

## Towards Superior Banking Services: Examining Service Strategies and Service Operations Using ITIL as Framework

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### ABSTRACT

The implementation of Service Strategy and Service Operation in the banking industry is a key element to improve the quality of information technology (IT) services, strengthening customer satisfaction, and achieve business goals. This research involved analysis of eleven journals that showcased ITIL implementations in the context of financial institutions, highlighting the challenges, solutions, and benefits gained. The findings show that banks have implemented Service Strategy in their operations, as well as using ITIL as a framework. However, there is still room for improvement, such as more regular evaluations. Each bank has unique challenges and opportunities that affect their Service Operation implementations. With a commitment to continuous improvement, banks can continue to improve the quality of IT services, increasing customer satisfaction.

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### 1. INTRODUCTION

The application of information technology in this day and age has undergone evolution and change in its role. Now IT is not only considered as a supporting tool for data processing and process automation, but also as an influential tool in determining organizational strategy [1], [2], [3] and also building online system infrastructure in the digital world [4]. The rapid growth of information technology has changed almost all aspects of human life [5] and the banking industry is no exception [7]. Modern banking depends not only on a robust IT infrastructure, but also on the ability to deliver high-quality IT services to customers [6], [7]. Along with this need, the need for effective and efficient IT service management is also increasingly urgent[8], [9]. ITIL or Information Technology Infrastructure Library framework has been widely recognized as the leading framework in IT service management [10], [11]. ITIL provides a structured and tested set of best practices for planning, delivering, and managing IT services to meet business and customer needs [10], [12]. Therefore, ITIL can be considered as a design of concepts and techniques for managing, developing and operating IT infrastructure [13]. By implementing ITIL, it is expected that the quality of IT service support can be managed properly so that businesses can run in line with existing IT and infrastructure functions[14]. ITIL also enables all IT service providers to do execute better IT service delivery [15].

ITIL consists of five sub-domains, namely Service Strategy, service design, service transition, Service Operation, and continual service improvement [16], [17], [18][19]. There are many benefits that can be derived

from ITIL implementation: increased user and customer satisfaction with IT services, improved service availability, direct improvements to business profitability and revenue, financial savings through reduced rework and wasted time, improved efficiency of resource usage, accelerating the time for new products marketing and services, improving decision-making processes, and optimizing risk management [20], [21], [22].

ITIL which drives innovation and change in a company according to [23] is best adopted to increase customer satisfaction by being customer oriented. It could also improve the internal processes by increasing employee participation which will also make performance more efficient and standardizing work processes to achieve adequate quality levels [24].

In the context of the banking industry, where intense competition and evolving customer needs are top priorities, it is important for banks to adopt a systematic and strategic approach to their IT service managements [25], [26]. One of the most relevant approaches is by applying Service Strategy which is one of the five components of the ITIL framework [27], [28], [29].

The application of Service Strategy to IT services in banking provides a targeted approach to planning and developing portfolio of services that aligns with the bank's strategic objectives, while ensuring that optimal business value could be obtained from IT investments [30]. By focusing on the deep understanding of business needs and customers, as well as a careful analysis of required services, Service Strategy helps banks to direct their investments more efficiently and optimizes the use of resources.

One of the research's focuses is the Service Strategy domain. Service Strategy is at a market-driven stage or can be referred to as a guide in an institution to determine the types of services that should be presented, and the strategies used in reaching certain markets. The purpose of a Service Strategy is to make strategic decisions when planning and providing services to drive long-term growth and success within an agency or organization. Through the implementation of Service Strategy, banks can improve the responsiveness, flexibility, and quality of their IT services, which in turn will increase customer satisfaction, strengthen brand image, and create a competitive advantage. Hence, the study of Service Strategy implementation is about how banks can improve their IT service management to achieve greater business goals [31]. There are 5 processes involved in the Service Strategy catalog, namely: generating strategy, demand management, financial management, service portfolio management, and business relationship management [32], [33], [34].

