International Journal of Applied Engineering Research
ISSN 0973-4562 Volume 10, Number 7 (2015) pp. 16999-17017

http://www.ripublication.com

ITIL - A Systematic Approach to Solving Problems

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Abstract

ITIL is a set of best practices that help an organization to solve their problems in an efficient manner. It is widely used across industries to resolve a large variety of problems in an efficient manner. In this research paper, we aim to identify different problems in various industries and how they are solved using standard ITIL processes. We have interacted with personnel from different verticals of the industry and understood their problem resolution mechanism. This included the standard procedures or approach towards any problem or incident that occurs in the organization. After that, we have mapped their approach with standard ITIL processes to find out the ITIL processes that are involved in a particular procedure. From these, we have developed a matrix for problem solving using ITIL. This matrix can work as a repository to identify the most effective approach towards solving a problem using ITIL. It will also help in understanding how ITIL processes are associated with the routine industrial procedures.

Key words: ITIL, Standard operating procedure, Matrix

Introduction to ITIL

ITIL provides guidance and a common terminology for service management without being prescriptive about implementation. IT service management can enhance the management efficiency and quality to meet changing business needs. ITIL is currently the most widely-adopted approach to implement IT service management, and provides a set of best-practice guidelines for IT service management. ITIL helps measure and improve services to deliver and receive quality from both businesses and customers. ITIL's severe focus on CSI(Continuous Service Improvement) has led to its worldwide success [1].

There are 5 major areas or verticals that are covered by ITIL:

- Service Strategy
- Service Design
- Service Operations

- Service Transition
- Continuous Service Improvement

The primary objective of service management is to ensure that IT services are aligned with the business needs and actively support them. It is imperative that IT services underpin the business processes, but it is also increasingly important that IT acts as an agent for change to facilitate business transformation.

All organizations that use IT depend on IT to be successful. If IT processes and IT services are implemented, managed and supported in the appropriate way, the business will be more successful, suffer less disruption and loss of productive hours, reduce costs, increase revenue, improve public relations and achieve its business objectives [2].

ITIL Implementation Steps

For implementing ITIL there are three major prerequisites. There should be a dedicated person who we can call the Process owner and another important prerequisite is a well-trained team. Finally there should be an ITSM tool[3].

Map the Processes

Every organization works in a different way and they can decide the way they want to implement ITIL in terms of function and organizational structure. However the actual process designs will be common because most of the organizations use the best practices in IT service Management. We can design the detailed process templates and documents from the existing generic templates. This document will contain the implementation details about the various processes. The advantage of this document is that we can tailor the circumstances as per the need of organization.

Selection of Roles & Owners

- It is very important to identify the processes and their process owners, as they are the one who drive the process.
- There should be a single process owner for a particular activity but there can be more than one person responsible for an activity.

Within a larger organization the determination of a role is not straightforward. It may result in the subdivision of roles.

Analyze the As – Is Process

As-Is analysis helps to identify the flow of existing process and more importantly helps to find out the gaps in the current process. As analysis of the current process is a precursor to any process reorganization, the as – is process makes it possible to decide which processes can be left unchanged and which process needs some action.

Gap Analysis

The aim of gap analysis is to understand where current process and identify how it should be in the future. It is very important to keep in mind the vision of the business before doing the gap analysis. Gap analysis can be done for the organization as a

whole or for a particular process hence it is very important to define the scope of gap analysis.

Define To – Be Process

After identifying the gaps in process, the new processes are identified to fill these gaps. The new processes are then introduced in the existing as – is process and the resulting solution is a to – be process. It helps in deterring where the ITIL process should focus. The main objective of this is to breakdown the processes in sub processes. The processes which are included often directly affect the objectives of the project.

Continual Service Improvement

It is vital to keep on improving the existing processes to meet the ever increasing customer demand. CSI helps to check if the implementation plans are met, if not it helps to deterring how to meet it.

CSI is vital for ITIL; it is like a stabilizer for the complete lifecycle of service. Please find below the 7 step continual service improvement process:

ITIL Process Mapping

The ITIL Process Map has been widely accepted in many large and small organizations. Leveraging process model to implement ITIL faster and at lesser cost with less reliance on expensive consultants [4]

Benefits of using ITIL process model

It is easy to use and understand and thus ideally suited to overcome the single most important challenge at the beginning of any ITIL initiative i.e. to give everyone in your organization a good understanding of ITIL[5].

