Analysis of Service Desk Web-Based Information System Based on Itil V3 Framework In Pt. Bsi

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Abstract - PT. BSI is the IT service provider company which was established in 1996 in Jakarta, Indonesia, with more than 100 employees who are involved in relationships with customers. Being one of the subsidiaries of Mitsubishi Corporation, a global business and our knowledge network located from USA (MI-BS), Brazil (MC1), Tokyo (ITF) Shanghai (I-Vision), and Thailand (Ictus). In terms of serving customers who use IT services provided by PT BSI, some difficulties still faced today by PT BSI. Some of the difficulties being experienced are not yet any application that can record every incoming reports, applications that can help PT. BSI in monitoring the disturbance which often reported by users of IT services. The other difficulty is processes used do not meet the requirements of international standards. With a building the supporting application for PT. BSI, it is expected that PT. BSI can record any incoming problem reports, can monitor the amount of disruption and processes used are in accordance with international standards in this case is based on the ITIL framework.

Keywords: User, Services, Ticket, Incident.

I. INTRODUCTION

1.1 Background

The growing of services provided and the increasing number of customer which using IT services push PT. BSI to improve after-sales services such as improving services about complaints which received from customers and provide a quick response as well as the right solution to resolve all problems faced by customers, so that the services which provided to customers running well.

PT. BSI as a company that is experienced in terms of providing information technology services, has adopted a concept that refers to the concept that exists in the IT Infrastructure Library (ITIL) best practices for implementing IT Service Management activities. The existence of this system is essential to make it easier for the user or analyst to conduct follow-up and monitoring of ticket's complaints of problem of services provided by PT. BSI and in an attempt to control each service or problems that come for the next can be measured, in order to improve the performance of the service PT BSI.

With increasing user expectations for a reliable IT services. PT BSI as service providers begin to pay attention to the process of managing the good services. All devices that have been owned at this time is sufficient to make the service expected, but the sophistication of the device remains to be improved in line with the desire PT. BSI to improve its service to customers.

Therefore, to support the improvement of these services, PT BSI needs to improve the quality of one of the ITIL's functions, that is Service Desk. Service Desk is a function in the ITIL which is often used as a Quick Win initiatives in the implementation of the ITIL framework. For organizations that have implemented Service Desk, the next step is how to implement processes and other ITIL functions, especially those related to Service Desk.

1.2 Research Problems

Problems faced by the service desk in the PT BSI in managing incoming reports from IT service user is:

1. There is no application that records incoming reports.
2. There is no facilities to make reports required by service desk.
3. Service Desk is difficulty in monitoring reports received from IT services's users and in doing by the technical support team.
4. Frequent complaints which are entered due to the slow response of the company for any reports submitted by IT services's user.
5. The process is not yet standard, resulting in irregular work activities.
6. There is no media storage for new knowledges (Knowledge base), thus can easier for service desk to get first solution.
7. There is no a clear escalation of the problems that led to frequent reports which coming forwarded to a team that is not appropriate.
1.3 Purpose and Objectives
The purpose of the improvement or optimization of the service desk is to help facilitate the work of the service desk team to improve the effectiveness and efficiency of performance, especially in dealing with customer complaints or reports of IT services that have the problem, by following the reference of ITIL V3.

The purpose of the development of applications for the service desk is to:
1. Make it easier service desk agents to make any records from incoming problems.
2. Accelerate the response from service desk to the customer.
3. To help generate reports that are relevant and up to date.

1.4 Limitation of Research
The limitation in this research are:
1. Incident recording process.
2. Categorization incident process.
3. Storage process in the knowledge base.
4. Incident closure process.
5. Reporting Incident process.

ITIL processes associated with service desk that is not discussed is:
1. Request Fullfillment
2. Problem Management

II. METHODOLOGY

2.1 Basic Concepts of ITIL
ITIL Framework (Information Technology Infrastructure Library) is an IT governance framework containing best practice in particular in the IT service management. At this time the ITIL framework has been developed up to version 3. In this version, the ITIL framework described the stages of IT service management as a service lifecycle.

There are five serve lifecycle processes in the ITIL, they are:
1. Service Strategy: At this stage, do the development of a strategy to transform IT service management into a strategic asset from organization.
2. Service Design: At this stage do development of IT service management guidelines based on the strategy that has been developed previously at the stage. On the other hand, The Guidelines build based on the applicable policy in organisation and for fulfillment the customer satisfaction.
3. Service Transition: At this stage do the process of transition from the old IT governance to the new IT governance that have been developed in Service Design.
4. Service Operation: In this section contains lists of best practice steps to do IT service management.
5. Continual Service Improvement: In this part, manage input from customers who will collaborated in four stages above. It aims to increase the output from Service Strategy, Service Design, Service Transition, and Service Operation activity.

