Software Development for IT Service Help Desk

Prof. Mrs. Jyoti Bansode
Department of Information
Technology
Shah & Anchor Kutchhi Polytechnic
Mumbai, India.
jyotivbansode@gmail.com

Mr. Raj Visaria
Department of Information
Technology
Shah & Anchor Kutchhi Polytechnic
Mumbai, India.
visariaraj1997@gmail.com

Ms. Aditee Varhadi
Department of Information
Technology
Shah & Anchor Kutchhi Polytechnic
Mumbai, India.
vaditee@gmail.com

Mr.Dhaval Patania
Department of Information Technology
Shah & Anchor Kutchhi Polytechnic
Mumbai, India.
dhavalpatania@gmail.com

Abstract:- Due to the importance of high-quality customer service, many companies use intelligent helpdesk systems (e.g., case-based systems) to improve customer service quality. IT Service Help Desk offers a set of "best practices" for managing IT services and is one of the most widely accepted approaches to IT service management in the world. Recently, more and more enterprises implemented a centralized IT service management model based on the ITIL framework. Organizations should take proper measures in building a mature Service Desk to ensure successful implementation of IT Service Help Desk. This software will be established in a network to every employee having its access (authorization) in IT department for the IT related services provided to employees.

Keywords: HelpDesk, IT.

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1. Introduction

This paper is based on services provided in the IT department of NPCIL. In this paper the manual work done by the employees like filling the application form manually for ordering the entity(s) & then submitting the same to service provider & then after completing the time-consuming formalities the entity(s) is been provided. The previous work had the service of only submitting automated requests for grievance about the electronic devices without manual work done. This software will be established in a network to every employee having its access (authorization) in IT department for the IT related services provided to employees. This software will hence provide a fully automated system for IT department & hence will increase the efficiency of the work done & services provided will be smoother & faster.

In today's demanding world, IT plays a pivotal role in creating new opportunity and delivering competitive advantage to enterprises. Business focused approaches on managing IT resources are highly valued in today's enterprise. As IT departments and organizations transition from technology to service based management models, investing in a credible, best practice framework such as IT Service Help Desk is becoming more important.

2. Background

Before the thought of this software being implemented, the company used the printed forms which were used by the employees for a particular requests like fault in a system or IT stationery to be requested, etc. & was done in such a flow that the forms were filled by the employee manually & then the forms were submitted to the authority & then finally the same were provided to higher authority to confirm the request & accomplish the request done by the employee.

After the request was provided, there would be a confirmation from the Administrator who could check that the service provided to the employee was proper or not & if the request was completed successfully, the records were maintained in a register (manually) every time & if the request wasn't completed then the prior procedure was repeated.

Our software will thus, overcome this flaw of manual work done by providing each employee with username & password to have an authorized access to the software. In case of emergency, the records kept in the register would get damaged.

For Example, The organisation has caught fire due to some electric short-circuit the whole records(i.e. Manual) will be destroyed so if the records are stored in a network there are least chances of records or data being damaged. So also, for

securing the records, the software is being implemented. Hence, according to the username, the records will be secured & maintained.

3. Literature Review

IT Service Help Desk refers to the implementation and management of quality IT services that meet the needs of the company. IT Service Help Desk is performed by IT service providers through an appropriate mix of people, process and information technology. The following represents acharacteristic statement from the ITService Help Desk literature: "Providers of IT services can no longer afford to focus on technology; they now have to consider the quality of the services they provide." Therefore, the providers of IT services should shift their focus on technology and internal organization to the quality of services they provides. If the IT services providers cannot provide pro- active and value-added service to end users, we can say the IT service level is low, although the IT services provider have a huge infrastructure with latest technologies. IT department must try to attain the proactive level of IT service management process maturity and successfully deploy these emerging IT Service Help Desk technology.

3.1 The Definition of Service Desk

Service Desk is a primary IT service called for in IT service management (ITSM) as defined by the Information Technology Infrastructure Library (ITIL). It is intended to provide a Single Point of Contact (SPOC) to meet the communication needs of both Users and IT engineers, but also to satisfy both Client and IT Provider objectives. Service desk handles service requests, as well as providing an interface to users for other activities such as:

- Change of location of 'IT' Asset
- Consumable Request Form
- Consumable Request Form (Emergency)
- Feedback on IT assets / IT services
- Request for Data Recovery
- Request for PC / Printer / Scanner
- Surrender of 'IT' Asset
- Customer Feedback Form

Mission of Service Desk is to be a central point of contact between the User and IT engineers.

