Examining IT Service Management at Company XYZ through the Lens of ITIL V3 Service Operation Domain

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Abstract

The rapid development of information technology and good technology services is an expectation for all people, organisations, institutions, and universities in order to support activities, facilitate their activities and business processes. A business organisation needs to adapt to the current development of information technology. IT service management is a method of managing information technology systems that is centred on the consumer perspective of information technology services on the company's business. Company XYZ has implemented information technology that is intended for users to be able to carry out service management activities as well as processing company administrative data. Service Operation is a lifecycle phase that includes all the day-to-day operations of IT service management. Based on the results of research on 3 processes, namely Event Management, Request Fulfilment and Problem Management, it is necessary to increase the need for adequate hardware, software and infrastructure in meeting the needs of Company XYZ in working more effectively. Then the need for proper application of SOPs and modules to employees is somewhat more efficient in using information technology.

Keywords: ITIL, Service, Management, Information Technology, Service Operation

1. Introduction

The rapid development of information technology and good technology services is an expectation for all people, organisations, institutions, and universities in order to support activities, facilitate their activities and business processes [1]. With the existence of technology, basically it is to make it easier for humans to do things. This information technology has been widely used to process, process data, analyse data to produce relevant, fast, clear, and accurate data or information [2]. The utilisation of technology strongly supports the objectives of education so that it must be considered efficient use of resources and risk management. In fact, dependence on information technology to achieve strategic goals and organisational needs is a major driver because it can increase productivity, making business processes effective and efficient [3].

A business organisation needs to adapt to the development of information technology that exists today. Information technology is currently a new aspect which itself is one of the success factors or the success of a company or agency. [4]. Information technology used by humans to work with information and support the information needs of organisational processes and information. Information technology used by people to work with information and support the information needs of an organisation [5].

The orientation of the use of information technology should be on services that are in line with the vision and mission of the organisation. In reality, information technology is not only limited to application, but there must also be information technology service management which serves as a guide to align information technology with organisational goals in order to provide added value [6]. The purpose of the IT Audit is to measure the maturity level

of information technology services at PT. XYZ and provide recommendations if the maturity value is below the target expected by PT. XYZ itself [7].

IT service management is a method of managing information technology systems that is centred on the consumer perspective of information technology services on the company's business [7]. There are 5 main processes in IT service management, namely service agreement management, service design and development, service delivery management, service issue management, and service improvement [8]. These processes run according to the framework for managing IT services, namely the Information Technology Infrastructure Library (ITIL) [9].

PT. XYZ has implemented information technology that is intended for users to be able to carry out service management activities and processing company administrative data. However, in its use, it is not uncommon for problems to occur from the application of Information Technology which can have a negative impact on the company. The problems faced continue to recur and the problems faced are always the same and have not yet found a solution to overcome these problems.

Based on these problems, this research will analyze Information Technology (IT) service management using the ITIL V3 Framework at PT. XYZ. The application of this framework is considered appropriate because the main topic in the problem is about services to Information Technology. This research tries to focus on the Service Operation Domain, because this domain includes all daily operational activities of IT service management so that it can be seen to what extent [10].

One of the related studies that became the reference for the author to conduct this research is the Maturity Level Analysis in Blended Learning in the Itil V3 Framework Service Operation Domain. The results of this study are in the form of maturity levels in the Service Operation domain of the ITIL V3 framework and recommendations from measurements that have been taken [11]. Meanwhile, research on the Analysis of Information Technology Service Management System at PT Dunia Boga Indonesia Referring to ITIL V3 Domain Service Operation Process Incident Management, Problem Management. The methods used are interviews and observations, with the results in the form of recommendations based on the main foundation of IT service management, SOPs for the Incident Management and Problem Management processes [12]. It is hoped that this research can help the company, especially PT. XYZ in managing information technology services applied to the company.

2. Literature Review

2.1. Service Operation on ITIL

ITIL, or Information Technology Infrastructure Library, is a structured framework used by organizations to manage their IT services [12]. Within the Service Operation domain of ITIL, the primary focus is on the execution and management of IT services after they have been developed and implemented. This involves a number of critical processes designed to ensure the availability, reliability, and high performance of IT services. One key aspect in Service Operation is event management [13]. This process involves monitoring and detecting events in the IT environment that can impact services. The goal is to promptly respond to changes or incidents that may disrupt normal operations. By understanding events, organizations can identify and address issues more efficiently. Another crucial process in Service Operation is incident management. This involves a rapid response to service disruptions and the restoration of normal operations as quickly as possible. Incident response teams are responsible for identifying the root cause of the problem, minimizing its impact, and restoring services in accordance with predefined service levels. Request management is another part of Service Operation that handles service requests from end-users. This includes permissions granting, issue reporting, and minor changes to services. This process helps improve user satisfaction and operational efficiency by handling requests in a structured manner.