Generating strategy is a series of activities to formulate an IT Service Strategy so that it can become a strategic asset for an organization or institution which can be a vision, mission, or goal in IT service development. Demand management is useful for understanding IT service demand patterns with the aim of anticipating and influencing customer demand patterns to make sure that IT services always meet the needs of all users within its capacity, ensuring the quality of IT services by analyzing the business activity patterns and user profiles. Financial management is concerned with calculating and ensuring the availability of IT services within the available budget, by building a cost model that fits the existing business case. Service portfolio management is the process of determining IT services based on IT investment considerations and meeting the business needs of the organization or institution. Meanwhile, business relationship management is the process of building good relationships between IT service providers and customers by recognizing customer needs and ensuring IT service providers can accommodate to changing business needs according to customer's demand.

After Service Strategy, Service Operation is also an important part of the IT service lifecycle according to ITIL. It covers the practices required to run and manage IT services on a day-to-day basis to keep them running in line with business and customer needs. There are also 5 processes to Service Operation which are as mentioned: event management, incident management, request fulfilment, problem management and access management, which all play a role in maintaining the quality and availability of IT services [35].

Quoting one previous research about the implementation of Service Operation, the importance of understanding the various aspects of such implementation was explained [36]. Problems that arise in IT services are not only influenced by internal, but also external factors. One of them is that optimal IT services depend on users' understanding of how to use them. In addition, by using ITIL as guideline, following the acceptable standard is a must to avoid preventable problems.

Therefore, a sufficient understanding of Service Strategy and operational strategy is required to help banks improve the effectiveness and efficiency of their IT services, thereby creating customer satisfaction and improving overall performance.

## 2. METHOD

The technique used in collecting data in this research is literature study. This method carries out searching and collecting data from the literature relevant to the research topic. The literature used as a source of information can be in the form of books, archives, magazines, articles, scientific journals, papers, reports, or documents available online [37], [37]. The literature review process includes several steps [38], [39] which are:

1. Identify the problem or research topic to be researched.
2. Search for various sources of information relevant to the topic.
3. Read and evaluate the sources of information found.
4. Analyze and compare evaluation results from various sources of information
5. Develop and write a paper based on the findings and analysis.

The steps of the research conducted in this journal are reflected in the flow shown in the figure. The flow illustrates the process of conducting research from beginning to end.

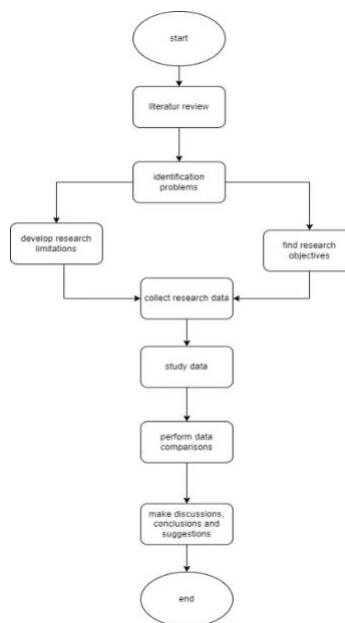


Figure 1. Overview of Research Method Flow

Discussion of figure 1 above:

1. **Literature review:** This is the first step, to search and monitor various sources of information which is relevant to the research topic, banking. The sources of information can be books, articles, scientific journals, papers, reports, or documents available online. This review is based on service strategies that exist in the banking and financial sector
2. **Identification problems:** Identify problems that need to be solved from the information that has already been found.
3. **Develop research limitations:** Analyze and compare evaluation results from various sources of information, then develop research boundaries and research objectives based on the results of data analysis.
4. **Find research objective:** Collect research data from evaluated sources of information by taking notes of information relevant to the research topic and research objectives.
5. **Study Data:** Study the research data that has been collected and identify the data to explain the content of the data used.
6. **Perform data comparisons:** Compare data from various sources of information by finding similarities and differences between the data and find logical conclusions.
7. **Make discussion, conclusions, and suggestions:** Facilitate discussions, come up with conclusions, and suggestions based on the results of data analysis by explaining the findings, implications of these findings, and suggestions for future research.

