IN PARTIAL FULFILLMENT OF THE REQUIREMENTS OF MASTER OF SCIENCE IN
INFORMATION TECHNOLOGY MANAGEMENT

BY

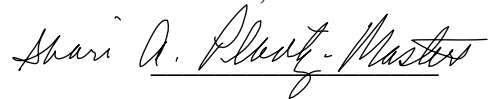


Dawn Almeida

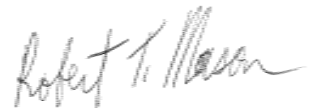
APPROVALS



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Abstract

This is a study of how adopting Information Technology Infrastructure Library (ITIL) at a New England hospital impacted service management. The New England hospital began the adoption of ITIL by changing three existing ad-hoc processes to standardized processes following ITIL best practices. Those processes were knowledge management, software management and incident management. This study shows the impact on the quality of IT services and IT/business alignment, and the barriers faced during the adoption project. Using a qualitative methodology through action research, the study found the adoption of ITIL had a positive impact on service management. There is limited academic research regarding adoption of Information Technology Infrastructure Library by healthcare organizations, therefore this study has important implications for healthcare organizations, in general.

Acknowledgements

While undertaking this project I received support from many people in one way or another, without whose support, this thesis would not have been completed in its present form. It is my pleasure to take this opportunity to give thanks. First, to my family, I would like to express my deepest appreciation for your unwavering support and encouragement over the years. It has been a long road and I could not have done it without you. I wish to acknowledge my advisor on this project Dolores Bilo and Professor Shari Plantz-Masters at Regis University. They have been an invaluable resource throughout my work on this project. I also wish to acknowledge my employer, the New England hospital, for supplying me with the inspiration and finances to extend my education.

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Chapter 1 – Introduction

This thesis is a study of how adopting Information Technology Infrastructure Library (ITIL) at a New England hospital will impact service management by implementing standardized processes and reducing ad-hoc processes. All around the world, organizations are beginning to see the importance of process standards such as those offered by the Information Technology Infrastructure Library (ITIL) (Cater-Steel, Tan, & Toleman, 2009, p.321). However, even as ITIL awareness and adoption continue to grow, “to date there has been limited academic research undertaken into ITIL implementation” (Cater-Steel, Tan, & Toleman, 2009, p.322). The lack of ITIL implementation research is further aggravated by the lack of industry specific ITIL implementation research. Organizations such as the New England hospital in this study are left with little or no real world examples of healthcare organizations that have adopted ITIL before them.

According to OGC (Office of Government Commerce) (2009b), developer of ITIL, ITIL is a framework that outlines best practices for Information Technology Service Management (ITSM) which allows organizations to improve alignment between Information Technology (IT) services and business needs. ITIL also allows IT departments to improve the quality of IT services delivered (OGC, 2009b). In today’s business environment, most businesses have some element of technology and can benefit from ITIL; healthcare is no exception to this. In the business world of healthcare, satisfying corporate aims and business needs is critical in order to remain competitive.

The New England (N.E.) hospital in this study is one of the many healthcare organizations looking at process improvement to assist them in remaining competitive. The IT department of this New England hospital spent years automating the organization it serves and

priding itself on implementing best-of-breed systems. The same could not be said about the IT department itself which was struggling with inefficient ad-hoc processes in three key service areas; knowledge management, software management and incident management. This is a situation that many healthcare IT departments are experiencing, frequently reporting the same three key areas of pain points, as they race to implement new clinical technology, such as electronic physician order entry, remote access to patient information, and electronic medical records. According to Nunn (2007), the ideas of performance improvement and process management have reached the heart of healthcare.

One way to improve quality of service is to improve the value and speed of the services already being delivered. Existing service improvement can be achieved by eliminating ad-hoc processes because processes that do not conform to a framework or standardized format are inefficient. Garretson (2007) points this out in a case study of Johnson & Johnson that, “ITIL helps an IT department improve its quality of service, by providing faster problem resolution than the patchwork of ad hoc methods many IT departments use” (p.1).

The New England hospital chose to adopt ITIL with the intent that ITIL would assist in reducing ad-hoc processes and implementing standardized ones. Ludwick and Doucette (2009) find that ITIL adoption brought “less business freedom to make ad-hoc updates” and in return gave the organization a stronger understanding of inter-application dependencies and better quality assurance.

Scope of the Study

The purpose of this study is to understand how adopting ITIL standardized processes at a New England hospital has impacted service management as compared to maintaining current ad-hoc processes.

The following questions will be analyzed in this study:

1. How has the quality of IT services been impacted by changing from ad-hoc processes to standardized ones?
2. In what ways did standardized processes better align IT services with the needs of the organization?
3. What barriers do organizations face when adopting ITIL standard processes?

Significance

This study provides insights and conclusions on how adopting ITIL standardized processes will impact healthcare organizations' service management as compared to maintaining its current ad-hoc processes.

This is information that currently exists in very limited quantities. This study provides a contribution of a real world, industry-specific example of a healthcare organization that adopted ITIL for improved service management, thereby growing the body of knowledge, and assisting future researchers.

Chapter 2 – Review of Literature and Research

Research has uncovered only two healthcare organizations that have documented their ITIL adoption, Hospital Sao Sebastiao in Portugal and the Canadian province of Alberta. Lapao, Rebude, Silva and Gomes (2009) conducted an ITIL assessment to identify weaknesses in ITSM; they determined that ITSM is being carried out inefficiently at Hospital Sao Sebastiao. They explained that most hospital information system departments in Portugal lack skilled personnel, project management, balanced IT budget allocation, as well as IT strategy and leadership. IT Governance inefficiency was found to be the primary barrier to ITSM. Hospital Sao Sebastiao was unable to move past the initial stages of ITIL adoption. Therefore impact on quality and alignment cannot be determined at this time. While the situation in the U.S. and at the New England hospital is not this severe, the initial ITIL assessment to uncover ITSM weaknesses is an excellent example for this investigation. In their ITIL assessment, Lapao, Rebude, Silva and Gomes (2009), determined that incident management at Hospital Sao Sebastiao is ad-hoc stating that it shows random approaches of which few are defined. An ad-hoc approach to incident management leaves an organization with no control over how incidents are monitored, detected, responded to or resolved. ITIL's approach to incident management provides organizations with end-to-end control of incidents. This situation is directly related to the current situation at the New England hospital, as they too are looking to remove ad-hoc process from incident management.