Access management also plays a key role in Service Operation. This process ensures that only authorized individuals can access specific services or information [13][14]. It helps protect the security and integrity of data, as well as comply with organizational security policies. In order to continually enhance IT services, Service Operation also involves a continual improvement process that enables organizations to evaluate and improve the efficiency and effectiveness of

their services. By leveraging ITIL in the Service Operation domain, organizations can ensure that their IT services run smoothly, are responsive to changes, and consistently deliver added value to end-users.

3. Methodology

Research methods are techniques or ways that are arranged regularly used by researchers to collect information and data in conducting research that is tailored to the object or subject under study. This research uses an inductive approach that describes the problems that occur based on existing facts and then analysed so that the problem point can be found and then recommendations are given and conclusions are drawn.

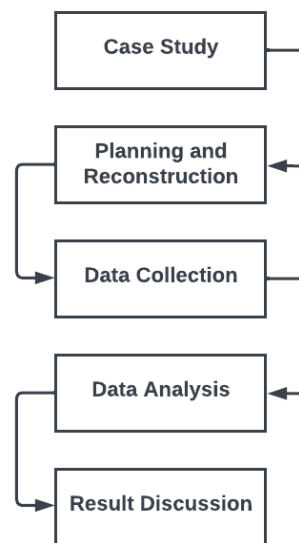### 3.1. Research Design

Figure. 1. Research Steps

The research stages are as follows:

1) Introduction at this stage the author identifies the problems that occur in information technology services owned by PT. XYZ. As well as researchers collecting research references to research conducted by the author.
2) The next stage the author designs and plans what will be carried out in the research Analysis of Information Technology Service Management Using Itil V3 Domain Service Operation at the PT. XYZ. Peneltii also collected a list of questions that would be submitted to respondents related to the research.
3) The next process is that the researcher starts collecting data from the draft questions that have been distributed in the previous phase.
4) The next process of analyzing data collected from interviews and observations will be analysed and processed using the ITIL V3 framework with the Service Operation domain as a reference for analysing the problems faced and how to handle each problem.
5) In this phase and stage, the process of making and compiling findings and recommendations in accordance with the results of data processing and analysis in the previous process is carried out. So it is hoped that the recommendations can help to improve performance and increase system effectiveness and efficiency.

3.2. ITIL V3

The Information Technology Infrastructure Library (ITIL V3) is a set of concepts and practices for managing Office Of Government Commerce (OGC) information technology services, development, and operations. ITIL gives a very detailed description of a number of important information technology practices and provides a comprehensive list of tasks and procedures within which each organisation can adapt to its own needs. The purpose of ITIL itself is to improve efficiency and achieve the services planned by the company [15][16].

On 30 June 2007, the OGC released ITIL V3 which basically consists of five parts, and a system that places more emphasis on managing the life cycle of services provided by information technology. The five parts are: Service Strategy provides guidance to ITSM implementers on how to view the ITSM concept as more than just an organizational capability (delivering, managing, and operating technology services), but also a strategic asset of the company. The guide is presented in the form of the basics of the ITSM concept, and the basic processes that work across all phases of the ITIL service lifecycle. Topics covered in this phase of the life cycle include market formation for service sales, types and characteristics of internal and external service providers, service assets, portfolio of service concepts and strategies, and implementation of the full ITIL service lifecycle.

3.3. Service Operation Domain

Service Operation is the lifecycle phase that covers all the day-to-day operations of IT service management. It contains various guidelines on how to manage IT services efficiently and effectively while ensuring pre-agreed performance levels with customers. The guidelines explain how to keep IT services up and running and manage changes to the design, scale, scope, and performance of IT services [17][18].

Service Operation also has the responsibility of operating and keeping IT services alive and is expected to work according to user or customer needs. The purpose of Service Operation is to coordinate and carry out the processes or activities needed to provide IT services to users and customers. The existence of Service Operation can provide a guide by which IT services can be managed efficiently and effectively, and ensure agreed performance improvements [19][20].

4. Results and Discussion

The development of technology has now reached a very sophisticated globalisation so that it can support various activities in an organisation or corporate agency in solving various problems.The use of technology in an organisation or company has brought many changes in various aspects such as structure, authority, power, job duties, employee career paths, supervision, and manager jobs.This research was conducted with reference to the ITIL V3 framework service operation domain. The use of the service operation domain because service operation describes the standards for performing IT service management including all operational activities for managing IT services effectively and efficiently.Determination of the level of maturity is calculated based on the analysis of the interview on each subdomain obtained from the average of each subdomain referring to the results of the interview.For a description of the maturity level of all levels can be seen in Table 1.

Table 1. ITIL Maturity Model

Stage	Description
Level 0 (Non Existent)	1) Absolutely no IT processes were identified. 2) The company has not recognised any issues that should be addressed
Level 1 (Initial)	1) The company has started to recognise the information technology process in its company. 2) There is no standardisation, it is done individually, and it is not organised. 3) There is evidence that the company has recognised the issues that need to be addressed. 4) Whole-of-management approach. There is no standardised process; instead there is an adhoc approach that tends to be applied on a case-by-case basis.
Level 2 (Repeatable)	1) The company has begun to have procedures for information technology processes but there is no formal training and communication about these standardised procedures. 2) Responsibility for the process is still assigned to individuals and the level of dependence on individual abilities is very large, resulting in errors.