### 3. RESULTS AND DISCUSSION

#### 3.1. Service Strategy Implementation

In the implementation of Service Strategy, it describes each banking sector that implements the Service Strategy shown in the mapping of service portfolio management in the table below:

Table 1. Mapping of Service Strategy Management Coverage

CODE	INDEX
SS1	Introduction
SS2	Service Management as a Practice
SS3	Service Strategy Principles
SS4	Service Strategy
SS5	Service Economics
SS6	Strategy and Organization
SS7	Strategy, Tactics, Operation
SS8	Technology and Strategy
SS9	Challenges, Critical Success Factor

##### 3.1.1. Analisis Layanan Aplikasi Livin by Mandiri Menggunakan Framework ITIL V3

The first journal's title is Analisis Livin by Mandiri Application Service Analysis Using the ITIL V3 Framework [40]. Data collection is carried out by interviewing Mandiri bank's customers who actively use Mandiri's Livin application application by following the stages in ITIL V3. The result analysis shows that the bank's IT service quality is still inadequate.

1. There are several features that customers want for the Livin application which is not available yet.
2. The support service centre is also inadequate.

##### 3.1.2. Making IT Service Portfolio Documents at PT Bank Mandiri Taspen Kediri Branch Using Itil Framework Version 3, 2011 Edition

The second journal discusses about compiling IT Service Portfolio documents at PT Bank Mandiri Taspen Cabang Kediri using ITIL framework Version 3 Edition 2011 [41]. Data was collected through interview interactions with Ms. Fika, the General Affairs who observes business processes and identifies company goals using the balanced scorecard. The study analyzed 7 IT services, such as E-Customer Relationship Management, E-Helpdesk, E-Customer Administration, E-Finance, E-IT Requirement Planning, E-Supply, and E-Human Resource. And the results of the analysis show that service that need to be prioritized is E-Customer Relationship Management.

The evaluation of the company's Customer Relationship Management (CRM) Service Strategy resulted in the following findings:

1. Kediri Branch still does not have a structured system for handling customer complaints.
2. Planning, scheduling, and evaluation of socialization events for the bank are still poorly organized.
3. Prospective customers had difficulty in obtaining information about the socialization schedule, rendering the socialization efforts ineffective.

Documentation of customer complaints is not good enough which hinders the evaluation of the company's performance on CRM services.

##### 3.1.3. Analisis Sistem Informasi Perkreditan Menggunakan ITIL Version 3 Domain Service Strategy (Service Portfolio Management, Financial Management, dan Demand Management) di PT. Bank Rakyat Indonesia (Persero) Tbk., Unit Beteleme

Evaluation on the 3 Service Strategy processes implemented at BRI Unit Beteleme is based on the data processed from observations and interviews [42]:

1. Service Portfolio Management
  - SS1 Introduction dan SS2 Service Management as a Practice: Based on a survey distributed to BRI Unit Beteleme employees, the credit information system services is used to help the company become "The Best Bank in Indonesia" by adjusting lending rules based on business needs features and processes.
  - SS3 Service Strategy Principles: The procurement of a credit information system at BRI involves careful planning of resources and estimation of the benefits to be achieved within a certain time period.

The benefits achieved here include material benefits in the form of money and also intangible benefits such as increased effectiveness and efficiency of employee performance, customer satisfaction due to fast and accurate responses, and company satisfaction with the investment. To increase employee performance effectiveness and efficiency, is done by cutting off employees to reduce labor costs. Then it will be replaced with a systematic information system that will also facilitate operational activities like bookkeeping. Of course, the use of information systems is not free from fraud such as misuse of information, but with proper and directed management and supervision, it will provide many benefits for the company. In addition, internal audits are also routinely carried out and BRI audits implement ISO 27001 as a standard for information security management systems that increase customer confidence in the services of BRI Beteleme Unit.