The Canadian province of Alberta's ITIL adoption was documented in a paper by Ludwick and Doucette (2009). While this healthcare provider is also not located in the United States, its ITIL adoption has much in common with the New England hospital. Ludwick and Doucette (2009) state, "Adopting the ITIL model was not easy because it required changes to

entrenched organizational processes.” Fitting new processes into an established culture was found to be a barrier that required extensive training of staff to ensure a base line of common knowledge. Once training was completed they found themselves faced with another barrier, time, taking many months of discussion to modify workflows.

Like the New England hospital, Alberta needed to change the way in which their software management was handled. With ITIL “organizations were no longer permitted to implement software upgrades according to their own schedule, but needed to coordinate their release” (Ludwick & Doucette, 2009, p.105) taking an approach that considers all people, processes and technology that will be impacted. The ITIL adoption by Alberta brought them “greater awareness of inter-application dependencies, better quality assurance and the confidence that clinical incidents can be avoided” leading them to better align IT services with the needs of the business.

The research has shown that non-healthcare organizations face similar issues of rapid growth and lack of standardized processes within the IT department. A study by Lowder (2009) documents ITIL adoption by a mid-sized Real Estate Investment Trust (REIT). It appears that this REIT chose to operate in much the same way as the New England hospital in this study, choosing to “keep operating the existing infrastructure as best as possible while implementing new technologies very rapidly.” (Lowder, 2009, p.12) Lowder states that the organization chose to adopt ITIL after “IT management determined that process improvement was required to improve overall IT services and IT service delivery speed.” (Lowder, 2009, p.8) This was brought to the attention of management at the REIT just as it was at the New England hospital by the fact they were unable to commit to any standard response times due to a lack of process in the environment. Both organizations wished to “rely more on automation and IT systems to

handle workflow and business management related tasks and processes,” making process redesign a high priority (Lowder, 2009, p.11).

The REIT organization, in the study by Lowder (2009), was able to make changes to process in the same three areas that are being studied by the New England hospital. Lowder states that incident management “was narrowed to only a handful of steps,” knowledge management provided quicker resolution and work-around almost instantly, and software management within change management “provides a blueprint for streamlining impact assessments” for software releases (Lowder, 2009, p.90).

The quality of the IT services delivered at the REIT organization was improved. Lower (2009) states that this improvement was “a result of implementing ITIL” which gave them “substantial improvements in overall incident response times, resolution times, quality and operational efficiency.” This in turn improved the alignment of IT services with the needs of the business by improving overall internal communication.

The most significant barrier faced by the REIT organization during the ITIL adoption was “narrowing the focus of their ITIL adoption to only those areas that truly matter and provide value to the organization” (Lower, 2009, p. 34). The volume of material presented in the ITIL reference books can be overwhelming for an organization and many choose to focus on the sections that make the most sense for their application and needs.

One expected barrier for the New England hospital adoption of ITIL was cost. Approximately one third of the New England hospital’s total budget each year is spent on IT. The research finds that the percentage of an organization’s budget that is allocated to IT is important for an organization considering ITIL adoption as it can be time consuming and expensive. Robb (2006) states in his article on ITIL implementation that “organizations

shouldn't underestimate the level of effort required to transform themselves into being more process- and service-centric."

According to Nunn (2007), "organizations have recognized that the edge between the very good and the great may be razor thin." This is something that the New England hospital has noticed and is, in part, why they have chosen to adopt ITIL. The former Director of IT stated, "Our department...must change to meet new higher level service commitments, mandated legislation and business demands...ITIL is important...to transform our IT department to a more structured, process driven team" (Director of IT, personal communication, 2006).

Chapter 3 - Methodology

Qualitative methodology through action research was used to collect and analyze the data to determine if the reduction of ad-hoc processes through ITIL adoption has impacted service management for the hospital. Action research was chosen because the researcher is an employee of the New England hospital IT department and is intimately involved in the ITIL adoption and process changes. Action research is a process of inquiry conducted by and for those taking the action. The researcher will assist in improving her own actions through the action research used in this study.

Place

The research focused on the investigation at the New England hospital. The hospital IT department provided the environment for the research. The hospital is a not-for-profit health network and has been the primary health care provider for the community for over 100 years. The hospital operates more than 30 facilities throughout the region and has nearly 300 active physicians. Services include inpatient, outpatient, primary care, emergency facilities, hospice, homecare, radiology, laboratory testing, and assisted living. The type of healthcare provider that the hospital is and their physical location are important to this research, as the available literature contains limited examples of similar organizations. The hospital is currently in the initial phases of ITIL adoption and will progress over the next few months to a partial adoption.

Participants

Participation is fundamental to action research. Participants must be willing to actively participate in the research and change process. Therefore, unobtrusive observation and unstructured interviews have been conducted with a limited number of IT staff members at the New England hospital. The researcher was also a contributing participant as the researcher is a

member of this group and directly involved in the ITIL adoption taking place. Extensive training and study have been undertaken by the researcher on the subject of ITIL, including ITIL foundations certification. The researcher is an advocate of the ITIL adoption by the New England hospital and feels that positive improvements will be seen from it. This has required the researcher to maintain democracy and not allow personal biases toward the ITIL adoption to influence the research.

Procedure

Observed participants were aware that they were being observed as they were presented with consent forms and indicated that they understood that their participation was voluntary. The data collected has only used the observation of public behavior. In addition, staff members will not be identified directly or through identifiers. Therefore, the research has not placed the participants at risk of damages as the data collected is of standard required tasks performed at the hospital.

This observation has allowed the collection of data that details the ad-hoc IT processes that currently exist in knowledge management, software management, and incident management at the hospital. This data allows for a baseline or starting point to establish in the research. Barriers that arose during the transition to standardized processes have been documented. The data also details the process changes that were implemented by the IT department in knowledge management, software management, and incident management as a result of the ITIL adoption. The scope of the investigation has been limited to these three areas as they have been identified as pain points by the New England hospital, as well as other organizations found in the research. Focusing the investigation on these three areas allowed the research to be targeted and more complete.

Unstructured face-to-face interviews were conducted with two members of IT management staff at the hospital. The interviewer used open ended questions. This allowed the conversation to remain flexible and adaptable, providing the possibility for additional information that might not be collected with a more formal, structured approach. While the interview remained informal, the focus stayed on the three process areas that were changed and management's general opinion of the changes made. Consent forms were provided to those interviewed. They were aware of the research taking place and their voluntary participation in it.