Importance ITIL Processes: Activities, Input and Output [6]

1. Demand Management

Goal: To understand and influence customer demand for service Activities-

- It establish Patterns of Business Activity
- It establish Core Services Packages and Supporting Services
- It establish Service Level Packages
- It combine SLPs with CSP to build the Service Catalogue with Segmentation
- It develop Differentiated Offerings

Table 1: Demand Management Input & Output

Input:	Output:
• Patterns of Business Activity • Customer Assets • Customer Outcome	• Core Service Packages • Service Level Packages • Lines of Service

2. Change Management [7]
Goal: To respond to the customer's changing business requirements while maximizing value and reducing incidents, disruption and re-work Activities:

- It create and record the RFC
- RFC and change proposal review
- Filter changes (e.g. incomplete or wrongly routed changes)
- Assess and evaluate the change
- Authorize the change and obtain authorization/rejection
- Plan updates and Coordinate change implementation
- Review and close change

Table 2: Change Management Input & Output

Input	Output
• Policy and strategies for change and release • Request for Change • Change proposal • Plans –change, transition, release, test, deployment, evaluation and remediation, Current change • schedule and PSO, CMDB, release package, baseline, Test results, test report	• Rejected and Approved RFCs • Change to the services • Service and infrastructure resulting from approved RFCs and CI • Change schedule • Revised PSO and Authorized change plans • Change decisions and actions • Change documents and records • Change Management reports

3. Incident Management [7]
Goal: To restore normal service operation as soon as possible to minimize the adverse impact onbusiness operations. Activities:

• Identification	• Logging
• Categorization	• Prioritization
• Initial Diagnosis	• Escalation
• Investigation and Diagnosis	• Major Incident Handling
• Resolution and Recovery	• Closure

Table 3: Incident Management Input & Output

Input	Output
• Incident record with details from service Desk and network • Configuration details from the configuration Management Database (CMDB) • Response from similar Incidentin	• RFC for Incident resolution • Incident record (including resolution and/ or Work-around) • Resolved and closed Incidents • Communication to Customers, Management information (reports)

Problems and Known Errors • Resolution details	

4. Supplier Management [8]

Goal: To manage suppliers and the services supplied by them Activities:

- Evaluate new suppliers and contracts
- It categorize supplier and maintenance of the Supplier and Contracts Database (SCD)
- To establish new suppliers and contracts
- Management of Supplier and Contract and their performance
- Renewal and/or termination of Contract

Table 4: Supplier Management Input & Output

Input	Output
• Business information: from the organization's business strategy • Plans and financial plans • Supplier and contracts strategy, Supplier • plans and strategies, Supplier contracts, Agreements and target • Budgets	• The Supplier and Contracts Database (SCD) • Information and report of Supplier and contract • Meeting minutes reviewed by supplier • Supplier Service Improvement Plans (SIPs) • Supplier survey reports

5. Problem Management [9]

Goal: To prevent problems and resulting incidents from happening, to eliminate recurring incidents and to minimize the impact of incidents that cannot be prevented.
Activities:

• Reactive Problem Management • Proactive Problem Management • Problem Detection • Problem Logging • Categorization • Prioritization • Major Problem Review	• Investigation and Diagnosis • Workarounds • Raising a Known Error Record • Problem resolution • Problem Closure • Errors detected in the testing environment

Table 5: Problem Management Input & Output

Input	Output
• Incident Records via CMS • Request Fulfilment feedback and metrics	• Management Information • Problem Records • KEDB, Work-around

• All proactive Service Lifecycle processes such as Capacity, Availability Management	• RFCs to Change Management

Methodology

The selection of the method depends upon the requirements of the research. We have selected the interview method for this research paper. We have talked to around 25 industry professionals who provided us the details of how a particular issue is being handled in their respective organization.

The reasons for selection of interview method for our research is that our research deals with the processes in different industries. The requirements and hence the questions for each process were different. Interview method was the best method to ensure that we get to know the holistic view of each process.

The set of questions required to find out how different problems were solved using ITIL processes in different industries; we had to have one to one interactions with personnel working in different domains. Interview method was the best option for this.