- SS 4 Service Strategy: By adding self-checkout platforms in key locations, BRI Beteleme Unit has successfully expanded its market to meet the needs of MSME businesses as well as agribusiness and non-agribusiness in Morowali district..
- SS 6 Strategy and Organization: BRI carries out HR management with the stages of planning, acquiring, developing, retaining and maintaining, performance management and terminating activities and also special training regularly to develop the existing potential of the employees who have different specialities. The knowledge they obtained from this training or training will be brought to their place of work and taught to other employees in their unit. This strategy can ensure good customer service while saving the cost of training compared to sending a lot of the employees for training.
- 2. Financial Management
  - SS 5 Service Economics: BRI Beteleme unit regulates the limits of authority in accordance with the responsibilities held in the company in order to avoid misuse of bank finances. The management is done well with great evaluation and financing calculations and the accompanying profitability.
- 3. Demand Management
  - SS 7 Strategy, Tactics, Operation: Strategies are often discussed with the head of the unit to its services for the maintenance of the systems and the IT services.
  - SS 8 Technology and Strategy: It has been running well as seen from the time efficiency in calculating and adjusting interest rates with the automation process of the system. However sometimes the performance of lending distribution might decrease when the system is down due to technical issues.
  - SS 9 Challenges, Critical Success Factor: Risk management is done to minimize potential losses by ensuring that the user really want to make a loan. A new system will be proposed if the current one is no longer feasible to use. In addition, every problem reported to the head office will be resolved within a certain time frame to maintain the smoothness of the business activities.

### **3.1.4. Evaluasi Tatakelola Teknologi Informasi Di PD BPR Bank Bapas 69 Magelang Menggunakan Itil V3 Domain Service Strategy**

Evaluation on the 3 Service Strategy processes implemented at PD BPR Bank Bapas 69 Magelang is based on the data processed from observations and interviews [43]:

- 1. Service Portfolio Management
  - SS1 Introduction dan SS2 Service Management as a Practice: It has been implemented in accordance with the needs of BPR Bank Bapas with education and training provided to recruited employees, and developing education applications.
  - SS3 Service Strategy Principles: It is implemented by making careful plannings to improve the efficiency and effectiveness of employees and the financial benefits of BPR Bank Bapas 69.
  - SS 4 Service Strategy: It has been implemented by determining the marketing scope for targeted business opportunities in order to reduce operational risk.
  - SS 6 Strategy and Organization: It is implemented by managing access to credit information systems so that it will not be misused by irresponsible parties and also organizing activities that develop BPR Bank Bapas 69 human resources.
- 2. Financial Management
  - SS 5 Service Economics: It is implemented by calculating the finance allocation so that not only financial benefits is gained but also an increase in the quality of service to customers.
- 3. Demand Management
  - SS 7 Strategy, Tactics and Operation:-
  - SS 8 Technology and Strategy: It hasn't been fully implemented yet which makes the system inaccessible at times due to the imperfect network architecture.

- SS 9 Challenges, Critical Success Factor: It is already in place with a risk management framework that provides review of the challenges, and description of the success and risk factors used for further development.

### 3.2 Comparison of the Service Strategy Implementation

Comparison of the Service Strategy implementation that are discussed in the 4 journals can be viewed in the table below:

Table 2. Comparison of implementing service strategies

Code	Journal 1	Journal 2	Implementation	Journal 4
			Journal 3	
SS1&SS2	-	-	Crediting services used will help the company	Implementation of education and training provided to recruited employees, and develop education applications
SS3	-	There is no structured system for handling customer complaints	The procurement of a credit information system at BRI involves careful planning of resources and estimation of the benefits to be achieved within a certain period of time.	Careful planning that improves the employee's efficiency and effectiveness
SS4	Evaluating the availability of the features and services, such as credit loan applications	-	Cash machine added	Capacity and performance assessment of credit information systems is estimated to reduce the operational risk.
SS5	-	-	Limits of authority in accordance with responsibilities are set	Setting the authority limitations in accordance with employee positions
SS6	-	-	Carrying out HR management with the stages of planning, acquiring, developing, retaining and maintaining, performance management and terminating activities. Special training are also carried out regularly.	Setting the authority limitations in accordance with employee positions
SS7	The unsatisfactory service quality signals the need for improvement in day-to-day operations	-	For maintenance of IT technology and services	Proper management and documentation are done to assess service quality on a regular basis.
SS8	-	-	Efficient calculation and adjustment of the interest rate with the automation process of the system.	Employees are given the freedom to determine the loan amount, repayment period and the number of installments per month based on the type of loan the customer wants.
SS9	The features and services and quality of customer support services are available	-	Asking questions for validation for loan applications.	Applying the precautionary principle in providing loans by using the credit information system.