Instruments

Questions for unstructured interviews included the following:

1. What impact has the ITIL adoption had on the quality of IT services?
2. How has the reduction of ad-hoc processes impacted the department and or organization?
3. Have these changes altered the alignment between IT services and the business needs? If so, how?
4. Which of the three process that were changed will have the greatest impact and why?
5. What barriers were faced during the ITIL adoption and how were they overcome?

All materials used by the researcher during this study, including consent forms, written notes, and electronic documents were handled securely and privately. Procedures in accordance with the IRB were followed throughout the study.

Data Sources

There were three data sources used for this investigation. The first data source is documentation collected regarding the three individual ad-hoc and ITIL processes at the New

England hospital. Included are documented observations of the ad-hoc and ITIL processes, supported by flowcharts, which provide a visual diagram of the original non-standardized processes and the new standardized ITIL processes.

The second data source is information obtained through interviews with two members of the hospital's IT management and observation of IT staff. Lastly, public data was used. Included in the research are quotes documented during the interviews with IT management, during staff meetings, and personal communications from staff members of the hospital. Public data is used to provide additional insight where observations and interviews were lacking. An example where additional insight was provided is notes from IT staff meetings which reviewed the current processes to determine weaknesses.

This study focuses on a healthcare facility and includes interviews; therefore an IRB application and appropriate forms were submitted to the facility as well as Regis University.

Analyzed Data

The data was analyzed qualitatively once the action research was completed. The process data collected through observation was reviewed and the emerging themes behind the processes have been translated into a visual flow chart as well as discussed. The process analysis, information collected from the interviews, and supplemental public data was used to form conclusions.

Chapter 4 – Results

As indicated in the methodology section, qualitative methodology through action research was used for this study to understand how adopting ITIL standardized processes at a New England hospital have impacted service management as compared to maintaining current ad-hoc processes. Ad-hoc processes were removed and replaced with ITIL standardized ones in three key areas, knowledge management, software management, and incident management.

Knowledge Management

The purpose of knowledge management, according to ITIL, is to ensure that accurate knowledge is received at the right time to deliver and support required services. Knowledge management is the process of gathering, analyzing, and sharing knowledge and information with those who require it. Increased efficiency is achieved by the fact that knowledge management reduces the need to rediscover knowledge. In short, it provides fast, accurate, shared knowledge.

Ad-Hoc Knowledge Management

The current ad-hoc knowledge management process at the New England hospital was reviewed by the IT department and found to be deficient in several ways.

1. Documentation was stored in multiple locations. Segments of it were located online, in hardcopy, email, shared network drives, personal notebooks, and in the sole memory of individual staff members. This makes knowledge access and retrieval inefficient.
2. Documentation was frequently generated reactively and communicated after it was already needed. Such delays and lack of preparedness had on more than one occasion caused significant service delays.
3. Poor knowledge cataloging resulted in staff not being aware that needed documentation already exists. As a result staff would duplicate documentation causing various versions to circulate.

4. There was no formal approval process for new documentation currently in place. Documentation written by one individual and not approved by a group presented risk of error, incompleteness and incomprehensibility.
5. There was no knowledge maintenance process in place. Current knowledge is not regularly updated or reviewed for gaps and inaccuracies.