Case Study 1 - Online Recharge in Telecom Industry

Case:

A leading Telecom Operator wants to start an online recharge service for its customers. The need for this completely new service arouse due to the following reasons:

- Increase in the demand of the customers
- Increase in the number of competitors

Online recharge will enable the customers to do recharge anytime & anywhere. The customer need not visit the local vendors to get the recharge done. Anyone with the internet connectivity will be able to do the recharge.

From the Telecom operator's point of view to include this service in its portfolio lots of things need to be done starting from the development of an online portal to maintaining customer database. IT will also require an IT team to manage & support the online transactions.

Business Goal:

- To meet the increasing expectations of the customers
- To manage the increasing customer base
- To give self service capability in the hands of the customer
- To prevent the customer churn as the number of competitors are increasing
- To prevent the dependency on the local vendors for recharge
- To increase the revenue opportunity by giving recharge capability anytime & anywhere

Solution:
In order to implement this new service the Telecom Operator has planned to follow ITIL- A systematic approach which will answer all the strategy related questions, designing of service till the continual service improvement. Please find below how ITIL can be used to implement this service.

Table 6: Case Study 1

Service Strategy	
1. What service should be offered	Online recharge
2. Who the service to be offered to	Urban market where internet penetration is more
3. How to develop internal & external market for this service	Advertisement & pushing SMS
4. How to differentiate your service	Full talktime in smaller recharge, discount coupons (pay via paytm)
5. How to distribute your resources among different portfolios	Distribution of person, infrastructure etc
Service Design	
Design services to meet aggregate business outcome	Increase consumer experience
1. Service Catalogue Management	Information of all online vouchers
2. Information Security Management	Secure bank transaction portals, secure subscriber information
3. Supplier Management	Maintenance of website & payment from third parties
4. Capacity Management	1000 simultaneous users per sec, performance should not be degrade
5. Continuity Management	Backup server in case of disaster or fault
Service Transition	
Transition Objective	Inclusion of new service should not affect the existing service
1. Planning & Support	Team to manage web portal
2. Change Management	Maintain two separate files one for recharge via web portal and other for recharge via voucher
3. Release & Deployment Management	Release of beta version web portal, release of web portal for employees
4. Configuration Management	Verification of all instruments (people, process, product & partner)
5. Knowledge Management	Store, manage, updates information
Service Operation	
1. Event Management	A transaction failure occurs, an event

	(Ticket) is generated
2. Request Fulfilment	Call to help desk for advice/information (Information about data plan etc)
3. Incident Management	Resolving the ticket, money is refunded in case of failure of transaction
4. Problem Management	If transaction is failing regularly, it is a problem, try to find out the issue
5. Access Management	Only web team will access to web portal

Case Study 2 - Implementation of ITIL Service Desk by a Telco

Case:
A leading communication provider wants to implement a contact/call center with an ITIL compliant service desk as major ITSM tool for its customers. The service provider also wants to implement multiple service desk tools and processes associated with it. It will enhance the operational efficiency of the operator. For this process the operator has contacted an IT company to implement an ITSM based service Management solution. This solution will streamline the processes of the telco and ultimately increase the customer experience [11].

Business Goal:
- With the help of the service desk the telcowill trying to address the long term business and technical needs
- The company will achieve the economies of scale for its customers
- Significantly reduce the time to resolve an issue and increase the customer satisfaction
- Minimize the capital expenditure for it enterprise and business customers
- Able to handle more number of requests
- Scalable solution if the number of customers increases in future
- Automatic recording of incidents and its solutions which will act as a repository of solution for future reference

Solution:
The telco needed a service desk solution to meet the emerging need of the customers. The company wants a very robust service desk tool to function within the ITIL framework.

The IT service provider has implemented a BMC Remedy ITSM tool which can be customized as per the need of the telco. This tool was selected as it allows:
- To separate customer configuration data and the transaction data
- Support the ITIL Processes
- It can meet the emerging need of the client
- It can be customized as per the need of telco

The telecom operator partnered with the II service provider to implement the service desk as well as the application development & maintenance. The IT service

provider will help the operator in transforming the way services are offered to the customer by enabling IT service management tool across the organization.