### 3.3. Service Operation Implementation

#### 3.3.1. Audit Teknologi Informasi pada Sistem Perkreditan Online terpadu bank xyz cabang Perawang menggunakan ITIL V3

This journal discusses the information technology audit of the Integrated Online Credit System of Bank XYZ Perawang Branch using the ITIL v3 framework [44]. Bank XYZ is one of the largest state-owned banks in Indonesia, with branches spread across the country, including in Perawang. One of the flagship services provided by Bank XYZ is the Integrated Online Credit System.

The audit was conducted by focusing on the Service Transition and Service Operation domains, in order to support the smoothness and quality of the system. Data was collected through a literature review that included interviews, questionnaires, and observations, and using the RACI Model to validate data based on RACI levels. The audit results show that both domains are at maturity level 4 (Managed and Measurable), which indicates that the system has not reached its maximum potential, especially in maintaining the stability

of IT services. To improve maturity to level 5, service monitoring and control, central point of coordination, infrastructure management, and monitoring of operational aspects are needed.

Such improvements can be achieved by predicting the potential problems, providing performance guidelines, and making continuous improvements to measurement and monitoring. From the audit results, it includes some important information related to the implementation of Service Strategy at Bank XYZ:

1. The company has not planned ways to overcome problems that may occur in the future.
2. The company does not yet have effective performance guidelines.
3. The company has not made continuous improvements to measurement and monitoring.
4. The company has not conducted effective monitoring and control of services.
5. The company has not managed infrastructure adequately.
6. The company has not conducted good stakeholder management.

### **3.3.2. Analisis manajemen pelayanan perbankan pada aplikasi BRI Mobile berbasis TI menggunakan framework ITIL V3**

This journal discusses the analysis of banking service management on the IT-based BRI Mobile application using the ITIL V3 framework [45]. The Data was collected through interviews with customers and service managers of Bank BRI KCP Palembang which is related to the analysis of banking service management on the Brimo application. The results of interviews and observations with the Service Manager of Bank BRI KCP Palembang revealed several important evaluations:

1. Availability of Features and Services: Users complain that some desired features and services, such as credit top-up purchases, PLN payments, and credit card applications, are not available in the Bri Mobile application. Therefore, it is necessary to evaluate and develop new features to meet user needs.
2. Performance and Speed: Bri Mobile applications often experience issues such as delays and even freezes during use. This is disrupting the user's comfort. Therefore, it is necessary to evaluate and improve the performance and speed of the application..
3. Quality of Support Services: The customer support services provided by Bri Mobile's support team are considered unsatisfactory by some users. They find it difficult to contact the support team and often do not get satisfactory solutions to the problems they face. Therefore, it is necessary to evaluate and improve the quality of customer support services.
4. Application Security: A number of users have complained about the lack of security of the Bri Mobile app, which makes it easy to be hacked. This can threaten the security of users' personal data and their banking transactions. Therefore, it is necessary to evaluate and improve the application security system.

### **3.3.3. Improving Helpdesk Capability in Perum Peruri Through Service Catalog Management Based on ITIL V3**

The seventh journal discusses the collection of information regarding the performance of the Information Technology (IT) division of PERUM PERURI through several approaches, such as observation, engaging directly to collect recounts of its IT performance [46]. The IT Division acts as the Service Desk and Helpdesk, responsible for handling incidents and problems that occur in the use of information technology assets. Evaluation shows that the IT Service Catalog does not provide an explanation of the various IT services and how to access these services, as there is no reference to control and evaluate the services provided to users.

Next, the Ideate stage involved a brainstorming process with the head of the IT department of PERUM PERURI to discuss solvable problems. Some of the proposed ideas include the creation of a ticketing service website, the development of a website on Asset Management, and the development of Service Catalog Management.

Lastly, the results of the research included the creation of Service Catalog Management documents, which consist of Business and Technical Service Catalogs. The documents have been validated by the head of the IT division and distributed to IT staff and IT service users. These documents are expected to be a comprehensive source of information, knowledge, and reference for service users and IT service providers at PERUM PERURI.