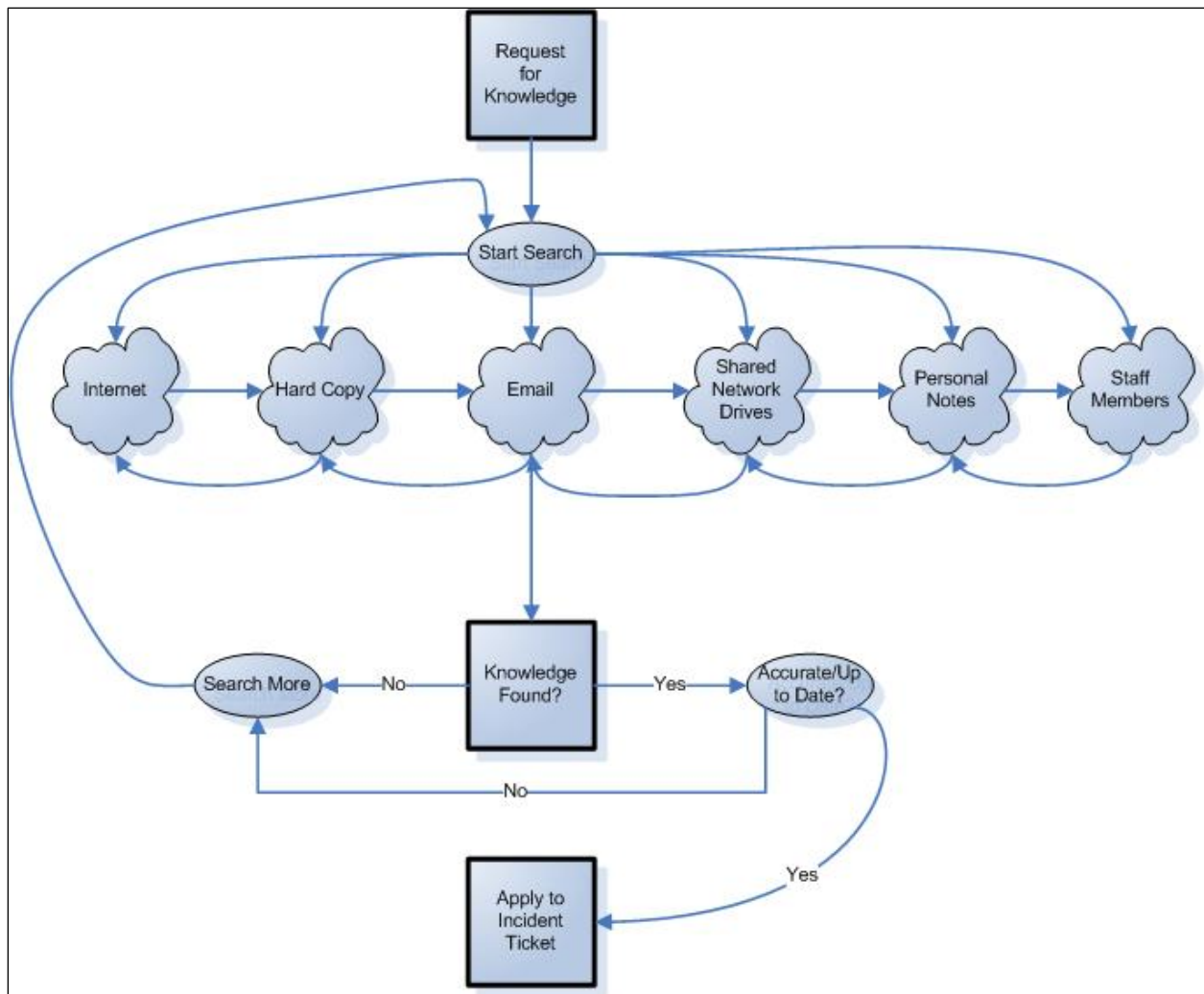


Figure 1. Ad-hoc Knowledge Management process. This figure illustrates the old knowledge management process used by the New England hospital.

ITIL Knowledge Management

The new knowledge management process at the New England hospital required a four step process prior to launch.

1. A complete review of all documentation and knowledge that was known to exist
2. All documentation to be transcribed to a standard template
3. All documentation to be consolidated in a central location or at least cataloged there
4. A group of staff members to be formed that will be responsible for predicting needed documentation, reviewing it once written, and maintaining it into the future

The result is a new knowledge management process that is streamlined and has a robust, accurate database on the back end. When a request or need for knowledge is initiated, a search takes place against the database. Once the knowledge is located it can be applied to the incident to achieve resolution. If the knowledge is not located, a request for new knowledge can be generated and once compiled will be added to the knowledge database. This process, along with the group of staff assigned to constantly maintain the knowledge, ensure that fast, reliable knowledge is available to aid in timely incident resolution.

Material from this knowledge management database is also used to create self-help articles that are posted on the service desk web portal for hospital staff to use in resolving their own incidents. Usage of these articles is tracked by IT staff to determine their success and continued need. While self-help articles are currently very limited, only detailing resolutions to

the most common incidents reported, the hospital IT staff already has plans to significantly add to them.

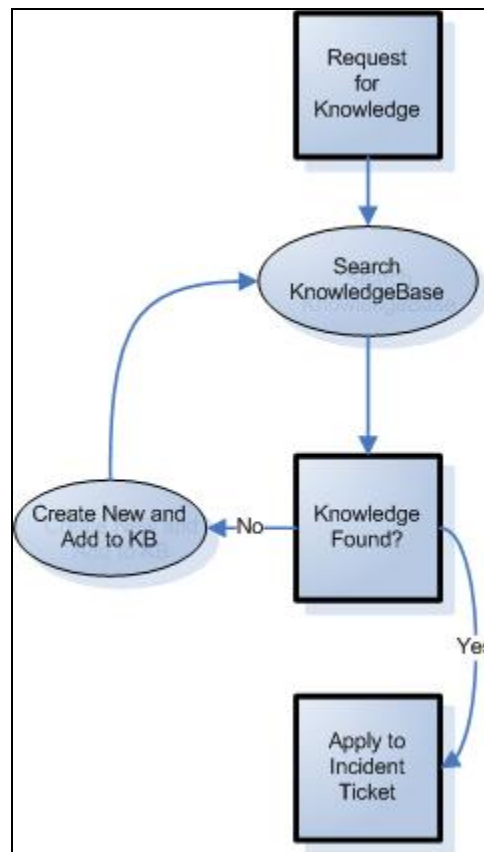


Figure 2. ITIL Knowledge Management process. This figure illustrates the new ITIL knowledge management process used by the New England hospital.

Software Management

The New England hospital chose to start with software management as a function of ITIL configuration management. This is a different approach than that of the Canadian province of Alberta listed in the literature review. Alberta chose to approach software management as a function of ITIL change management. According to ITIL, the role of configuration management is to supply a logical model of the IT infrastructure. It does this by identifying, maintaining, and verifying all configuration items owned by the organization. Configuration management also

provides support to other ITIL service management processes by providing a base. Therefore, configuration management adoption is a necessary first step.

According to one of the two members of IT management interviewed, “It is necessary to measure before you manage. We need to know what we have, the whole of what we are supporting, before we can plan to support it.” The hospital was already maintaining asset management in regards to hardware and physical infrastructure. Adding software and moving into configuration management was a logical next step for them according to ITIL practices.

ITIL configuration management is backed by a CMDB (configuration management database). This database not only houses a list of all hospital owned assets relating to IT, it also details the relationships between those assets. “If you can’t predict how a change will effect your environment, you are accepting great risk. In healthcare this is not an option anymore,” commented an interviewed member of IT management.

Ad-Hoc Software Management

The current ad-hoc software management process at the New England Hospital was reviewed by the IT department and found to be meager at best. They found no truly centralized inventory list of software and systems. No single way to know the location of all software and system installs. This left them without a true understanding of what they owned and supported.