To enable the proper and quick roll out of the IT service management tool the IT service provider took many activities:

- Understood the As – Is (existing) process of the operator
- Document the requirement from all the stakeholders and identified the gaps in the existing processes
- Then the business requirements were translated into the functional requirement
- Customized the tool as per the need of the operator
- Ensured high availability and reliability
- Identified the roles and owners
- Implemented the service desk in a phased manner

Table 7: Case Study 2

Service Strategy	
What service should be offered	Service Desk
1. Service Portfolio Management	Add host of services to be provided to customers by deploying service desk function
2. Demand Management	Managing the increasing demand of the customer and to increase their customer experience
3. Finance Management	Managing the finance required for deployment of service desk and support service by IT service provider
4. Business Relationship Management	Establishing relationship with IT service provider and the customers
Service Design	
Design services to meet aggregate business outcome	Increase consumer experience
1.Service Level Management	Having SLA in place based on the priority of the incident raised
2. Service Catalogue Management	Information of all the available services
3. Availability Management	Services will be available 24 * 7
4. Information Security Management	Secure raising & closing of incidents
5. Supplier Management	Maintenance of remedy tool by IT service provider
6. Capacity Management	Network capacity required, no of users supported, how many incidents can be raised etc
7. Continuity Management	Backup server in case of disaster or fault

Service Transition	
Transition Objective	Inclusion of new service should not affect the existing service
1. Planning & Support	IT Team to manage the service
2. Change Management	Maintenance of issues by separate teams or groups as per their expertise
3. Release & Deployment Management	Release & deployment of remedy tool for IT service management
4. Configuration Management	Verification of all instruments (people, process, product & partner)
5. Knowledge Management	Tool will store, manage, updates information
Service Operation	
1. Event Management	A transaction failure occurs, an event (Ticket) is generated by the customer
2. Request Fulfilment	Call to help desk for advice/information
3. Incident Management	Resolving the ticket, A mail is sent to customer to notify that issue has been resolved
4. Problem Management	If same issue is occurring regularly it is a problem, find out the root cause of the issue
5. Access Management	Only IT support team will access ticketing system

Case Study 3 - Hotel Industry - Setting up a KIOSK at Reception

Case:
A hotel was built in 1983 and is located near a river and many tourist destinations in Bangkok. It has 32 floors and is modeled after an ancient palace. Its dominance is being challenged by many new competitors.

Despite the increase in competition the hotel is appreciated by most of its guests as a result most of its users are repeat business customers. The hotel has seasonal customers, from May to October the customers are mostly business visitors and while November to April majority of the visitors are tourists.

In order to increase the customer satisfaction and increase the revenue a study was ordered by the hotel management. After study it came to the light that 50% of the complaints concerned were the discrepancy in the reception of guests. 35% were actual service failure and 13% were very demanding customers.

The report also found out that the hotel did not have a structured service recovery and compensation plan in place [12].

Business Goal:

- The Hotel management is trying to find out new services which can be introduced into the portfolio to combat the erosion of the valuable customers

- To have a mechanism in place to increase the customer satisfaction by reducing the rush at the reception
- A system in place to avoid customer to call reception for each and every service this may increase the availability of the staff at the reception

Solution:

- The Hotel management responded to this challenge by taking a decision to install KIOSK to increase self service capabilities
- This will help to handle the increase in the traffic and improve the customer experience
- The KIOSK enable the guest to book services at the sauna, scuba lessons at the pool, get additional information like maps, coupons etc
- The new system will make use of the room entry card as this will be available to all the guests and there is less probability to forget the room entry card
- The most important aspect of the card is that it authenticates who the user is
- This system will also prevent giving the paper coupons from the reception for different services as the users tend to lose these coupons

Table 8: Case Study 3

Service Strategy	
What service should be offered	Self Service Capability using KIOSK
Who the service to be offered to	Hotel Guests
1. Service Portfolio Management	Providing self service capability to customers by deploying KIOSK
2. Demand Management	Managing the increasing demand of the customer and to increase their customer experience
3. Finance Management	Managing the finance required for deployment of KIOSK and support service by IT service provider
4. Business Relationship Management	Establishing relationship with IT service provider, Operations team and the customers
Service Design	
1. Service Level Management	Having SLA in place to ensure the KIOSK is working
2. Availability Management	Services will be available 24 * 7
3. Information Security Management	Secure access to the hotel customer
4. Supplier Management	Maintenance of KIOSK by IT service provider& operations team
5. Continuity Management	Backup server in case of disaster or fault
Service Transition	
1. Planning & Support	IT Team to manage the service,