### **3.3.4 AUDIT INFORMATION SYSTEMS CORE BANKING SYSTEM USING ITIL V.3 CASE STUDY ON BTPN SHARIA BANK**

This review combines surveying and experimental methods to investigate IT service management at BTPN Syariah Bank [47]. The research was conducted in two stages, namely the explanatory stage involving secondary data analysis and literature study, and the descriptive stage with primary data collection through questionnaires.

The sampling method used was purposive sampling of IT experts dealing with IT at BTPN Syariah Bank. Data was collected using a questionnaire designed based on ITIL V.3 literature and processed using Microsoft Excel 2007. The results showed that each sub-domain in IT service management requires improvement and enhancement. Based on the research results, there are several things that need to be improved and enhanced in IT service management at Bank BTPN Syariah:

1. Management Intent:

This sub-domain needs improvement in all three areas evaluated: Service Desk, Problem Management, and Incident Management. It may be necessary to revise existing policies, objectives, or strategies to ensure that they are in line with best practices and organizational needs.

2. Process Capability:

There are several sub-domains that show process capability levels that do not meet the standard, especially in Problem Management and Incident Management. This indicates that existing processes may not be effective or efficient enough. Consideration should be given to reviewing and improving these processes.

3. Internal Integration:

This sub-domain needs to be improved especially on Problem Management and Incident Management. Lack of internal integration may hinder coordination and communication between various units or departments within the organization.

4. Quality Control:

Although most of the sub-domains meet the standard, there are some sub-domains that need improvement. Further evaluation is required to understand the causes of non-conformance and implement the necessary corrective measures.

5. Management Information:

This sub-domain needs improvement in several areas, especially in Service Desk and Incident Management. Improvements may be needed for the reporting and information management systems to ensure that the necessary information is available appropriately and in a timely manner.

6. Customer Interface:

There are some sub-domains that show a need for a change, especially in Service Desk and Problem Management. Improvements may be needed in the interaction between the IT department and the end users to increase customer satisfaction and service responsiveness.

### **3.3.5 Pemeriksaan Maturitas Manajemen Infrastruktur Bagian Pusat Data Bank XYZ Menggunakan Kerangka Kerja ITIL V.3**

This article presents an analysis of the operational and IT infrastructure service management conditions in XYZ Bank's Data Center Division [48]. The results of interviews and field inspections show that there are several issues that need to be addressed to improve operational effectiveness and efficiency. One of the main problems identified is the lack of human resource capacity, especially in terms of the number of personnel and relevant certifications. This affects the Data Center Division's ability to carry out operational tasks effectively. In addition, inadequate physical and logical security and risk management are also a major concern. Security incidents such as attempted remote access by unknown parties highlight the need for improvements in security infrastructure.

The results of the maturity level assessment show that IT infrastructure services in the Data Center Division are still at an early stage of maturity. This indicates the need for further development in terms of service management and performance monitoring. Although there have been efforts to create operational guidelines such as SOPs and KIs, their implementation and monitoring are still suboptimal.

To address the identified problems, it is recommended to increase human resource capacity through relevant training and certification. In addition, physical and logical security needs to be improved, including the implementation of strict access procedures and structured monitoring of the server environment. Improvements in risk management and regular monitoring of service performance are also needed to ensure effective operational sustainability.

The addition of a dedicated help desk unit to handle IT disruptions and the implementation of clear incident management can also help improve service accountability and responsiveness. Finally, it is important to strengthen cooperation with vendors and conduct regular internal audits to evaluate and improve existing operational processes.