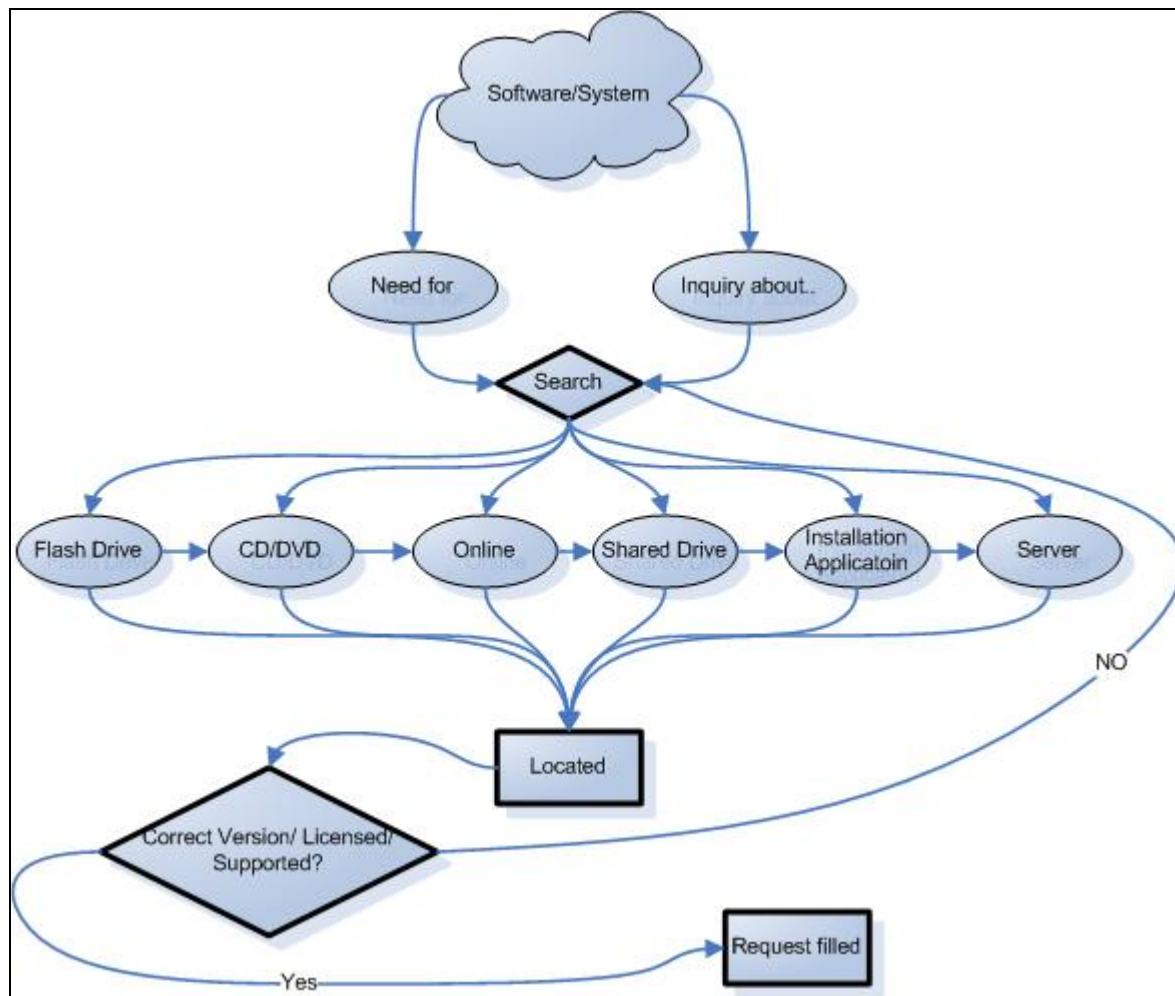


Figure 3. Ad-Hoc Software Management process. This figure illustrates the old ad-hoc software management used by the New England hospital.

ITIL Software Management

Numerous man-hours of searching and documenting took place in order to fill the configuration management database (CMDB) with what the hospital believes is close to 95% of the software and systems they own. IT staff conducting the search were in part aided by a software discovery tool that the hospital purchased specifically for this project. However, the

remainder of the discoveries required manual searching as some software was in various physical libraries and shared network drives.

The new database contains:

- A nearly complete list of software and systems owned by the hospital
- The physical or installed locations
- All available and used licenses
- Vendor support and service contract information
- In-house support information

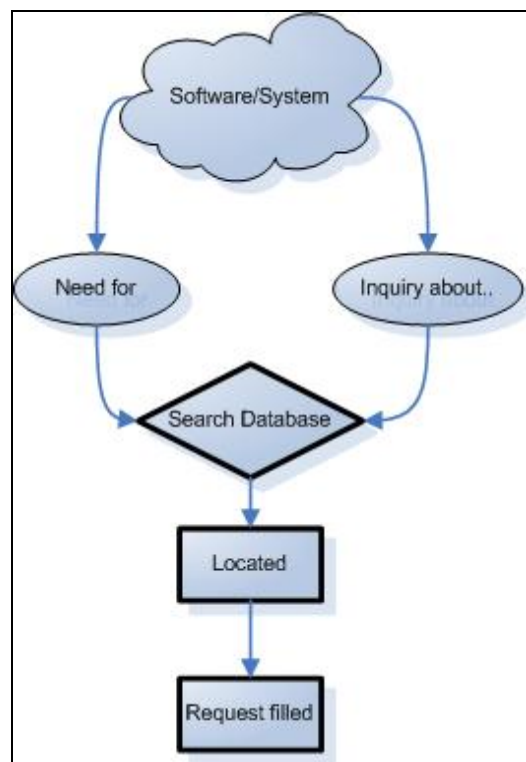


Figure 4. New ITIL Software Management process. This figure illustrates the new ITIL software management process used by the New England hospital.

Incident Management

According to ITIL, incident management restores normal IT services as quickly as possible to minimize the adverse impact on business operations. When performed efficiently, incident management allows for the timely resolution of incidents, therefore reducing business impact, and increasing effectiveness.

Ad-Hoc Incident Management

The current ad-hoc approach to incident management at the New England hospital was reviewed by the IT department and it was determined that the process left the organization with a significant lack of control over how incidents are monitored, detected, responded to, or resolved. Deficiencies were found in the following areas:

1. Not all incidents were recorded in a single location, allowing for a single searchable database.
2. There was no ownership of incidents by any single staff member or group. This leaves no one with ultimate responsibility in seeing the incident resolved.
3. Very little communication existed between end users and support staff. This resulted in the end user frequently feeling out of the loop or even forgotten.
4. The negative impact on IT service quality is high due to lack of documentation. Gaps in documentation caused poor or complete lack of reporting abilities. Without accurate reports, management is not able to properly distribute resources, determine training needs or assess current service demands.
5. Significant time was wasted by support staff as they duplicate troubleshooting already performed. This again goes back to a lack of documentation.