Level 3 (Defined Process)	1) Procedures in the company are standardised, documented and communicated through training but implementation still depends on individuals whether they want to follow the procedures or not. 2) The procedures are not complicated, just a formalisation of existing activities.
Level 4 (Managed and Measurable)	1) The company can measure and monitor existing procedures so that they can be easily overcome if deviations occur. 2) Existing processes are well-established and constant 3) Automation and information technology tools used are limited
Level 5 (Optimized)	1) Existing processes have achieved best practice through a process of continuous improvement 2) Information technology that has been used is integrated to automate work processes within the company, improve quality, effectiveness, and adaptability to the company.

4.1. Service Operation Event Management

Event management is the change of a condition that has meaning for the management of configuration items in IT services. This process will detect notifications, while monitoring checks the status of a component even when no events occur.

Based on the results of the analysis based on service operation event management, it is known that network requirements from the internet are needed because to support effective performance activities, an adequate connection is needed. Based on the results of surveys and interviews at PT. XYZ, improving network connections needs to be done because several times there have been delays in the data transfer process which can cause losses to the company.

4.2. Service Operation Request Fulfilment

Request fulfilment is a condition of user requests to be able to make requests to develop services, information, suggestions for changes to standards, or for access to IT services that need to be arranged. The purpose of request fulfilment is to standardise users in receiving and receiving services related to the implementation of information technology service management at PT. XYZ

Based on the results of surveys and interviews at PT. XYZ it is known that there is a request for service improvement on information technology used both physically and non-physically. From a physical point of view, improvements need to be made to hardware and network infrastructure so that employee performance is more effective. While the non-physical maintenance is needed on the current system such as enlarging storage memory and adding features that have not been there.

4.3. Service Operation Problem Management

Problem management here is a condition that causes an incident or several incidents due to use by the user. The purpose of problem management is to minimise or prevent an incident and its consequences, so that incidents that occur are not repeated and can be handled properly.

Based on the results of surveys and interviews at PT. XYZ found problems from problem management, such as in the use of an information technology either old or new, the company sometimes forgets to provide explanations or modules for implementing information technology to employees. This can make the company's performance ineffective.

4.4. Research Result

From the observations made, it was found that the existing organisational structure at PT. XYZ still has many problems in information technology management services. From the application of the system, it is still not uncommon to be ignored and prefer to do it manually because there are still problems that are often faced from the application of the information system. From the data collection carried out, a mapping related to the problems faced can be seen in table 2.

Table 2. Problem Mapping

No	Problems	Domain Category
1	The company's network and bandwidth needs to be increased	Event Management
2	Increased hardware and infrastructure requirements	Request Fulfilment
3	Inadequate hardware	Problem Management
4	Human resources that lack socialization in the application of information technology	Problem Management

This recommendation is made by analyzing the results of the calculations that have been carried out. From several domains that were analyzed, the most beautiful score was sought and then traced to statements and questions related to the domain, so that several recommendations were obtained from the calculation results.

5. Conclusion

Based on the results of data collection carried out by interview and observation methods, it can be concluded that Management of IT Services carried out has not been carried out properly and accordingly. Management of existing problems cannot be resolved and given a definite solution so that the problem continues to recur which has a negative effect on the implementation of operational activities at PT. XYZ. When associated with the ITIL V3 Framework, the Service Operation Domain is considered the most appropriate with the application of 3 processes, namely Event Management, Request Fulfilment and Problem Management. PT. XYZ has not been able to properly manage incidents and problems faced which can be seen from the handling of problems that run slowly, the absence of competent human resources in their fields in providing solutions and overcoming problems faced and the absence of SOPs or policies set regarding procedures for IT-related management.

Based on the results of research on 3 processes, namely Event Management, Request Fulfilment and Problem Management, it is necessary to increase the need for adequate hardware, software and infrastructure in meeting the needs of PT. XYZ in working more effectively. Then the need for proper application of SOPs and modules to employees is somewhat more efficient in using information technology.

6. Declarations

6.1. Author Contributions

Conceptualization: WGMM, DR, RS, WDP, FM, ANA, and NJ; Methodology: DR; Software: WGMM; Validation: WGMM, DR, RS, WDP, FM, ANA, and NJ; Formal Analysis: WGMM, DR, RS, WDP, FM, ANA, and NJ; Investigation: WGMM; Resources: RS; Data Curation: RS; Writing Original Draft Preparation: WGMM, DR, RS, WDP, FM, ANA, and NJ; Writing Review and Editing: RS, WGMM, and DR; Visualization: WGMM. All authors have read and agreed to the published version of the manuscript.

6.2. Data Availability Statement

The data presented in this study are available on request from the corresponding author.

6.3. Funding

6.4. Institutional Review Board Statement

Not applicable.

6.5. Informed Consent Statement

Not applicable.

6.6. Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper

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