	Operations team to manage operations failure
2. Release & Deployment Management	Release & deployment of KIOSK for the customers
3. Configuration Management	Verification of all instruments (people, process, product & partner)
5. Knowledge Management	Tool will store, manage, updates information of customers
Service Operation	
1. Event Management	A transaction failure occurs, an event (Ticket) is generated by the customer
2. Request Fulfilment	Call to reception or support staff for advice/information
3. Incident Management	Support staff should be able to handle the request, Incident to be handled by IT for kiosk related issue
4. Problem Management	If same issue is occurring regularly it is a problem, find out the root cause of the issue
5. Access Management	Access to only valid users using room entry card

Case Study 4 - Manufacturing Industry – Power Outage

Case:
A leading steel manufacturer of India faced a problem of a major power outage. This caused their manufacturing plant to stop functioning abruptly due to unexpected power loss and resulted into huge losses for the company. The problem was that the power generation site was a few km away from the manufacturing plant and the company did not have any idea about why the power had failed.

The engineers, when they visited the power site, saw that the cables were cut by someone. They repaired the cables and everything went back normal. The approach of the company towards solving this problem was completely ITIL compliant.

Objectives:
- To immediately resolve the issue and restore the power back so that manufacturing can resume as soon as possible.
- Find out the root cause of the problem.
- Design a permanent solution so that this problem doesn't occur again.

Solution:
- Resolve the problem immediately by putting up new cables or repairing the existing ones.
- Outsource the security of the power site to a third party.

Table 9: Case Study 4

Service Strategy	
1. Finance Management	Managing the finances required for providing security to the power site as well as setting up a backup.
2. Business Relationship Management	Maintaining good relations with the customers so that the disruptions by power outage don't hamper the relations with the customer
Service Design	
1. Availability Management	Make sure that power is available 24*7 to the manufacturing plant
2. Security Management	Provide security to the primary as well as secondary site and restrict access to authorised personnel
3. Supplier Management	Look for a suitable security agency that fits the need of the company
4. Continuity Management	Backup power supply in case of disaster or fault
Service Transition	
1. Planning & Support	Operations team to provide emergency support for any kind of unplanned outage
2. Change Management	Maintenance of issues by separate teams or groups as per their expertise
3. Configuration Management	Verification and maintenance of all the components at the power site
Service Operation	
1. Event Management	Generation of Trouble ticket as soon as such a failure occurs
2. Request Fulfilment	Inform the emergency response team to act
3. Incident Management	The emergency response team should be able to resolve the issue and restore the services within the acceptable time limit
4. Problem Management	If same issue is occurring regularly it is a problem, find out the root cause of the issue
5. Access Management	Prevent unauthorised access at the power side by providing security measures

Case Study 5 - Overall operations-Healthcare Industry

Case:
An eye hospital in one of the tier-2 cities of India was going through a major transformation. They planned to smoothen their overall operations by putting a robust IT system in place. What followed was a systematic and step-by-step approach towards getting the hospital IT enabled.

Objective:
- To implement a smooth functioning IT system in the hospital in all the operations
- To make sure all the existing processes are dealt with by the system without hampering the efficiency and accuracy.

Solution:
- The hospital contacted several IT system providers and selected the best out of the lot. Since it is about healthcare and accuracy of the system was the 1st priority, cost could be compromised.
- A 5-day training workshop was organised for all the staff members of the hospital to get acquainted with the new systems.
- A 24*7 helpline was set up to deal with any kind of queries that arise while operating the systems.

Table 10: Case Study 5

Service Strategy	
Who the service to be offered to	Patients
1. Service Portfolio Management	Deploy a KIOSK for the patients to check about their details and waiting time etc.
2. Demand Management	Provide enough capacity for the hospital to expand its verticals and offer more services in future
3. Finance Management	Managing the finance required for this entire overhaul of operations
4. Business Relationship Management	Establishing relationship with IT service provider and the patients
Service Design	
1. Service Level Management	Having strict SLAs in place to ensure the KIOSK is working
2. Service Catalogue Management	Information of all the treatments offered by the hospital, details about the doctors etc on the KIOSK
3. Availability Management	Services available during the working hours of the hospital