### **3.3.6. REKOMENDASI MANAJEMEN INSIDEN PADA DIVISI HELPDESK PT. X DENGAN MENGGUNAKAN KERANGKA KERJA ITIL V3**

This journal discusses incident management recommendations for the helpdesk division of PT. X, a banking company operating in the service domain, using the ITIL V3 framework [49]. Data collection was done through interviews, observations, and literature review. Interviewees included the Team Leader in the IT Operations unit, IT Support staff, Chief Information Officer, and IT Standards and Compliance personnel. Observations were made by directly observing incident handling at PT. X. Additionally, an analysis was conducted on findings from internal documents and other supporting documents. Some relevant findings regarding gap analysis at PT. X are:

1. Incident Identification: PT. X still lacks a response team to receive and coordinate incident report management.
2. Incident Logging: There is no complete and organized incident logging system, which is necessary to support the company's knowledge assets.
3. Incident Categorization: PT. X lacks clear incident categorization.
4. Incident Prioritization: PT. X addresses incidents based on the order of receipt, rather than prioritizing based on incident categorization, resulting in gaps in determining incident priorities.
5. Initial Diagnosis: There is no initial diagnosis regarding possible occurrences in an incident and the handling of existing problems.
6. Incident Escalation: There is no team designated to handle issues if the service desk staff cannot manage them due to limited knowledge and competency.
7. Investigation and Diagnosis: There is no recording of diagnoses and investigations to identify the source of the problem.
8. Investigation and Diagnosis: Resolution activities to handle incidents have been performed well by technicians.
9. Incident Closure: Technicians perform incident closure after resolving the issue.

### 3.3.7. Information security incident response management in an Ethiopian bank: A gap analysis

Data collection was conducted using in-depth face-to-face interviews and emails, with ISO/IEC 27035 as the guideline to assess the incident management practices implemented at Bank X in Ethiopia [50]. By understanding how Bank X handles information security incidents, several relevant findings can be generated for operational service discussion:

1. Incident classification and decision-making: According to the interview sources, Bank X has procedures for information security incident management by classifying incidents based on the potential level of damage. However, the classification is not well-structured, which leads to non-IT staff, such as upper management, not being involved in decision-making when handling incidents.
2. Bank X does not have a dedicated IRT to handle incidents and relies solely on collaboration between security operation center staff and IT staff from other departments. However, ISO/IEC 27035 recommends the formation of a dedicated IRT with members from different IT backgrounds to provide more solutions for handling various types of incidents.
3. Bank X conducts incident response training but does not repeat the training sessions to identify areas for improvement. However, individual awareness of information security is crucial for creating a secure information environment by simulating specific scenarios.
4. Bank X uses an incident tracking system where incidents reported by users or IT staff via email or phone are received by IT departments within the bank. However, whether reported incidents are entered into the system is determined by the severity level based on the staff's judgement resulting in some incidents being merely observed. Additionally, the lack of a specific incident reporting from sometimes confuses staff about which incidents to report.
5. After information security incidents, Bank X holds regular meetings to discuss ideas for implementing solutions for future incidents and to improve the incident management process.

### 3.4. Comparison of the Service Operations implementation

The table below compares the implementation of service operations across different studies, highlighting the key issues identified and the corresponding recommendations.

Table 3. Comparison of service operation implementation

No	Journal Title	Main Problem	Recommendation
1	Information Technology Audit on the Integrated Online Credit System of Bank	- System maturity at level 4 (Managed and Measurable) - Lack of problem prediction, performance guidelines, and measurement and monitoring	- Predict problems - Provide performance guidelines

