

Evaluating Hotel Technology Service Management via ITIL Practice for Incident Response Enhancements

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Abstract. This study analyzed IT service incident patterns in an Indonesian hotel using ITIL frameworks. Qualitative data from stakeholder interviews and ticketing repositories revealed frequent network disruptions and vendor-dependencies, with average resolution times of 1-1.5 hours for high priority infrastructure events. Only 69% of incidents met prescribed response benchmarks. Key deficiencies around solution knowledge, communications and monitoring were identified. Tailoring ITIL service transition practices through capability building, streamlining channels, and automating tracking is projected to strengthen responsiveness. Beyond remediation, proactive alignments to preempt problems and balance stability with innovation can enhance hospitality technology governance.

Keywords: Incident Management, Problem Management, Service management, ITIL V3

1. Introduction

Current developments in information technology have a central role in advancing the Company's business goals by simplifying business activities and processes. (Pratama & Sutabri, n.d.) In increasing the effectiveness and efficiency of a company, the role of IT is a top priority to focus on customer satisfaction, which causes IT services to be crucial in supporting the business success of a company (Peliarachchi & Wijayanayake, 2023). A company needs to make changes by changing information technology. One of the success factors of a company is assessed by the success of implementing information technology in the company (Alison Cartlidge et al., 2013).

In this era, carrying out analysis is very necessary for a company to improve technological information, which has an impact on a company's work performance. The company uses the Visual Hotel Program (VHP) application as the main capital in a process that occurs in the Hotel Vertu. All problems that occur will be recorded in the database and can be used as an evaluation by IT. Within one year, VHP itself experienced several problems that disrupted the check-in-check-out process.

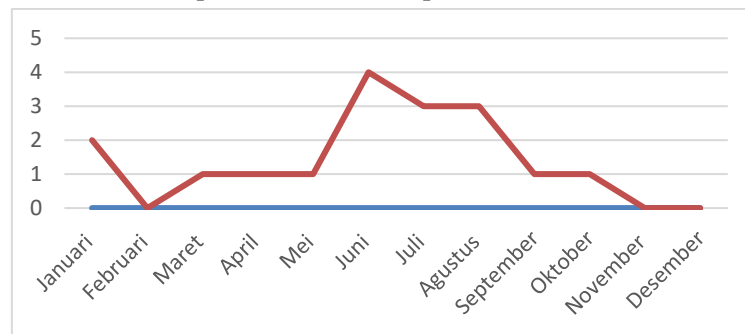


Fig.1: Problem Graphics in Hotel System

Source: Hotel Observation

Problems that occurred with the main system increased in June due to inadequate connections and problems with the Internet Service Provider (ISP) and network. The problems that occur are minor, but these minor problems make every process that occurs longer and more time-consuming (Thanamateet et al., 2023).

This research aims to evaluate one of the services of a hotel which is an agency that operates in the field of room accommodation services. Processes in hotels that are often carried out include making a room reservation before making a transaction. This hotel has implemented a room booking service which can be done online via the application or via WhatsApp which can be answered directly by hotel customer service and on the spot which can be done in the front office department. Problems that occur in the front office include problems with software that cannot be accessed, hardware that is no longer supported, and network problems (Soumeru et al., 2016).

This problem has a negative impact which indirectly disrupts the running of a process within the Company. The problems that are faced repeatedly when the hotel is in peak season have not yet found the right solution to overcome the problems faced by the Company. So, by evaluating the information system used in the customer service process, the focus must be on finding out the causes of existing problems (Cemerlang et al., 2023).

Using the ITIL V3 framework which contains incident management and problem management domains which are best practices and produce correct information technology service changes, a company will have solutions to various types of services that will cause information technology problems in the future (Adriansyah Ekaadana et al., n.d.) .

2. Literature Review

2.1. ITIL

ITIL or what can be called the Information Technology Infrastructure Library is an ITSM framework which is IT Service Management that aims to support an organization in managing information technology services, this service is recognized throughout the world as an information technology management service model for all categories of organizations (Ernawati & Wang, 2023). The benefits of implementing ITIL for organizations are as follows:

- Minimize expenses that occur due to reduced repetitive work.
- Shorten the time for new service launches.
- Decision making becomes more precise.
- Service availability has increased.
- User satisfaction in using IT services has increased.