4. Information Security Management	Make sure that the data of all the patients is secure and no unauthorised access is happening
5. Supplier Management	Maintenance of KIOSK and all other IT infrastructure by the IT service provider
7. Continuity Management	Backup server in case of disaster or fault
Service Transition	
1. Planning & Support	Provide support to the hospital staff as and when required
2. Change Management	Maintenance of the issues by a dedicated person/team from the IT systems provider
3. Release & Deployment Management	Release & deployment of the entire IT infrastructure for the staff as well as patients
4. Configuration Management	Configuration of the entire system as per the requirement of the hospital
Service Operation	
1. Event Management	If a patient/staff finds any problems with the system, he/she can raise a trouble ticket
2. Request Fulfilment	Call to reception or support staff for advice/information
3. Incident Management	Support staff should be able to handle the request, Incident to be classified according to who raised it(patient or staff member) and dealt with separately
4. Access Management	The access to the systems should be restricted to authorised users only. Full access can be given only to doctors and access to patients and staff can be kept limited.

Key Findings of The Research

Please find below a blueprint/matrix showcasing the end to end implementation of ITIL taking cases from different industry:

Service Strategy

Table 11: Service Strategy

Industry/Cases	Portfolio Management	Demand Management	Finance Management	BRM
Telecom/Online Recharge	Y	Y	Y	N
IT/Implementation of Service Desk	Y	Y	Y	Y
Hotel/KIOSK	Y	Y	Y	Y
Manufacturing/Power Outage	N	N	Y	Y
Healthcare/Overall Operations	Y	Y	Y	Y

Service Design

Table 12: Service Design

Industry/Cases	SLM	SCM	Availability Management	ISM	Supplier Management	Capacity Management	Continuity Management
Telecom/Online Recharge	N	Y	N	Y	Y	Y	Y
IT/ Implementation of Service Desk	Y	Y	Y	Y	Y	Y	Y
Hotel/KIOSK	Y	N	Y	Y	Y	N	Y
Manufacturing/ Power Outage	N	N	Y	Y	Y	N	Y
Healthcare/ Overall Operations	Y	Y	Y	Y	Y	Y	Y

Service Transition

Table 13: Service Transition

Industry/Cases	Planning & Support	Change Management	Release & Deployment Management	Configuration Management	Knowledge Management
Telecom/Online Recharge	Y	Y	Y	Y	N
IT/Implementation of Service Desk	Y	Y	Y	Y	Y
Hotel/KIOSK	Y	N	Y	Y	Y
Manufacturing/Power Outage	Y	Y	N	Y	N
Healthcare/Overall Operations	Y	Y	Y	Y	N

Service Operations

Table 14: Service Operation

Industry/Cases	Event Management	Request Fulfillment	Incident Management	Problem Management	Access Management
Telecom/Online Recharge	Y	Y	Y	Y	Y
IT/Implementation of Service Desk	Y	Y	Y	Y	Y
Hotel/KIOSK	Y	Y	Y	Y	Y
Manufacturing/Power Outage	Y	Y	Y	Y	Y
Healthcare/Overall Operations	Y	Y	Y	N	Y

Please find below a table showing the number of processes used Case Study wise. This will help us to understand which ITIL process is most widely implemented and used.

Table 15: Consolidated ITIL Processes – Case Wise

Industry/Cases	Service Strategy	Service Design	Service Transition	Service Operation	Processes Used
Telecom/Online Recharge	3	5	4	5	17/21
IT/Implementation of Service Desk	4	7	5	5	21/21
Hotel/KIOSK	4	5	4	5	18/21
Manufacturing/Power Outage	2	4	3	5	14/21
Healthcare/Overall Operations	4	7	4	4	19/21

Conclusion

This research paper mainly focuses on the implementation of the ITIL i.e. it gives an overall view of the implementation of services using ITIL.

This research paper has helped in understanding the wide range of applications that ITIL has and its scope is not limited to only IT industry. It has also helped in finding out the actual implementation guidelines of ITIL and how each process helps in resolving a variety of issues in the industry.

We have considered five case studies in this paper and each case is specific to a particular industry. We have identified a problem pertaining to each industry and tried to map the solution to the problem with the standard ITIL processes. This has helped us in understanding that though ITIL is not specific to a particular industry but it can be used to solve issues related to different industries.