XYZ Perawang Branch using ITIL V3	-	Improve measurement and monitoring
2 Analysis of banking service management in the IT-based BRI Mobile application using the ITIL V3 framework	- Incomplete features and services - Slow app performance and speed - Unsatisfactory services - Weak application security	- Developing new features - Improving application performance and speed - Improving the quality of customer support services - Strengthen application security
3 Improving Helpdesk Capability in Perum Peruri Through Service Catalog Management Based on ITIL V3	- The IT Service Catalog does not provide an explanation of the various IT services and how to access them - There is no reference to control and evaluate the services provided	- Create a comprehensive IT Service Catalog - Provide reference for controlling and evaluating services
4 AUDIT INFORMATION SYSTEMS CORE BANKING SYSTEM USING ITIL V.3 CASE STUDY ON BTPN SHARIA BANK	- Lack of revised policies, objectives and strategies - Ineffective and inefficient processes - Lack of coordination and communication - Further evaluation to understand the causes of nonconformities - Improved reporting and information management systems - Improved interaction between IT department and end users	-
5 Data Center Infrastructure Management Maturity Check for XYZ Bank Using the ITIL V.3 Framework	- Lack of personnel and relevant certifications - Inadequate physical and logical safeguards - Risk management is not yet optimal - Service performance monitoring is not optimal	- Increase in human resource capacity - Improve in physical and logical security - Improve risk management - Improve service performance monitoring - Adding a help desk - Conduct internal audit
6 The Recommendation of Incident management For help desk Division Pt. X Using Itil V3 Framework	- No response team yet - Incident logging is not complete and organized - There is no clear categorization of incidents - Handling incidents based on time of entry - No initial diagnosis - No team to handle issues that cannot be handled by help desk staff - No recording of diagnosis and investigation - Resolution activities are good - Incident closure is good	- Establish a response team - Complete and organize incident logs - Create a clear categorization of incidents - Handle incidents based on priority - Perform initial diagnosis - Form a team to handle problems that cannot be handled by help desk staff - Record diagnosis and investigation - Strengthen training for help desk staff
7 Information security incident response management in an Ethiopian bank: A gap analysis	- Incident classification is less accommodating for staff who do not come from an IT background - No dedicated IRT team - Incident handling training is not accompanied by repetition - Incident reporting is not optimized	- Make incident classification acceptable to upper management and staff for decision making. - Establish a dedicated IRT team - Conduct incident handling training with repetition - Improve incident tracking system

### 3.5. Lessons Learned

The analyzed journals provide valuable insights into how Service Strategy and Service Operations are implemented in various banks, with an emphasis on different focuses and complexities. There are eleven journals that discuss various aspects of Service Strategy and information technology (IT) operations in the context of financial institutions. Each journal provides an analysis of the application of the Information Technology Infrastructure Library (ITIL) version 3 framework in various situations and operating environments. As an example, the journal that evaluates the Mandiri Livin application service using the ITIL V3 framework, highlighting issues such as the lack of features desired by customers and inadequate support

from the contact center. Meanwhile, another study focused on preparing an IT service portfolio document at PT Bank Mandiri Taspen Kediri Branch using ITIL V3, which found the need to prioritize E-Customer Relationship Management services. It highlighted the importance of developing a structured system for handling customer complaints and improving information related to the bank's socialization schedule.

Another journal discusses the implementation of a Service Strategy at BRI Unit Beteleme using ITIL V3 and the evaluation show that the implementation have provided benefits in the form of increased effectiveness and efficiency of employee performance and also customer satisfaction. However, there is still a need to improve certain aspects such as the financial management and risk management. In addition, there is another study that evaluate the information technology governance at PD BPR Bank Bapas 69 Magelang with ITIL V3 which highlights the need for better implementation of technology infrastructure.

In addition, some other journals emphasize on information technology audits, such as the audit of core banking information systems at BTPN Syariah Bank using ITIL V3. The audit results indicated that there are several areas that needs improvement and enhancement in its IT service management, including goal management, process capability, internal integration, quality control, management information, and customer interface. All of those journals provides an understanding of the challenges and solutions faced in effectively managing IT services in the financial sector, and provides a solid foundation for continuous improvement in IT management practices.

#### 4. CONCLUSION

These banks understand that Service Strategy and Service Operation can be key in improving IT service quality, increasing customer satisfaction, and achieving business goals. However, on the other hand, there is still room for improvement. Bank XYZ, for example, still needs to improve the maturity of its service system. This improvement can be done through periodic evaluation and improvement, training and education for stakeholders, and implementation of best practices in Service Strategy and Service Operation implementation.

Every bank has unique challenges and opportunities in implementing Service Strategy and Service Operations. Factors such as bank size and type, organizational structure, organizational culture and values, level of information technology maturity, and customer needs and expectation had an influence. By understanding these unique challenges and opportunities, each bank can design and implement an appropriate and effective Service Strategy and operations. This will lead them towards better IT services, increased customer satisfaction, improved operational efficiency and effectiveness, increased bank competitiveness, and ultimately, achieving the desired business objectives.

The implementation of Service Strategy and Service Operation in banking is not a finalized process, but an endless endeavour to continuously improve the quality of their IT services and provide the best experience for the customers.

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