3.2 The Definition of Service Desk in NPCIL

In NPCIL's view, the main responsibilities of IT Service Help Desk are:

- Accept Users' Requests
- Record & Track Users' Feedback

- Update users' current status and progress about their request in a timely manner
- Provide management related information and suggestion, improve service quality
- Discover the problem in IT Service operation from users' feedback

4. New Service Help Desk Functions

4.1 Benefits of Service Help Desk

A traditional Service Help Desk only plays a contact point in IT service organization, but companies expect it brings more value and benefits. A good Service Help Desk provides the following benefits:

- Direct Benefits
- Reduced Cost of request resolution
- Increased productivity of IT staff
- Improved asset utilization and life cycle management
- Standardization
- Improved availability
- Managing appropriate expectations

Thus, when implementing ITService Help Desk in company, the responsibilities and goals should be adjusted to realize the above benefits.

4.2 New Service Help Desk Functions

With the development of technology and service requirement, the position of Service Desk is changed. It plays an important role in Service Operation (see Figure 2). Service Desk needs not only accept the service request reactively, but also discover the problem proactively.

The suggested functions of new Service Help Desk are:

- Filter and categorize service requests

As the Single Point of Contact (SPOC) of IT service, Service Desk accepts all the service requests from end users. Most of the service requests are to resolve easy problems. That's to say, most of the service request will be resolved and closed by Service Help Desk at the first contact. Usually, more than 60% service requests are resolved by Service Help Desk directly, then they categorize the rest requests and assign to the appropriate team.Service Help Desk plays the most important role in IT department, they handle most of the requests from the end users, and also be the interface to contact with the backend team.

- Knowledge Base Maintenance

Knowledge Base (KB) is a special kind of database for knowledge management. A knowledge base is an information repository that provides a means for information to be collected, organized, shared, searched and utilized. It can be either machine-readable or intended for human use.

Service Help Desk is the key user of Knowledge Base. In daily work, they can easily know which Knowledge Base article is useful, which one is out of date and which one has very low resolve rate. With such information records, Service Help Desk should proactively maintain Knowledge Base.

- Initiative Problem Management process

Service Help Desk also should play an important role in Problem Management process. Problem can be collected from requests. Service Help Desk should have the awareness to define a problem in a timely manner. For example, if Service Help Desk received a lot of requests with similar symptom, they should consult the senior technical staff to conduct Root Cause Analysis (RCA) process as soon as possible.

- Event Management (Proactive Monitoring Service)

Event Management is the process that monitors all events that occur through the IT infrastructure. It allows for normal operation and also detects and escalates exception conditions. Service Help Desk cannot only accept request reactively, another function for them is providing proactive monitoring service. Service Help Desk can choose appropriate tool to monitor the status of servers, network devices, storage, UPS and etc.

4.3 Case Study

Here is a case study in Nanjing, China. Before 2010, the service desk applied a traditional process and functions. They received service requests reactively, and then category the service requests into different genres and dis-patch to the related team. However, the result is not good due to the following reasons:

- Service Desk engineers' skill cannot be improved by handling real tickets, which caused high attrition rate and higher training cost.
- 2nd tier technical engineer spent a lot of time in replying easy questions and inquiry, cannot focus on the technical part, the work efficiency is low.
- There is no a centralize method to manage and update knowledge, the resolve rate mostly depended on experience.
- Service desk didn't have the awareness to be involved in the Problem/Change management process.
- VIPs' requests cannot be addressed timely.
- Cannot proactively find the potential issues