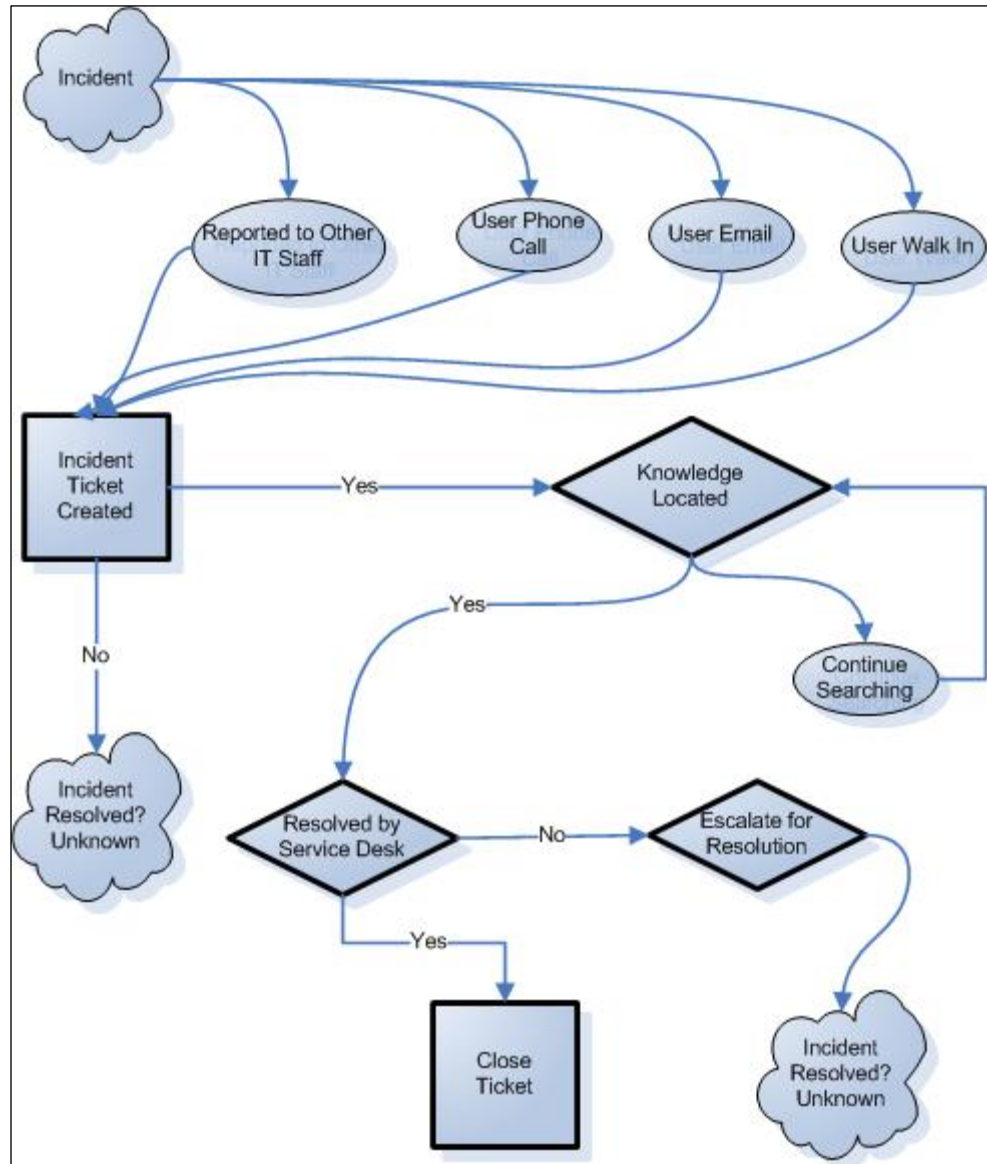


Figure 3. Ad-hoc Incident Management process. This figure illustrates the old ad-hoc incident management process used by the New England hospital.

ITIL Incident Management

Adopting ITIL incident management required first that the New England Hospital choose a new software tool. The new tool is ITIL compliant, meaning that it follows ITIL best practices and guidelines for incident management. Once the tool was installed and staff trained they could make the transition.

The new ITIL incident management process is available to all IT staff members at any location. This allows for all the entry and update of all incidents reported to be done in a timely manner. The hospital felt that it was important to continue to allow anyone contacting the Service Desk to report an incident or place a request with the flexibility of doing so in a variety of ways. The Service Desk continues to accept requests from the web portal, by phone, by email, and even in person. The incident ticket created contains contact information for the person making the request, a description of the issue being reported, the process made toward a resolution so far, as well as references to knowledgebase articles used and links to software and hardware related to the incident. The improvements made to knowledge management and software management have shown a direct impact on the amount of information that can be associated to an individual incident. The IT staff observed in this research found that the new incident management system allowed them a single point of contact regarding incidents. They were observed spending only a fraction of the time that they once had collecting information for an incident. A robust and single database allows for valuable reporting that can be run in real-time by management regardless of their location.

Communication breakdown between hospital staff and IT was resolved in two ways by incident management. First, email notifications sent to the client when a ticket is opened and closed allow for a closed loop system, assuring that the requester is provided full communication. Included in these emails is full documentation of the reported incident and the resolution. Second, is the service desk web portal that all hospital staff can access at anytime, from anywhere to open new incidents, review their closed incidents, as well as check the status of ones that remain open and unresolved.

