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Research Article

LIFE CYCLE MANAGEMENT TRACKER TOOL

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ABSTRACT

Life Cycle Management (LCM) provides service operations like Incident Management(IM) and Problem Management(PM) for their clients. During the feasibility study, it was found that there are many incident and problem management process documentation and reporting which are done manually. Two of these areas are identified for automation, which will help in reducing the manual effort and also standardize the output. Problem management performs Root Cause Analysis(RCA) for every continuous repeated incident. To standardize and improve the document access, LCM is exploring a tracking tool. In order to perform effective task tracking and to provide management a clear through picture a new and improved LCM tracker V2 tool was designed. The new tool designed based on the feedback and drawbacks observed in the earlier version. The tool was successfully able to capture more than 2,500 man hours of tasks. V2 tool is required for sending Executive Summary automatically to the clients that consists of ticket details like Incident ticket number, severity, location from where the issue is reported, like data center or customer location and details of issue with impact analysis and cause of incident and how the resolution has been driven, current status and next action to be taken. It reduces the time as well as manual effort.

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INTRODUCTION

Information Technology Infrastructure Library (ITIL) is a framework for Information Technology (IT) Service Management. It is a practical approach to the identification, planning, delivery and support of IT services to businesses. A service is something that provides value to customers. Services that customers can directly utilize or consume are known as business services. ITIL organized around a service lifecycle which includes service strategy, service design, service transition, service operation and continual service improvement (Valerie Arraj, *et al*, 2014)

The life cycle starts with Service Strategy – It understands who the IT customers are, the service offerings that are required to meet customers' needs, the IT capabilities and resources to develop these offerings, and the requirements for executing them successfully. Driven by strategy throughout the course of delivery and support for the service, the IT service provider must always try to ensure that the cost of delivery is consistent with the delivered to the customer.

Service Design-It ensures that new and changed services are designed effectively to meet customer expectations. The technology and architecture required to meet customer needs

cost effectively are an integral part of service design, as are the processes required to manage the services.

Service Transition-Through this phase the design is built, tested and moved into production to enable the business customer to achieve the desired value. This phase addresses managing changes: controlling the assets and configuration items (the underlying components such as hardware, software etc.) associated with the new and changed systems; service validation; and testing and transition planning to ensure that users, support personnel and the production environment have been prepared for release for production (Stuart Rance, *et al*, 2011).

Service Operation-Once transitioned, service operation then delivers the service on an ongoing basis, overseeing the daily overall health of the service. This includes managing disruptions to service through rapid restoration after incidents; determining the root cause of problems and detecting trends associated with recurring issues; handling daily routine end-user requests; and managing service access.

Continual Service Improvement-Continual Service Improvement offers a mechanism for the IT organization to measure and improve the service levels, the technology and the

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efficiency and effectiveness of processes used in the overall management of services (David Cannon, *et al*, 2011).

AT&T (American Telephone and Telegraph), one of the largest telecommunications company in the world provides the internet connectivity to its clients. Centralized Life Cycle Management is a team in AT&T which involves in ITIL activities to provide services to few clients of AT&T. In this process CLCM needs efficient way to access tracking incidents details in an updated environment.

LCM Incident Tracker

Centralized Life Cycle Management (CLCM) has to send a report called Executive Summary for their clients. Report contains current number of incidents, criticality of the incident, current status, action that was taken and next action to be taken. CLCM depends upon the historical data in finding the number of open incidents, number of incidents under severity one, two and other, and their status corresponding to each client. When an alert come through mail, they search for the ticket information like severity, and status in automated tools like AOTS (AT&T One Ticketing System), Unified Desktop and Vital Suite. The current process for carrying out data like current number of open incidents and other related information takes a lot of manual effort and time consuming. Also, it does not give the live information.

The ticket details were stored manually in Microsoft Excel Sheet that consists of current number of tickets under each client and status of each incidents. Also, it should store the information like CLCM team member information who worked on the incidents and what action they undertook to resolve the incident.