References

[1] Ritchie, George. (2008). "Introduction to ITIL". Retrieved from http://www.seriosoft.com/system/files/white-papers/serio_introduction_to_itil.pdf

[2] ITSMF UK. (2010). "An Introductory Overview of ITIL". Retrieved from http://www.best-management-practice.com/gempdf/itsmf_an_introductory_overview_of_itil_v3.pdf

[3] Tech Excel. (2012). "ITIL implementation and Process Guide". Retrieved from http://techexcel.com/resources/whitepapers/TechExcel_ITIL_implementation_Guide.pdf

[4] INS. (2003). "A Framework for Incident and Problem Management". Retrieved from http://www.kwesthuba.co.za/downloads/02_ins_incident_management_0403.pdf

[5] OGC. (2009). "Two Frameworks". Retrieved from http://www.itsmf.it/documenti/Documenti/International%20WP/White_Paper_TOGAF_9_ITIL_V3_Sept09.pdf

[6] ITIL Implementation. In IT Process Map, Retrieved on January 25, 2015 from http://wiki.en.it-processmaps.com/index.php/ITIL_Implementation

[7] ITIL Checklist. In IT Process Map, Retrieved on January 25, 2015 from http://wiki.en.it-processmaps.com/index.php/ITIL-Checklists#Templates_per_ITIL_Process

[8] Use Cases: ITIL Implementation using ITIL Process Templates. In IT Process Map, Retrieved on January 25, 2015 from http://en.it-processmaps.com/products/use-case-itil-implementation.html

[9] Mountain View. (2010). "ITIL V3 Processes – Goals, Activities, Inputs, Outputs and Roles". Retrieved from http://www.mountainview-itsm.com/itil-training/downloads/Mountainview-ITIL_V3_Process_Poster_v3.pdf

[10] Mountain View. (2010). "ITIL V3 Lifecycle key input and outputs". Retrieved from http://www.mountainview-itsm.com/itil-training/downloads/Mountainview_-_ITIL_V3_Lifecycle_Key_Input_and_Outputs_v3.3.pdf

[11] Infosys Limited. (2010). "CaseStudy - Implementation of ITIL Service Desk". Retrieved from http://www.infosys.com/industries/communication-services/case-studies/Documents/itil-service-desk.pdf

[12] ITpreneurs Nederland B.V. (2013). "ITIL Case Study – The Royal Chao Phraya Hotel". Retrieved from http://campus.itpreneurs.com/itpreneurs/LPEngine/ITIL/Additional%20Links/English/2011/Royal%20Case%20Study.pdf

[13] Computer Associates. (2004). "Delivering Best Practices for Complex IT Environments". Retrieved from http://i.zdnet.com/whitepapers/Delivering_Best_Practices.pdf

[14] CA Inc. (2006). "Incident Management: A CA IT Service Management Process Map Incident Management Process map". Retrieved from http://www.itsmcampus.com/ca_public/30267_incident_Management_processmap.pdf

[15] SarrafanSetareh, Thompson Lee & Charles John. (April 17, 2009). "EDUCAUSE". Retrieved Feb 01,2015 from http://www.educause.edu/Resources/DrivingOrganizationalChangewit/170278

[16] Carter-steel, Aileen. (2006). "Transforming IT Service Management – the ITIL Impact". Retrieved from http://eprints.usq.edu.au/1612/1/Cater-Steel_Toleman_Tan.pdf

[17] Porwal, Atul. (2011). "Infusing IT Service Management into e-Governance". Retrieved fromhttp://www.infosys.com/infosys-labs/publications/Documents/e-governance/infusing-it-service-management.pdf

[18] Zhu, Li. Song, Meina and Song, Junde. (2009). "ITIL-based IT Service Management Applied in Telecom Business Operation and Maintenance System". Retrieved from http://www.academypublisher.com/ proc/ iscsct09/papers/iscsct09p243.pdf

[19] Rae, Barclay. (2007). "A Practical Guide to IT Service Management and ITIL v3". Retrieved from http://afsmi.nl/fileadmin/user_upload /Management_ITIL-practical-guide-to-ITSM-and-ITIL-3-Part-1-Moments-of-truth.pdf

[20] Salle, Mathias. (2004). "IT Service Management and IT Governance: Review, Comparative Analysis and their Impact on Utility Computing". Retrieved fromhttp://www.hpl.hp.com/techreports/2004/HPL-2004-98.pdf