Within the ITIL framework, ITIL provides a structure in the form of a life cycle which can be seen in Figure 2. This form simplifies every existing IT process and function. There are 5 Service processes in the ITIL framework:

- Service Strategy

This is a stage used in making practical decisions and in this service strategy cycle, it will define the role and needs of IT.

- Service Design.

This is a stage in the form of a blueprint for an IT service. At this stage, IT services are designed in such a way as meet business needs and keep up with the costs that will be incurred.

- Service transition.

This is a stage that will ensure that each IT infrastructure can respond well to changes that occur.

- Service operations.

The stage where services will be provided more responsive and stably.

- Continuous service improvement

The stages that will be monitored are measured in terms of quality and cost. At this stage, you will identify areas that will be improved while looking at the quality of the changes that have been made.

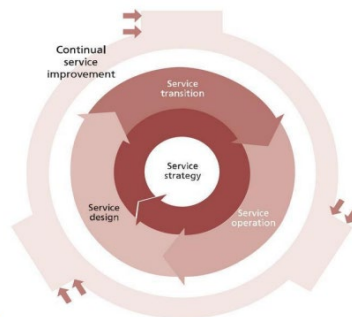


Fig.2: ITSM Lifecycle

(Iqbal & Nieves, 2011)

2.2. IT Service Management

ITSM (IT Service Management) is a framework that focuses on the implementation and management of Information Technology services. ITSM is carried out through the right mix of people, processes, and information technology provided by each IT service provider (Iqbal & Nieves, 2011).

In increasing user satisfaction, service must be given great attention. To increase user satisfaction many things often create chaos, plus increasing demand as time goes by and companies that still don't follow

the things that matter (Universitas Bina Nusantara et al., 2017).

Standards for implementing ITSM usually use ITIL v3, Control Objective for Information and Related Technology (COBIT), Six Sigma, eTOM, and SOX. Each framework has its advantages and disadvantages.

2.3. Domain Service Operations

Service Operation is a service that has been agreed upon by users and customers to manage applications, technology, and infrastructure that supports a service process (Cartlidge, 2012). Service operations have something important with the aim of balancing them so that they do not conflict with each other (Cartlidge, 2012):

1. Internal IT Team view with an external business view.
2. Stability with response capability.
3. Quality of service with service costs.
4. Reactive and proactive activities.

Many organizations that use this system find it helpful because by using Service Operation, the health of operational staff is taken into consideration.

2.4. Incident Management

An incident is an unplanned disruption and reduction in the quality of an IT service. A failure in any configuration process is an IT service incident (Cartlidge, 2012)

Incidents like this cause interruptions, disturbances, or a decrease in the quality of IT services which will impact the business processes that occur. Each incident that occurs must have a different category so that it is easy to handle and analyze existing problems (Iqbal & Nieves, 2011).

It is very important that every incident that occurs must always be recorded and recorded to create an SLA and can be reported correctly and appropriately (Doherty, 2010).

Incident management will be tasked with returning services to normal as quickly as possible and minimizing the negative impact on other business processes (Cartlidge, 2012) .