It is important to have an effective Ticket Dashboard also called as LCM Tracker (Life Cycle Management Tracker) which contains current number of open incidents, their criticality, and tickets under each client and their status. Dashboard should be capable of sending the report to the CLCM team members and managers for every 8 Hours. Also, it should have capability to store the closed tickets, and the people who worked on the tickets in the past. Such that it will also helpful in providing the reliability and authorization. Thus, LCM Tracker creates an environment for CLCM team to find the details of the issues in updated manner. So, it allows team to concentrate on the issues that are having high priority. This live dashboard gives updated information to send Executive Summary to the clients.

Literature Study

In an organization lot of information will be shared daily among each other or colleagues. Every team in an organization needs planning, coordination and collaboration to get things done. Also, there should be communication flow between team members on creating and updating information related to the clients and their related information. Each and every time team members has to be informed by Emails to notify or inform others. It is very difficult to inform every member through mails by texting, attaching files like word or excel documents. It is a cumbersome process. So proper communication is needed in company for exchange of information where everyone in it can access it (Stuart Rance, *et al*, 2011).

Existing System

LCM has to send an Executive Summary to its clients. This summary report consists of current open incident, status, action taken, duration of incidents and next action to be taken to resolve incident. LCM Team used Microsoft excel sheet for entering incident details, each time a new excel sheet has to be used and send via an email to them After an alert came, for ticket details like status, severity, and incident duration it is needed to go to tools like AOTS (AT&T One Ticketing System) or Unified Desktop and Vital Suite. For each and every ticket we need to go and search and make a note of it. We are relying on the dashboard that depends on historical data. Dashboard consists of current open incidents, number of incidents with high priority, status and incident duration. It is having lot of manual effort and time taking process. Also, it doesn't give updated information what we need [5]. To standardize and improve effective utilization, LCM is exploring a tracking tool. In order to perform effective task tracking and to provide management a clear through picture a new and improved LCM tracker V2 tool is designing

V2 Tool Need

Centralized Life Cycle Management (CLCM) has to send a report called Executive Summary for their clients. Report contains current number of incidents, criticality of the incident, current status, action that was taken and next action to be taken. CLCM depends upon the historical data in finding the number of open incidents, number of incidents under severity one, two and other, and their status corresponding to each client. The current process for carrying out data like current number of open incidents and other related information takes a lot of manual effort and time consuming. Also, it does not give the live information. The ticket details were stored manually in Microsoft Excel Sheet which consists of current number of tickets under each client and status of each incidents. Also, it should store the information like CLCM team member information who worked on the incidents and what action they had taken to resolve the incident. (David Cannon, *et al*, 2011). Drawbacks of earlier version V1 tool are:

1. V1 tool has less effective dashboard.
2. Adding and closing of incidents are not captured.
3. V1 tool has limitation with reporting and it doesn't have Problem Management process.
4. It doesn't have Task Management feature and the cosmetic look was changed to look like a tool. To overcome the problem of V1 tool and in order to perform effective task tracking and to provide management, a clear through picture, a new and improved LCM tracker V2 tool was designed. Developing a live Ticket Dashboard, consists of current open incidents and all its related information of all 60+ accounts.

Proposed Model

In AT&T CLCM team should be aware of the ongoing issues in live and updated manner. Ticket Dashboard should allow CLCM team to prioritize the incidents based upon the criticality, current status and reducing the manual overhead

LCM Tracker Modules

These modules will be used to explain the way of usage of tracker in effective way.

Login Validation

Front end has been developed by using HTML, CSS and JSP (Java Server Pages) and it will take the login details from the user. The login credentials will be sent to the server for the verification. If the user details is valid then he will be allowed to access to LCM Tracker. Otherwise, he will not be allowed to access it. Here, the user credentials will be same as AT&T login details.

Identifying total number of Tickets

LCM team was divided into three sub groups. LCM tracker created in such a way that the member of other group or team will not able access the details of other group. However, this case was exempted to the managers of the team. They have access to all the teams. Then, a Dashboard consists of incident count of the customers will be displayed. This information can be sent to other people through Email. Also, it will be sent to all the team members and managers through Email automatically for every 8 Hours. The same information can be downloaded to MS Excel sheet.