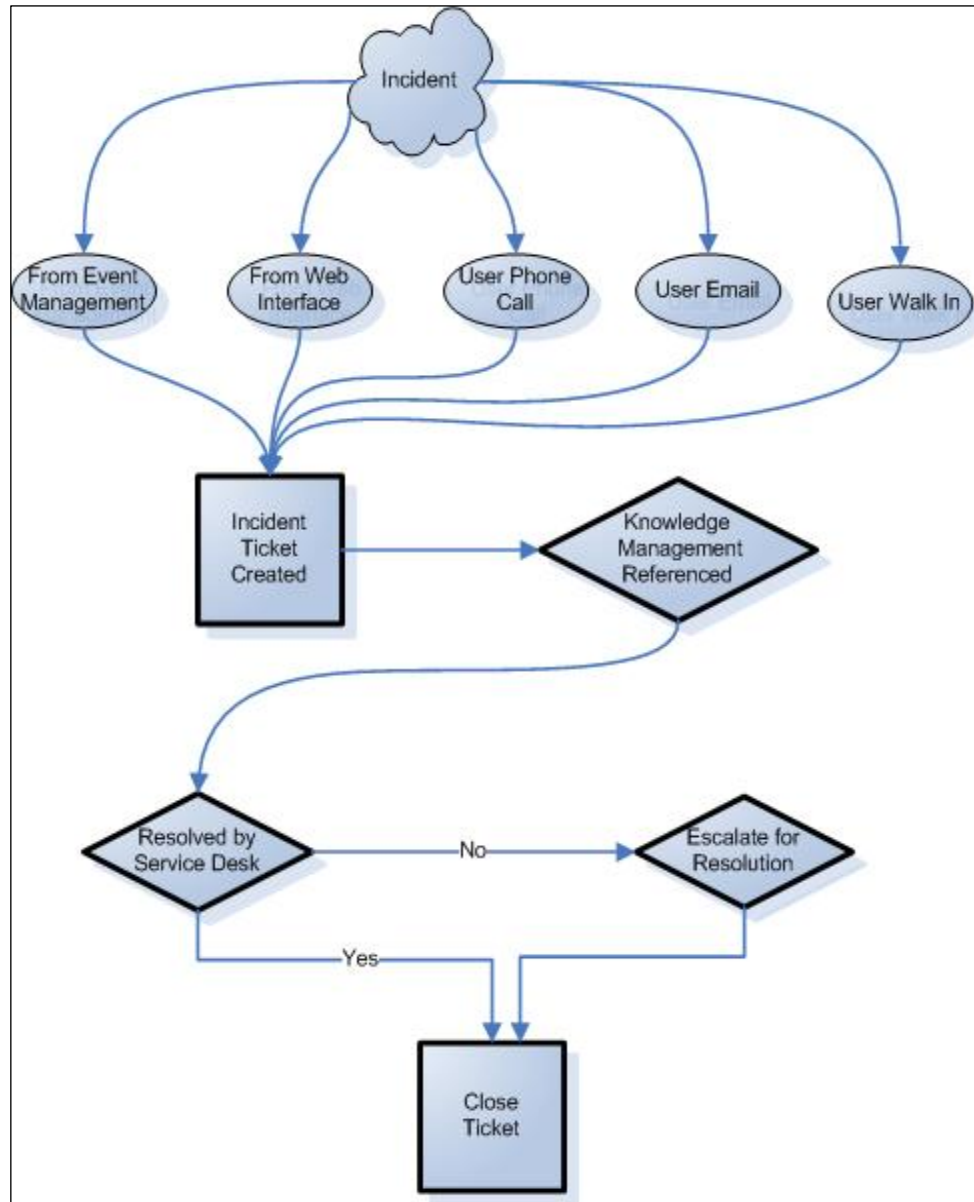


Figure 4. ITIL Incident Management process. This figure illustrates the new ITIL incident management process used by the New England hospital.

Research Focus Questions

As indicated in the introduction, the research focused on answering three specific questions. The first question was, “How has the quality of IT services at the New England hospital been impacted by changing from ad-hoc processes to standardized ones?” The second question was, “How do standardized processes better align IT services with the needs of the

organization?” Finally, the third question was, “What barriers do organizations face when adopting ITIL standardized processes?” The three questions were answered by reviewing information collected through all three data sources.

Quality of IT Services

When asked about ITIL’s impact on quality, one interviewed member of IT management stated, “ITIL is allowing us to improve and be better than we were yesterday. For us it has been a positive impact.” Both members of IT management interviewed seemed to feel that services were being delivered faster and with more accuracy. They both claim to have gotten significant positive feedback from end users and members of IT staff. “It has been a slow and at times a challenging transition into ITIL adoption but we are now seeing the benefits,” one member of management further reported.

The ITIL definition of quality is “the ability of a product, service, or process to provide the intended value” (Marquis, 2010, p.1). The IT staff observed in this research was the first line of support within IT for the hospital and they are the first to know if the organization is finding the quality of service lacking. While the transition to ITIL initially added new demands to their currently heavy workload they are now able to work at a faster pace, completing requests more quickly and with less effort. Management holds weekly meetings with these staff members to review the progress in ITIL adoption and its impact on services. New reports generated from the new incident management tool allow management to have metrics that can be compared to feedback given by staff.

The reduction of ad-hoc processes is allowing IT staff to streamline the workflow by allowing them all to follow the same path to the correct resolution. This in turn reduces human

error. While staff required a significant amount of training and time to adjust to the new processes they are now accessing knowledge and software with significant ease and no longer find the added incident management documentation time consuming.

Incident management is the process that seems to have had the most significant impact on quality of service. However, it is in many ways dependent on the quality of the other two services; therefore, it is now more effective because they are more efficient. The changes made to the incident management process are most visible to the organization as a whole. The process changes have not only allowed the IT staff to streamline their incident handling and decrease resolution time, it also has benefits for end users placing the requests. These benefits include an end user portal that allows submission, updating, and tracking of requests, as well as a self help knowledgebase.

“Providing superior healthcare services today requires you to eliminate processes that do not contribute to exceptional quality. We feel that adopting more standard processes has helped in achieving service excellence,” stated a member of IT management. The changes made to these three processes caused the New England hospital to consider what additional changes could be made to further enhance and improve on what had already been done. These small wins have had a positive impact on the IT staff observed in this study and they were inspired to identify new wins that could easily be achieved within their own areas.

IT/Business Alignment

Alignment between the business and IT is more important than ever for the New England hospital. “Healthcare is our business, not IT,” reported one member of IT management when interviewed. The changes made to the three process resulted in the IT department forcing change upon itself for the greater good of the business. Many of the current IT staff members once worked in other departments of the hospital, including clinical areas. They have an intimate understanding of the need for fast, reliable services from IT. One member of the observed staff group volunteered to write additional sections to numerous knowledgebase articles knowing that they would be more valuable when supporting nursing staff in particular. Details such as this proved to strengthen the success of the process changes. The extra effort was not always easy for staff to accomplish but, once made, they were able to achieve quick wins and see the effort pay off.

Real time reporting now available to IT management from the new ITIL incident management processes has provided much needed data regarding services provided to the business by IT. This information is evaluated by IT management and shared with senior management throughout the organization. Communication between the two groups has improved as a result of reporting that both sides can easily understand.

Barriers faced during ITIL adoption

The barriers that organizations face when adopting ITIL standardized processes can be numerous. The New England hospital found their most significant barriers to be staff training, department culture, lack of senior management support, and project time required.

The entire IT department, at the New England hospital required training and time to adjust. Extensive ITIL training for a large number of IT staff and management can take weeks, as it did for this hospital. Management needed to plan and schedule training sessions carefully in order to ensure that staffing levels remained adequate to support service demands while training took place. The decision was made to have training on site to reduce required attendance time from staff. The expected barrier of cost, stated in the literature review, occurred with training. Onsite training fees and overtime paid to some staff for training hours added up quickly, but were kept within acceptable limits. Some staff members seemed reluctant to attend training as it pulled them away from other responsibilities and required them to refocus their attention.