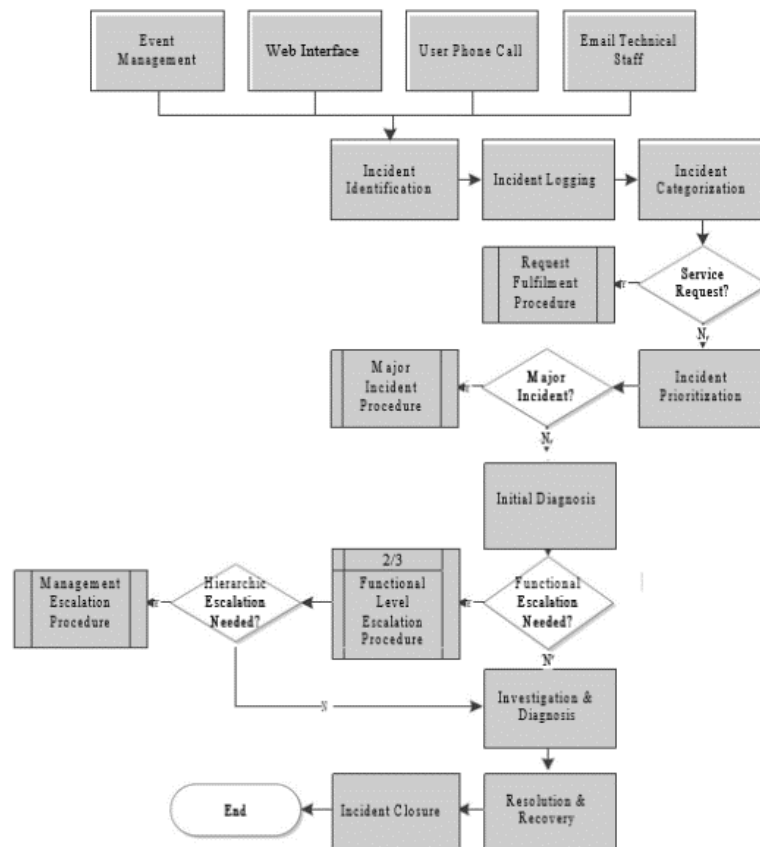


Fig.3: Incident Management Business Processes(Iqbal & Nieves, 2011)

In most cases, incidents will be logged by the Service Desk function, which should log all incidents to ensure compliance with SLAs can be reported correctly. The nature of the incident will determine who or what reports it to. Of course, users should have the facility to report incidents quickly and easily, supplying all information to frontline analysts. A truly effective reporting function, however, must allow the system itself to automatically record incidents as they occur (Doherty, 2010).

2.5. Problem management

Problem management is a process that is within the Service Operation domain. In this process, problem management functions to minimize problems that will impact business conditions and reduce the availability and performance of technology infrastructure (Cisco Systems, 2007). There are several benefits of problem management such as improving service delivery, reducing the number of problems, creating permanent solutions, decreasing support costs, decreasing time to resolve problems, and increasing productivity. There are benefits for companies that use domain problem management as follows:

- Improved service availability
- Improved service quality
- Decreased problem resolution time
- Reduction in the number of incidents
- Increased productivity
- Cost reduction
- Increased customer satisfaction

3. Methodology

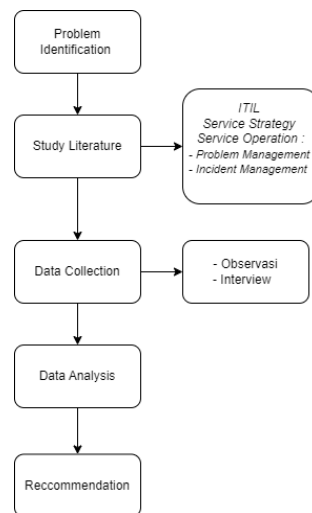


Fig.4: Research Stages

The method used in this research consists of five stages, namely: Problem Formulation, Literature Study, Data Collection, Data Analysis, and Recommendations. The following is an explanation of each stage that will be used in this research.

a) Problem Identification

The initial stage in research is formulating the problem. At this stage, researchers must identify and formulate the problem to be addressed to obtain appropriate and maximum results.

b) Literature study

The next step is a literature study which has many benefits in finding a suitable method for the problem obtained. Literature study using the ITIL method which discusses Service Strategy. Service Strategy has 3 domains including Service Design, Service Operation, and Service Transition. At this research stage, we will use service operations that contain problem management and incident management

c) Data collection

The next step is to collect the data to be processed. The data that will be used in this research will be divided into 2 ways, first observation and second interview. The interviews carried out will consist of asking questions to resource persons who are competent in their fields, by conducting questions and answers conducted verbally and face to face with the resource person. The interview process was carried out on several people including the General Manager, IT Manager, IT Supervisor, Front Office Manager, and Front Office Staff with a total of 8 people. Observation is a data collection technique that is carried out by directly viewing the object to be studied and with the approval of the object to be studied. The object studied was the hotel where the researcher interned.

d) Data analysis

This stage is the method that will be used to sort the data to be processed. The analysis is carried out to produce data that we will use according to the problems we will discuss to produce appropriate recommendations. The technique I use is content analysis which involves analyzing the contents of collected documents to identify emerging meanings and can be used to analyze interviews, field notes, certain written documents.

e) Recommendations

The final stage is where researchers will obtain solutions from data that has gone through a data analysis process which will be used by the hotel to make future improvements.

4. Result and Discussion

4.1. Data collection

This research will use 2 ways to collect data:

4.1.1. Interview

First, observations and interviews were used to gather data. Several outputs are generated at this stage in the form of data required for the study. Table 4.1 contains information about Hotel Vertu's vision and mission.