Identifying the current ticket details

The tracker will provide the ticket information in detail like current status, next action and next check time. Also, ticket information in red color if it crosses the next check time.

Adding a new Ticket to the LCM Tracker

User can enter a new ticket to the tracker by giving the valid ticket number. Then he has to give the description, current, status, and next action. The ticket details will be saved in the tracker.

Report Generation

Reports will be generated on the past incidents like who worked on the tickets and how many tickets occur for each customer under specified time interval

Tracker Handling Steps

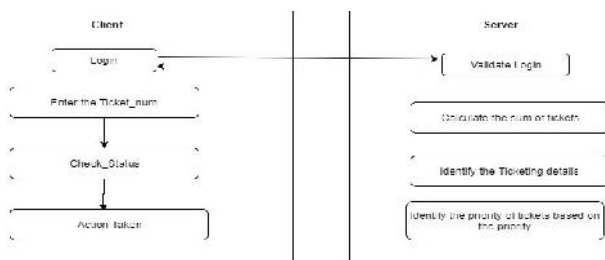


Fig 1 Tracker modules

Experimental Results

This tool was design to perform effective incident tracking. Some of the features were

1. New look and feel
2. Single click access to various tools through a single tools strip
3. Management Dashboard

4. Integrated with Problem Management ticketing systems
5. Refined Reporting
6. One page ticket update etc.

Login page

This page is the LCM tracker home page and it will ask the user credentials. User should enter the AT&T login credentials and it will search for the matching information in the Database. If the details matched then home page will get opened. Otherwise, access will be denied.



Fig 2 LCMTracker tool Home Page.

Dashboard page

Dashboard page will contain all the active incident count for all the customers. We can get the information like how many tickets under severity or priority 1, 2 and which are pending for long duration (more than 24 hours). We can save this tabular information in MS Excel sheet and also we can send through Email to other people. The same information can be automatically sent to the team members and managers through Email.



Fig 3 Dashboard page

Open Entries Page

This page will show all the active ticket details in detail. Like, type of the incident, severity, customer, source, reference, Incident start date, description, current status, next action, next check time, owner, and state of incident.



Fig 4 Open Entries page

Opening a new ticket

User can enter the new ticket by clicking on Creating New Entry. Here we will get two options. One is Incident and other

one is problem. User can choose any one depending up on the type of ticket. Then, he will get a new window will appear to enter the ticket number. Ticket number has to be entered after this priority, customer, and address of the site will be generated automatically. The user has to enter the current status, description, and next action. Then he has to submit. After submitting the user will be allowed to take the ownership on the ticket. The information will be recorded in LCM tracker database.

Fig 5 Opening new ticket

Closed Entries Page

This page will display all the closed tickets. User can view the history of the ticket like who worked on the ticket, when it was opened and closed. Also, what action were taken in order to restore the incident outage.

Fig 6 Closed entries page

Report page

This page is repository of tickets that SLCM team members worked in the past and current. It will allow the users to find out how many tickets worked by each team member in the given period. Also, how many tickets came for each customer and its related information. Thus it will be used for providing authentication, reliability and accounting

Fig 7 Reports page.

CONCLUSION AND FUTURE ENHANCEMENT

Tracker tool is designed to restore the service at the earliest and minimize business impact effectively. It manages customer communication, manages escalation, ensures proper visibility and identifies work around. Tracker allows user to view the ticket details in updated fashion. The tracker tool is highly secure. It allows only authorized users to access the content.

Tool provides the details automatically which gets updated time-to-time. It reduces a lot of manual effort, time and provides updated information and it is useful for providing the authentication, reliability and accountability. In future, LCM Tracking tool can be used to enhance the visual behaviour. It highly improves the look and feel. It can be used in Piecharts, Bargraphs etc. Visualization makes more efficient in terms of usage and understanding. It will reduce lots more manual efforts. Typically the data in a chart is represented graphically, since humans are generally able to infer meaning from pictures quicker than from text. Text is generally used only to annotate the data likewise Visual representation makes to put less effort.

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