To improve the service level of service desk, the service desk was restructured in 2010. The major change was responsibilities. Besides Incident Management process, the new service desk was assigned to be involved into more of ITIL process, such as: Problem Management, Change Management, Event Management, Service Level Management and etc. With about 6 months' efforts, the restructured was completed successfully.
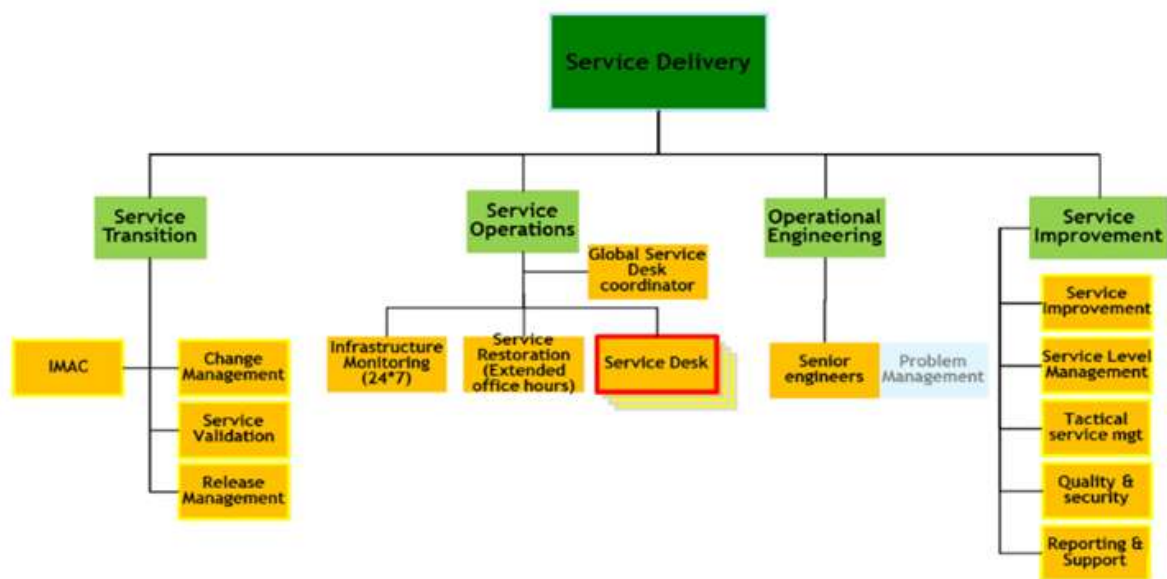

Figure 1 Position of service help desk in company

5. Requirements

5.1 Software requirement

- Platform used for this Software Development is *"ColdFusion"*.

ColdFusion is a commercial rapid web application development platform invented by Jeremy Allaire and JJ Allaire in 1995. ColdFusion was originally designed to make it easier to connect simple HTML pages to a database. By Version 2 (1996), it had become a full platform that included an IDE in addition to a full scripting language.

- Language used for this Software Development is *"Cold Fusion Mark-up Language"*

ColdFusion Mark-up Language, more commonly known as CFML, is a scripting language for web development that runs on the JVM, the .NET framework, and Google App Engine. Multiple commercial and open source implementations of CFML engines are available, including Adobe ColdFusion, New Atlanta BlueDragon, Railo, and Open BlueDragon as well as other CFML server engines.

- Language used for verification is *"JavaScript"*

JavaScript is a dynamic computer programming language and increasingly considered an "assembly" language. It is most commonly used as part of web browsers, whose implementations allow client-side scripts to interact with the user, control the browser, communicate asynchronously, and alter the document content that is displayed It is also being used in server-side network programming, game development and the creation of desktop and mobile applications.

- Database used for this Software Development is *"Microsoft SQL Server"*

Microsoft SQL Server is a relational database management system developed by Microsoft. As a database, it is a software product whose primary function is to store and retrieve data as requested by other software applications, be it those on the same computer or those running on another computer across a network (including the Internet).

5.2 Hardware Requirement

Hardware required for this Software are:

- Operating System – Windows
- Processor – Pentium Processor & above
- CPU – Recommended 1.2 GHz
- Memory - Minimum 1 GB Recommended 2 GB
- Peripherals – Mouse, Keyboard, Monitor, etc.

6. Conclusion

As several key successful factors to succeeding in ITService Help Desk implementation, we suggest that enterprise attach importance to Service Help Desk. Service Help Desk can be implemented in many different ways; however by following the best practices outlined in ITIL, it should meet the most important need of the user and company. In addition, by following the best practices, the Service Help Desk will enable the company to have a foundation for the IT department not only to meet the increasing needs of the user, but for the IT department to link into strategic areas within the company.

A good Service Help Desk allows enterprise to be less dependent on specific technology. A good Service Help Desk communicates effectively and efficiently with each user. There are many more things which a good Service Help Desk can do well, so let's pay more attention on Service Help Desk when implementing IT Service Help Desk.

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