Prioritizing IT Services for Organizational Development: A Strategic Approach"

by Asep Saepudin

Prioritizing IT Services for Organizational Development: A Strategic Approach

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Abstract. This research focuses on the Information Technology Infrastructure Library V3 (ITIL V3) and its Service Strategy stage, specifically on the IT Service Portfolio. The main aim is to establish the organization's strategic plans for information technology and systems through four key processes: strategy management for IT services, demand management, financial management, and prioritization of IT service proposals. The methods used involve identifying service users and their demands, determining expected costs and benefits of service development, and analyzing previous stages to prioritize IT services for the next three years. The result is a list of recommended IT services in the IT Service Portfolio that can assist the company's development. The implication of this research is that it provides guidance for organizations to prioritize their IT services and ensure they align with their strategic goals.

Keywords: IT Service Portfolio · Service Strategy · ITIL V3 · strategy management · demand management · financial management

1 Introduction

Information technology is essential in helping an organization or company provide better customer or user services, increase the speed of decision-making, create new products and services and improve supplier relationships [1]. Providing good service to customers does not need the latest information technology. Effective and efficient management of information technology services can leverage the services provided more. The benefits of effective management of information technology services are improving information technology services at lower costs with a focus on service rather than technology [2].

Today's companies demand that IT services can be run properly to support ongoing business processes. As stated by [3], running a business providing IT services must be

excellent and disciplined to ensure smooth operations. IT services can be regarded as a strategic asset in running a business. Therefore, to run a business optimally at this time, it is necessary to invest resources to run and support IT services. The Development of information technology such as Big Data, Cloud Computing Technology, Mobile and Network Technology, and the Development of social media make IT services more developed. Therefore, IT service planning and management must be a particular concern in an organization or company to provide the best service for their users or customers. IT service management can be done by creating an IT service portfolio so existing IT services can be mapped correctly. The preparation of the IT service portfolio is needed to map existing IT services and the Development of IT services which can be the basis for IT implementation to meet and support the core business. With a portfolio of IT services, investments that are in line with business objectives can be achieved and direct service providers in determining IT service investment priorities which are the main focus of the business [4].

This research applies the concept of an IT service portfolio to companies engaged in producing and selling premium leather bags. The company has problems managing IT services where the available services only rely on the website and social media as a medium for disseminating information and e-commerce for product sales. Lack of IT planning and management's ignorance in choosing IT investments cause the services provided by the company to customers to be less than optimal. The unavailability of clear documentation and analysis of IT service investments and the unplanned and systematic development of information systems has resulted in the organization not having a priority scale for IT Development. This research is expected to assist in providing appropriate IT service proposals to be used as a basis for compiling a portfolio of Information Technology services after the IT service portfolio is expected to improve existing business processes and create quality IT services.

This research will discuss the creation of an IT Service Portfolio using the Information Technology Infrastructure Library (ITIL) framework, which focuses on the Service Strategy area. One of the stages contained in ITIL namely Service Strategy. The service strategy area is a place to formulate strategies that service providers will use to provide services that can meet the needs of their users [5].

2 Literature Review

2.1 IT Service Management (ITSM)

Service Management helps improve the organizational ability to create and deliver customer service [5]. IT Services Management (ITSM) is a method used to manage IT Services to ensure that the IT Services can support an organization's business process [12]. IT Service Management implements and manages IT service quality to meet business needs. IT Service Management has become essential for organizations because almost all business activities have taken advantage of the availability of Information Technology. Providing IT services that can satisfy all users is increasingly difficult because the needs of users for Information Technology will continue to increase. IT service management is carried out by IT service providers through the right mix of people, processes, and information technology.