ITIL teaches that everyone is a part of the whole process. This can be met with hesitation from staff that are accustomed to working in “silos” and will now be required to interact and share responsibilities. The New England hospital’s IT department is broken down into defined groups under separate managers that are assigned specific responsibilities. There is little or no cross-training which further embeds the “silo” effect on the environment. Adopting ITIL required a cultural change within the department and that management impress upon staff that ITIL is an evolution, not a revolution.

There will always be some level of resistance to change within an organization. This is one of the reasons that the New England hospital chose to start small with the change in only three processes. ITIL is a vast framework that can restructure IT from top to bottom. Starting with a smaller, more manageable selection allowed staff time to adjust and become more comfortable. The hospital focused on communicating the benefits they felt the new processes would bring the staff, keeping them in sight of the goal and not fixed on the work behind the change. Starting with smaller goals in the beginning also allowed management to present staff

with quicker wins in a shorter amount of time. Resistance to change can be diluted with fast rewards.

Lack of support from senior management is often a significant barrier in ITIL adoption. The New England hospital learned as most adopters of ITIL do, that communication is a key factor for success. Management should fully support the effort and impress upon the IT department that ITIL is a much needed change and should be embraced. Without significant support from management and IT staff the ITIL adoption will be slow and possibly fail. The hospital found itself in a precarious situation where the top levels of management were not completely sold on the idea of ITIL adoption and middle management was burdened with being the sole cheerleaders and driving force behind the promotion. Middle management repeatedly failed to communicate the need for ITIL in a language that senior management understood and they continue to debate with senior management as to how far the adoption should go.

ITIL adoption, even when broken down into smaller pieces, can take a significant amount of time. The New England hospital found that even though they started small, with what they thought was manageable, the adoption stalled at times for several reasons. First, it is important to be realistic and not take on more than your staff can handle in the planned time frame. Analyzing old processes, determining their weaknesses, formulating new processes, mapping out the project and launching each stage must be completed on top of staff's existing work. The software inventory and the knowledge consolidation are two areas where the planned time frame needed to be tripled in order to be completed. The software inventory collection process ran overtime when management underestimated the time it would take staff to manually search for software throughout the organization. The knowledge consolidation process was significantly delayed

once management determined that a standard template would be used. This change required that all knowledge articles be rewritten and edited instead of simply being copied to the new location.

Second, changes and projects considered more critical to the organization as a whole arose and required that IT divert their attention away from the ITIL adoption temporarily. IT is simply one piece to the puzzle of healthcare. When situations arise that have a direct impact on patient care it is imperative that they be given the IT department's full attention. "The paint on the painter house is always chipped," stated a member of IT management.

Lastly, push back from senior management caused unexpected delays. On a few occasions senior management at the New England hospital became concerned regarding time, money, and resources being dedicated to the ITIL adoption and halted it for review. Without their complete support from the onset of the adoption, middle management found they repeatedly had to stop and acquire continued approval from senior management. Therefore the stops made to the project by senior management were compounded by middle management requiring time to re-work their presentation to senior management to re-gain approval.

Chapter 5 – Conclusions

The result of partial ITIL adoption by the New England hospital was that it impacted service management in a positive way. This was achieved by the organization removing what were determined to be deficient ad-hoc processes and replacing them with standardized processes. The three new standardized ITIL processes are streamlined, robust, and efficient. The new ITIL knowledge management process allows for instant searching of a vast database of current knowledge articles. It is no longer necessary for IT staff to waste time searching multiple locations for knowledge that may not even be accurate once found. The new software management process provides staff with a nearly complete inventory of software owned by the hospital. IT staff now has access to software and hardware inventory, as a part of configuration management, allowing them to have a logical model of the IT infrastructure. The new incident management process provides IT staff with a closed loop communication process that enables effective, timely incident resolution. Hospital staff members submitting incidents to IT are no longer left wondering about the status of their request. IT staff members now have a single, updated, searchable database containing all incidents opened with IT. Management in IT found the incident management database generates valuable reports that aid them in making service management decisions. IT staff, management, and the organization have been impacted by the process changes in a beneficial way. The new ITIL processes are superior to the old ad-hoc processes which once reviewed by IT staff were found to be deficient in several ways.

The removal of the inefficient, inaccurate, time consuming, ad-hoc processes resulted in improved service quality. With the new ITIL processes in place the service delivery from IT is faster and more accurate than ever before. This improvement is due to each new process

including a database that is current, complete, and instantly accessible. Staff found that their work flow improved and less time was wasted duplicating work that has already been completed. Management now has real time reporting to assist them in managing day-to-day operations, such as resource scheduling, and planning for future needs of the organization, such as new services.

Delivering IT services more efficiently has improved the alignment between IT and the organization. In the business of healthcare it is vital to the organization that superior performance is provided in the areas that support and sustain the delivery of care. Even the smallest process change can make the difference between being good and being great at healthcare. The additional sections added to numerous knowledgebase articles specifically for the nursing staff is an example of a small change with a big impact for the hospital. “We feel there is a direct link between IT service management and the performance of the organization as a whole,” stated an interviewed member of the New England hospital’s IT management. IT processes built on best practices can withstand the demands of the most skilled healthcare providers by providing them with effective and consistent IT processes. Adopting ITIL, even if only partially, has shown this New England hospital IT department that it can be better than it was yesterday by providing the hospital with faster more effective service that focuses on the needs of the business.

However, the positive impact that was achieved by the New England hospital’s adoption of ITIL processes was hard won. The barriers that were present were considerable at times and threatened to end the project on several occasions. Resistance by IT staff to change of processes and culture as well as lack of support for the project from senior management were the most significant and required time to overcome.

Recommendations

This study focuses on the initial stages of ITIL adoption at a healthcare facility and the results of the impact to service management recognized shortly thereafter. Therefore this research presents limitations to anyone seeking information regarding other phases of ITIL adoption within healthcare organizations. Continued ITIL process adoption should be studied within various healthcare facilities as well as the resulting impact that ITIL process adoption has on the organization's service management.

Research has shown that healthcare organizations who are adopting ITIL appear to be in some stage of partial adoption, as the literature review in this study reflects. Due to the lack of ITIL adoption research as a whole, it is difficult to determine if healthcare organizations as an industry lag behind other types of industry in ITIL adoption. This possible discrepancy would be another valuable avenue for research for healthcare organizations looking to adopt ITIL.

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