Based on the ITIL framework, the incident is an interruption or reduction in the quality of IT services. In addition, a configuration error on the system can be incidents although not yet cause a significant problem in the system. Incident management is a process undertaken to resolve an incident. Incident management processes is based on input from the user through the service desk, technician's report, as well as automatic detection from an event management tool. Incident management on ITIL v3 framework currently is on Service Operation Cycle.

The main goal of incident management is to restore IT services to normal condition as soon as possible, and reduce the negative impacts on the core business activities of the organization. The normal condition of IT services is the state that has been previously defined in a SLA (Service Level Agreement).

Here are the activities in the framework of incident management according to ITIL v3:
1. Incident Identification
   Incident management process begins with the identification. Identify the most common is through a service desk services and reports from technicians. In the other hand, incident can be done automatically by the event management tool that is installed on the main devices. The ideal conditions of the identification step is incident can be identified before the implications to user.

2. Incident Logging
   This step must be done for each type of incident both large and small. Some of the information that should be noted that related about incident is ID, incident category, time of the incident, incident description, contact person or group who responsible for the handling, implications of the incident and time closure.

3. Incident Categorization
   In making this category of incidents, it takes a special process between IT managers and management organizations. It aims to produce a category of incidents and priority handling in line with the organization's business processes. Category incidence can be made based on the estimated duration of treatment, the implications for the organization's business processes, and the number of technical who related to.

4. Incident Priorization
   Prioritizing incidents carried out based on the categorization which was created earlier.
Priority incident handling can be done based on the size of the implications of the incident to the principal business activities of the organization, or by the length of the handling of the incident.

5. **Initial Diagnosis**
   Early diagnosis of the incident must be done by each of the parties was first associated with the incidence of both service desk, technical staff, as well as automated devices such as event management. If the incident is found by the service desk by telephone from the user, then arrange the service desk who completed the user still related incidents during the phone.

6. **Incident Escalation**
   The incident escalation is the act of increasing the level of incident handling. It is closely related to the results of the initial diagnosis of the incident. If the diagnosis is found that the incident can not be treated, it must be done escalation of incidents. The escalation of incidents there are two kinds, they are function escalation function and escalation hierarchy.

7. **Investigation and Diagnosis**
   investigations carried out to find the source of the problem from the incident. In conducting the investigation, any action must be reported also to the incident form. This is useful as historical data handling of an incident.

8. **Resolution and Recovery**
   This step is an action taken to resolve an incident. The resolution can be performed by the service desk as the first party that found an incidence from user, engineers who are working on the configuration activities, as well as by the supplier of the device is still under warranty.

9. **Incident Closure**
   The incident closure is a step undertaken by the service desk and technical staff linked to make sure whether the incident had been handled properly completed. Which must be considered in the closing the incident is the documentation of the process of handling the incident, an estimate of the recurrence of incidents, and user satisfaction survey on the handling of the incident.

2.2 **Software Engineering Methodology**
   Modeling in software is a work to do in the early part of the engineering and modeling will affect the activities in software engineering. One of the models used in the software engineering development is Waterfall model. Here below is a series of activities in the Waterfall model process:

![Waterfall Model](image)

**Fig. 1 Waterfall Model**

### III. ANALYSIS AND DESIGN SYSTEM

#### 3.1 Current System Analysis
   This application completely only can be used by service desk agent and technical support team which process is a user of IT services report the problems to the service desk which will then be forwarded to the technical support team. if service desk team can not resolve as a first resolution or provide solutions at first time in solving the problems from the customer.

#### 3.1.1 Use Case Diagram for Current System
![Use Case Diagram](image)

**Fig. 2 Use Case Diagram for Current System Business Process**

#### 3.1.2 Activity Diagram for Current System
![Activity Diagram](image)

**Fig. 3 Activity Diagram for Current System**

#### 3.2 Propose System
   Based on the analysis conducted on PT BSI, then in this case the authors propose a system design that can be outlined in the following:
IV. IMPLEMENTATION AND TESTING

From the test results of the overall application service desk, it can be concluded that testing has shown the output (output) and the process in accordance with the design of the application of this program. The test results obtained can be analyzed as follows:

1. The main page links that connect between interfaces contained in the website running well.
2. The login page, which control the activity of the main menu pages / links in the online library system will be implemented as desired.
3. Ticket Search page, can be running same with system design desired.
4. Knowledge Base page can be running same with system design desired.
5. Report page can show reports same with system design desired.
V. CONCLUSIONS

The conclusion that the author can be taken from the results of the implementation and evaluation of this research are as follows:

1. Service desk can record any problem report which received.
2. Service Desk can make a report to know the number of received reports.
3. The reports that coming from customer and has been forwarded to technical support team can be monitored by service desk.
4. The response to incoming reports more quickly and according to customer expectation.
5. PT BSI has been able to follow the processes based on the ITIL framework.
6. Service Desk has been able to save the new information or new knowledge because they have their database called the Knowledge Database.
7. Service Desk easier to doing the incident escalation process.

REFERENCES