Fig. 1. Lifecycle Services for ITIL V3 [8]

IT service providers are parties that provide IT services to internal or external customers. The relationship between the service provider and the customer will depend on the service provider's delivery of IT services to meet business requirements at agreed levels of performance and cost. There are three types of IT service providers, namely (4): provider's delivery of IT services to meet business requirements at agreed levels of performance and cost. There are three types of IT service providers, namely [4]:

- Type I (Internal Service Provider): Internal Service Providers are service providers attached to the organization, such as an IT department that provides IT services to other units within the same organization.
- Type II (Shared Service Unit): Shared Service Unit is a service provider from within the organization that provides IT services for more than one business unit.
- Type III (External Service Provider): External service providers are service providers that provide IT services to customers who come from outside the organization (external).

2.2 Information Technology Infrastructure Library (ITIL) Framework

ITIL is a 'best practice' framework for managing IT services, which can be adapted to any business environment. ITIL introduces a systematic methodology for managing IT services in organizations. They were founded in the late 1980s by the UK government service provider, Central Computer and Telecommunication Agency (CCTA). The research results by [6] say ITIL is the most popular framework. ITIL has been proven to be able to integrate and align IT and business goals so that companies can provide IT services that are realistic, scalable, predictable, and efficient [3]. This paper's research is based on version 3 of ITIL Service Design Phases. The Fig. 1 presents the concepts that form the ITIL lifecycle.

Figure 1 visually represents the ITIL Lifecycle, which compromises all the phases described below. Note that ITIL V3 indicates what to do with all its processes but does not indicate how [8, 9]. The service Lifecycle is a basis for IT Services Management in the organization. According to ITIL version 3 Service Lifecycle consists of five phases

[10]: Service Strategy (SS), Service Design (SD), Service Transition (ST), Service Operation (SO) and Continual Service Improvement (CSI). The service lifecycle, which also identifies the regions of change for the entire system and its features, organizes and explains the connections among the various IT service components. The benefits of IT are managed through several functions and processes throughout the service lifecycle. Service Strategy offers advice on perceiving service management as a strategic asset rather than just an organizational skill. Guidance is provided on the principles underpinning service management practice, which are useful for developing service management policies, guidelines and processes across the ITIL Service Lifecycle [8]. The concept starts from assessing customers' needs, and the market reaches the life cycle stage of Service Strategy as a determinant in the organization's services based on Information Technology (IT). Service Strategy determines the type of services offered to customers or markets. As used in this research is the approach to ITIL 2011. The following are the main processes of the ITIL Service Strategy process in 2011 that are used in this research [8]:

- Demand Management is activities that understand and influence Customer demand for Services and the provision of Capacity to meet these demands. At a Strategic level, Demand Management can involve the analysis of Patterns of Business Activity and User Profiles. At a tactical level, it can include Differential Charging to encourage Customers to use IT Services at less busy times.
- Financial management is the function and processes responsible for managing an IT Service Provider's Budgeting, Accounting and Charging Requirements.
- Service Portfolio Management is the complete set of Services that a Service Provider manages. The Service Portfolio manages the entire Lifecycle of all Services and includes three Categories: Service Pipeline (proposed or in development), Service Catalogue (Live or available for Deployment), and Retired Services.

2.3   Information Technology Service Portfolio

Service Portfolio Management (SPM) is the process responsible for managing the IT Service Portfolio. SPM considers services in terms of their business value [8]. The purpose of SPM is to ensure that the service provider has the right mix of services to balance the investment in IT with the ability to meet business outcomes. It tracks the investment in services throughout their lifecycle and works with other service management processes to ensure that the appropriate returns are achieved. In addition, it provides that services are clearly defined and linked to achieving business outcomes, thus ensuring that all design, transition and operation activities are aligned with the value of the benefits [11]. In other words, the IT Service Portfolio is the complete set of services that a service provider manages. The IT Service Portfolio also identifies those services in a conceptual stage, namely all services the organization would provide if it had unlimited resources, capabilities and funding. IT Service Portfolio acts as a gatekeeper for service providers, ensuring they only deliver services that will contribute to strategic goals and meet agreed business objectives. SPM consists of four work methods, including [8]:

- Define: inventory services, ensure business cases, and validate portfolio data.

- Analyze: maximize portfolio value, align, prioritize, and balance supply and demand.
- Approve: finalize proposed portfolio, and authorize services and resources.
- Charter: communicate decisions, allocate resources, and charter services.