Table 1. Vertu Hotel Vision and Mission

Vision	Mission
to be a leading company that enriches people and communities through high-quality real estate products and services	1. Cultivate high-performing individuals and groups via fulfilling opportunities 2. Creating exceptional customer value and experiences through high-quality products and services. 3. Care about and contribute to the economic, environmental and social development of society. 4. Share sustainable shareholder returns and build a strong global network of capital partners.

Vertu Hotels have an organizational structure, as shown in Figure 4.1, according to the interviews that were conducted. There are managers in charge of the Front Office and IT departments who are also accountable to the General Manager.

The General manager holds the highest position of authority in the hotel organizational structure. The general manager has the responsibility to oversee all IT services that benefit the hotel's staff and visitors. The roles and responsibilities of each manager interviewed are listed below.

Table 2. Duties and Responsibilities

Position	Duties and Responsibilities
General Manager	1. Oversee all operational aspects of the hotel starting from guest service, cleanliness, security, hotel facilities. 2. Responsible for achieving the hotel's financial and profit targets. 3. Recruit, train and manage hotel staff. 4. Ensure customer service is at the highest level to maintain the hotel's reputation. 5. Ensure that every soup in the hotel is done well. 6. Handle hotel expansion or renovation. 7. Conduct meetings with managers effectively. 8. Build and maintain relationships with surrounding hotels. 9. Ensure that every IT system and other technology supports hotel operations. 10. Identify and implement technological innovations that can increase efficiency.
Front Office	1. Recruit, train staff in the check-in and check-out process to ensure a positive guest experience. 2. Ensure that room reservations are carried out optimally. 3. Respond to guest complaints quickly and provide solutions. 4. Prepare reports on guest payments. 5. Ensure room availability. 6. Ensure that every staff can use the reservation operating system. 7. Analyze the performance of the front office department.

	8. Carry out maintenance on the devices used. 9. Ensure that each staff complies with the established SOP. 10. Ensure guest service is according to sop.
IT Manager	1. IT infrastructure management. planning, implementing and selecting hotel infrastructure. 2. Protect data from guests and information from the Company. 3. Involved in IT project software implementation. 4. Provide Engineering support to hotel employees. 5. Manage system and application integration for efficient work processes. 6. Responsible for the budget issued by the IT department. 7. Measuring and evaluating the performance of the IT system. 8. Conduct training and development for hotel staff regarding IT developments. 9. Vendor management. 10. Guiding and managing the team including employee development and recruitment.

4.1.2. Observation

Observations were made in the front office department and IT department. The results of the observations are as follows:

- Every incident that occurs has been specifically recorded in the front office
- The incident has not been completely resolved
- The incident priority scale and appropriate handling have not been implemented
- The following is an explanation of the priority table:

1. Customer

Customers are people who use and buy services provided by hotels. In this case, customers consist of meeting room guests, restaurant guests, wedding guests, room guests. every customer who uses IT services at the hotel.

2. Impact

The impact can be divided from low to high. The following is a breakdown of the impact itself:

- Low: there are services experiencing problems but the process can still run.
- Moderate: problems occur simultaneously but the disturbances that occur can still be overcome.
- High: all IT service users experience disruptions that cause all processes to stop

3. Incident category

There are categories of undesirable incidents in IT services that will cause the quality of IT services to decline. Failure of hardware and software used in the process of running a business is an incident. The following is a table of categories for each problem ticket:

Table 3. Total Ticket

Category	Sub Category	Total Ticket
ISP Down	Connection to Internet	2
Customer complain	Connection to Internet	4
	Network Priority	5
Trouble in DNS	DNS Link Down	2
Server Down	Vhp Down	4
Total		12

Based on observation conducted, it is known that there are several problems with the services provided to guests

Table 4. Service Problem Data

No	Incident	Impact	PIC
1.	Network disruption	1. The system cannot operate 2. The application cannot be accessed 3. The website cannot be accessed	IT Manager
	Power outage	operational process stops	
	Server down	Unable to start the system	
	Hardware damage	Tool cannot be used	
	Computer has a virus	The computer hangs and is slow	
2.	Database down	Cannot run application	Vendor dan IT manager

4.2. Data Analysis

ITIL incident management matrix This matrix is used to review each incident management process and the effectiveness of each treatment carried out in responding to incidents. A total of 12 tickets that occurred in the period January 2023-December 2023 will be validated to determine the solutions that will be implemented to improve each existing process in incident management.