3   Research Methodology

This study was performed by using qualitative research methods and particularly semi-structured interviews. The final form of this research is IT Service Portfolio, which can be obtained using the ITIL v3 Service Strategy phase approach. The following is a list of the research stages this study covered:

3.1   Data and Information Collection

This stage focuses on data and information collection activities used in the analysis stage of making an IT Service Portfolio based on the ITIL V3 Service Strategy phase. It begins with the preparation stage by conducting Desk Observation, namely the observation method by conducting a literature review to determine documents related to data collection. The desk Observation process is carried out using document review techniques, namely investigating data from documents, notes, and various other sources. Interviews were conducted to gather data through direct conversation with the research object. Observations in the field accompany the interview stage to determine the condition of the running IT services. This phase will likely produce an output such as information on the IT services implemented, the current state of IT services, and the retired services.

3.2   IT Service Portfolio Construction

This stage focuses on making appropriate IT service proposals representing IT service needs. The proposed list of IT services is analyzed and prioritized at the Analysis stage so that it can produce a useful IT service portfolio.

Define IT Service Proposal Based on Demand Management
In summary, the main objective of defining the Demand Management process is a list of proposed IT services. The Demand Management process has six activities: Pattern of Business Activities, User Profiles, Service Classification and Visualization, Service Models, Definition of Utility and Warranty, and lastly, Definition of Service Package.

   The stage begins with a definition of the Pattern of Business Activities (PBA), which produces detailed information about the business routines, including the frequency, volume, location, time, and duration of the business activities. Following understanding the User Profile, this activity helps to find out the pattern of IT service needs for user groups so that later the availability and reliability of IT services can be determined. Then performing Service Classification and Visualization of each service based on similar characteristics of Service Archetypes which refers to the utility owned by each business service so that the result is in the form of IT services originating from the business service group. After that, the definition of Service Models is carried out, which will describe

the service system's components, including the interaction between service archetypes, IT services, and owned Service Assets. Utility and warranty for each IT service formed will refer to the outcomes of the group of business services that compose it. The utility will describe the functions or benefits obtained from IT services, while the warranty will define the quality or assurance of the use of IT services that have been formed. Finally, the definition of the Service Package is carried out to determine which proposed IT services are included in the core services or support services group.

Define IT Service Proposal Based on Financial Management
This phase relates to the tasks involved in financial management, specifically budgeting through cost model analysis and creating a business case for each proposed IT service. Based on the available IT service proposals list, a cost analysis will be carried out for each service proposal by grouping these costs using Cost Model calculations. The Cost Model will calculate how much it will cost to provide a service and help decide the cost budget spent on delivering IT services.

Analyse (Service Portfolio Management)
At this stage, a Service Valuation will be conducted, comparing the cost of IT services in the Business Case section with the benefits users will get from an IT service. The results of the Service Valuation will be used as input to determine the service priority scale. Followed by prioritizing services assisted by Mc Farlan's prioritization model, where IT needs will be prioritized based on the level of need and profit. The Mc Farlan model will map IT needs into four quadrants: Strategic, High, Potential, Key Operational, and Support.

3.3   IT Service Portfolio Results

Based on the analysis of the previous steps, the IT service portfolio will now be mapped into each year. The period is mapped out to understand the IT services planned and deployed in advance fully. The service status has been approved, and the research object has validated the IT service portfolio. During the validation phase, the research object will assess the suitability of the proposed IT service portfolio. In the last stage, the paperwork on developing an IT portfolio using ITIL V3 Service Strategy is completed.

4   Results and Discussion

Interviewing several individuals who are directly involved in ongoing business processes is the first step that is conducted. According to the information gleaned through interviews with various sources, 17 services are now active. Table 1 illustrates the several resulting services.

Based on the User Profile analysis that has been done, it can be concluded that user profiles perform the same activity repeatedly in different services with unbalanced workloads. To prevent this, IT service proposals are given to support the activities. The available services have many types, so these services need to be grouped by understanding the similarity or similarity of characteristics they have using Services Archetypes, and the results are as follows (Table 2).