The following is a component analysis of the company:

Table 5. Target

Category	Summary	
	Within Target	Exceed Target
ISP Down	2	0
Customer Complain	9	1
Trouble in DNS	2	0
Server Down	4	2

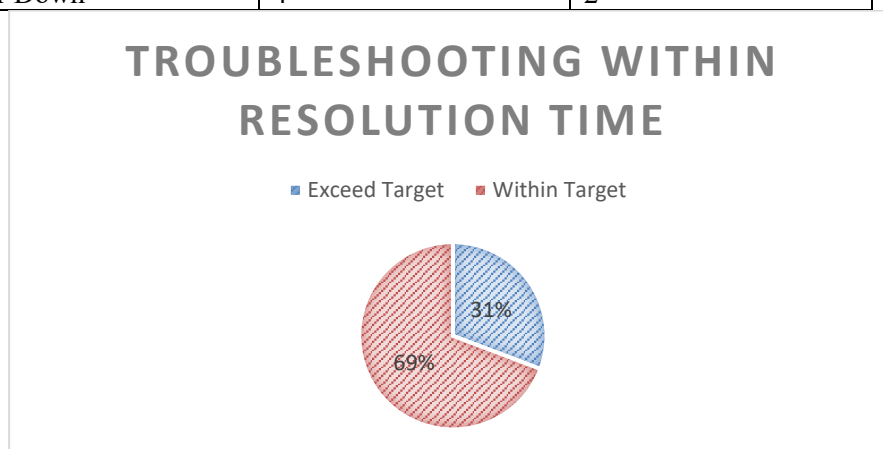


Fig.5: Troubleshooting Within Resolution Time

Next, we calculate the average time needed to solve the problem that occurs using the following

formula:

$$\text{AverageDur}(t, \text{Priority}) = \frac{\sum \text{Dur}(\text{TT}(t, \text{Priority}))}{\text{Total\# Of TT}(t, \text{Priority})}$$

Description:

TT (t, Priority): Which priority problem matches the Priority and is submitted within a certain time period.

Dur (TT (t, Priority)): The duration from the Issue being submitted until it is closed or rejected.

The result:

- ISP Down

Category	Time Average (HH:MM)	Time Priority	Result
Connection To internet	00:30	01:00	0,5

- Customer Complain

Category	Time Average (HH:MM)	Time Priority	Result
Cant connect to internet	01:10	01:00	1,1
Network priority	00:45	01:00	0,75

- Trouble in DNS

Category	Time Average (HH:MM)	Time Priority	Result
DNS Link Down	00:50	01:00	0,83

- Server Down

Category	Time Average (HH:MM)	Time Priority	Result
Server down	01:35	01:00	1,58

From the results above, there are 2 categories that have not met the time priority that has been set and only 3 categories have met the time priority. Internet problems were resolved very quickly with the help of vendors and support from the hotel. For problems with customers who complain, such as not being able to connect to the internet, it can take quite a long time because it's not just one person who experiences this problem. Then the server down which takes the longest time is due to the internet connection experiencing problems and must be tracked one by one to find out the existing problems.

4.3. Recommendation

There are several recommendations that can be given to implement incident management in hotels as follows:

- The IT department and vendors work together to carry out in-depth analysis to overcome existing problems
- Create incident categories that are more detailed and in accordance with hotel requirements.
- Conduct training for each department to share knowledge and skills to identify problems that occur.
- Set a time to respond to a problem that suddenly arises.
- Ensure communication lines between departments are clear and effective.
- Carry out performance evaluations to continue making continuous improvements.

5. Conclusion

This preliminary diagnostic assessment of hotel IT service performance using ITIL practices provides useful grounding regarding persisting incident response gaps undermining availability and agility. While only illustrative currently, the evidence indicates sizable vulnerabilities from fragmented technology-business perspectives, skill shortages and data deficits. Holistic roadmaps co-created across functions can systematically uplift integrated preparedness. Beyond basic compliance checklists, purposeful IT management in hospitality warrants nurturing collaborative cultures constantly attuned to emerging risks and opportunities. As digital touches magnify amidst flux, resilient futures call for human-centered stewardship fortified by ethical compass rather than mere mechanistic rituals. Far from panaceas, frameworks like ITIL can channel progress when incarnated inclusively.

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