Table 1. Pattern of Business Activity

PBA Code	Services	Location	Duration/Service	Frequency	Volume/Year
1	Payroll Report Management Service	Office	2 h	1x/Month	12
2	Leather Treatment For Use Service	Production House	8 h/Day	As Requested	365
3	Production Needs Procurement Services	Production House	16 h/2 Day	As Requested	48

Table 2. Service Classification and Visualization based on Service Archetypes

PBA Code	Service Names	Characteristic	Service Archetypes Code
1	Payroll Report Management Service	Connect, Define, Analyze, Compare, Save	U2, U3, U5, U6
2	Leather Treatment For Use Service	Processing, Providing, Storing	U1, U2, U8
3	Production Needs Procurement Services	Record, Connect, Analyze, Compare, Meet, Present	U4, U2, U5, U6

After services are classified and visualized, services with similar characteristics or similarities can be grouped into the same group to form an IT service group. Not all services have received IT support (Service Assets) in this service grouping, so these services need to be proposed in the IT Service Portfolio. The following is an example of a group of IT services formed from business services based on Service Archetypes and Existing Service Assets (Table 3).

It shows that several services have not been equipped with the application, so it can be concluded that, at present, the object of research has no specific application to maintain each service activity. On the organizational side, the services to be made must align with the organization's vision and mission. This is highly significant since the new services that will be developed need to bring the organization's goal to fruition. Utility and warranty are created to fulfill the PBA requirements of the IT service group's business services.

Based on the service model outcomes. It is clear which services need to be proposed to acquire application development funding so that the corresponding services can be implemented more effectively. The following is a list of numerous different suggestions for the development of IT services can be seen in Table 4.

Table 3. IT Services Model

IT Services	PBA Code	Business Services	Existing Application	Application Support that Needs to be Developed
Payroll Report, Financial Income, Financial Expenditures, Sales, and Attendance Services	1	Payroll Report Management Service	Microsoft Excel	Management Information System (MIS)
	2	Leather Treatment For Use Service	–	
	7	Maintenance Selling Platform Service (Upload Content & Live Sale)	–	
	12	Financial Expenditure Data Recording Service	Microsoft Excel	
	13	Sales Data Recording Service	Microsoft Excel	
	14	Financial Income Data Recording Service	Microsoft Excel	
	18	Product Delivery Service to Customers	–	
Production, Stock, and Procurement Report Services	4	Product Production Service	–	Production Information System (PIS)
	16	Production Data Logging Service	Microsoft Excel	

Table 3. (*continued*)

IT Services	PBA Code	Business Services	Existing Application	Application Support that Needs to be Developed
	17	Quality Control Services, Accessories Procurement, Accessories Installation, Packing	–	
	8	Pre-Order (PO) Service	Selling Platform & Microsoft Excel	
Online Complaint Service	9	Customer Complaint Service	Selling Platform	Online Complaint Form integrated with Sales Report on MIS
	10	Product Damage Repair Service	Selling Platform	
	11	Product Return Service	Selling Platform	

After knowing the service package, in each IT service package, the implementation price for each IT service package is analyzed. Each service package has its cost model, which can be seen in Table 5 as one of its cost models.

Service Valuation refers to the results of the cost model contained in the business case and is carried out at the Financial Management stage. The following is the Service Valuation for each proposed IT service (Table 6).

After knowing the Service Valuation, mapping the proposed IT services into four quadrants is carried out in the Mc Farlan matrix. Mapping of IT service proposals based on this matrix is carried out to analyze the contribution of IT services to current and future business interests. The interview technique is carried out by asking questions to sources related to services. After analyzing the answers to the questionnaire containing the question components to determine the service quadrant and considerations based on the definitions of Strategic, Key Operational, High Potential, and Support. Then it can be concluded that the determination and mapping of IT services are based on the four quadrants contained in the Mc Farlan Matrix as follows:

Table 4. Definition of Service Package

IT Services	Application Development Support	Description
Payroll Report, Financial Income, Financial Expenditures, Sales, and Attendance Services	Management Information System (MIS)	This application has the aim of facilitating HR in data processing activities. With this application, recording, processing, managing, storing, distributing and monitoring every data in all business activities becomes integrated, safe, and easily accessible.
Production, Stock, and Procurement Report Services	Production Information System (PIS)	Production Information System is a service that supports the process of recording, processing, managing, storing, distributing and monitoring every data in the production business activities to be integrated and easily accessible.
Online Complaint Service	Online Complaint Form	The Online Complaint Service aims to make it easier for Admins to serve customer complaints. This service automatically accommodates and monitors complaint requests and reduces human errors (wrong recording, insufficient or inappropriate data, reducing the burden of recording data, etc.)

Based on Fig. 2, the proposed IT Service is divided into four quadrants based on the needs and the relationship between the proposed application and the problems experienced by the research object. In the Strategic quadrant, where the immediate implementation of IT services is necessary since these services are needed both now and in the future, the Production Information System is one of the components that make up the system. The Management Information System is included in the High Potential quadrant, where IT services will be required in the future to support business processes. Online Complaint Forms are included in the Key Operations quadrant because these services are crucial for the company in accommodating all incoming complaints, making it easier to manage and quickly resolve existing complaints.

Table 5. Cost Model Analysis MIS & PIS

Assets	Use For service (%)	Amount	Details	Cost (Rp)	Total (Rp)
Software Development					
Project Manager	100%	2		6,700,000	13,400,000
Needs Analysis	100%	2	5 Day	740,000	1,480,000
Design	100%	2	5 Day	740,000	1,480,000
Implementation	100%	4	20 Day	3,600,000	14,400,000
Testing & Documentation	100%	2	10 Day	1,685,000	3,370,000
Information System Maintenance	100%	2	30 Day	1,000,000	2,000,000
Application Specifications (Software)/Year					
Domain	100%	1	1 Year	150,000	150,000
Hosting	100%	1	1 Year	1,650,000	1,650,000
Bandwidth	100%	1	10 GB/Month		
SSD Storage	100%	1	200 GB		
SSL	100%	1	1 Year		
Daily Backup Feature	100%	1	1 Year		
Total Cost					37,930,000

Table 6. Service Valuation

IT Services	Benefit	Risk
Management Information System (MIS)	Provide convenience and time efficiency for the object of research's HR in carrying out data reporting activities, increase reporting data availability, and save paper costs for recording reports.	The possibility of a discrepancy with the needs of the organization, Rising system development costs, and the system cannot improve organizational performance
Production Information System (PIS)	Provide convenience and time efficiency for the object of research's HR in carrying out data reporting activities, increase reporting data availability, and save paper costs for recording reports.	The possibility of a discrepancy with the needs of the organization, Rising system development costs, and the system cannot improve organizational performance

Table 6. (*continued*)

IT Services	Benefit	Risk
Online Complaint Form	The Online Complaint Service aims to make it easier for Admins to serve customer complaints. This service automatically accommodates and monitors complaint requests and reduces human errors (wrong recording, insufficient or inappropriate data, reducing the burden of recording data, etc.)	Customers may enter data gaps and information, and admins cannot communicate directly with customers, making it difficult to interact.

Strategic	High Potential
Production Information System (PIS)	Management Information System (MIS)
Online Complaint Form	
Key Operational	**Support**

Fig. 2. The result of Mc Farlan Matrix

5   Conclusion

After planning service portfolio management, it can be concluded that this process is a document IT Service Portfolio. The document contains details of existing services in the object of research. No priority services are now in use, and three IT services are proposed for future implementation. This research generates a standard IT Service Portfolio document using the ITIL V3 Service Strategy as its foundation.

Several partially implemented portions are undergoing continual development. There are still unknown roadblocks ahead. A quantitative approach and many analytical approaches, such as the Cost-Benefit Method, should be employed to undertake more studies to generate more thorough and trustworthy implementation findings that can lead to the IT services offered.

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