

# Implementing Information Technology Service Management (ITSM) to Support the Development of E-Government in Indonesia

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**Abstract**--Dependence on information technology requires organizations not only to focus on building information technology products but also to design information technology service management so that they can provide effective and efficient services for their users. The best practice framework that can be used is Information Technology and Infrastructure Library (ITIL). However, the government sector in Indonesia has not fully adopted this framework even though this framework has been the reference of several organizations and has been successful in its implementation so as to bring benefits to the organization. This study aims to implement ITSM using the ITIL framework for government organizations so that the government can follow the steps in implementing the ITIL framework and can improve information technology services in order to better develop E-Government to the public. The study was conducted using the method of field observation, literature study and review of applicable regulations in Indonesia, especially those related to E-Government. The results of this study are in the form of points for implementing the ITIL framework to support the development of E-Government in the field of information technology services by government agencies in Indonesia.

**Keyword:** ITSM; ITIL; E-Government

## I. INTRODUCTION

Information Technology Service Management (ITSM) is managing the information technology in providing value to its users in the form of effective and efficient service [1]. Among the achievable aims in implementing ITSM is standardized information technology service adopted by organization to give good service to its users [2]. One of the best practices in ITSM is Information Technology and Infrastructure Library (ITIL) framework [3].

The management of information technology service is required by both business organization and non-profit oriented organization, one of which is the government [4]. The higher the complexity of service information technology in an organization, the higher the complexity of the problems that will be faced by information technology service providers. The challenge will also be even greater. The complex problems if not managed and optimized in a system will disrupt business processes that run in

the organization. Rapid changes, if not managed, will interfere with the organization's business processes. One example that will affect workers in information technology services is working all the time solving the same problem occurs repeatedly without being documented. This time-consuming work will affect the availability of information technology services to customers. This can be reduced if large or small organizations implement information technology service management (ITSM) [5].

Nevertheless, the management of information technology service in accordance to ITSM standards is not a main focus yet in governmental sector in Indonesia. Whereas the main objective of information technology service management in line with ITSM is ensuring that information technology services executed by the government meets business needs and directly supports government activities actively [6].

Indonesian government has issued regulation related to E-Government namely *Peraturan Presiden Nomor 95 Tahun 2018* (Presidential Decree No 95 year 2018) on Electronic Based Government System (SPBE). The regulation stipulates that the current government aims to actualize qualified and trustworthy public service. Electronic based government management needs to be implemented to intensify the cohesiveness as well the efficiency of electronic based government system [7]. The implementation of ITSM in electronic based government management should aid in making it real.

To improve the electronic-based governance, especially in the field of information technology services, in this research discusses ITSM implementation using ITIL framework in governmental sector, in terms of information technology service operation to enable the government provide a more qualified information technology service in order to support E-government development in Indonesia.

## II. METHODS

A qualitative approach is employed in this research by conducting field observation in a state high institution applying electronic based agency management system. Literary study of previous studies and investigation on several E-Government regulations are also carried out. The findings of this research are steps in ITSM implementation in terms of information

technology service operation administered by a government agency to support E-Government development in order to allow a more qualified public service.

### III. DISCUSSION

#### A. *Information Technology Service Management (ITSM) and Infrastructured Technology Information Library (ITIL)*

Service management is a set of certain capabilities possessed by organization to deliver value to users in a form of results facilitated by a system with adequate access utilizing available device. This capability focuses on not only service products but also on processes, methods, functions, roles, and activities of service provider to distribute service to users. Service management is more than a merely service providing. It is every service, process, and infrastructure component owning a cycle in which service management considers every step in the cycle from strategy, design, transition, operation and continuous improvement. Service management inputs are resources and capabilities of several service provider assets. The output of service management is valuable service to customers [1]. Philosophically, ITSM brings about user perspective into main contribution in company business process instead of the technology contribution itself. The employment of information technology and its management must be in harmony with the business objective of the organization [8].

An organization, in performing information technology service management, needs good practice adoption process in order to establish effective service management system. Good practice has shown that the guidelines have been employed and have yielded effective service management. It can come from many sources including generally utilized framework such as ITIL, CoBIT and CMMI as well as from reference standards like ISO/IEC 20000 and ISO 9000 and knowledge/experience of the doers within the organization [9].

ITIL is a general framework that has become the best practice in information technology service management. This includes techniques, processes, methods, activities and reward considered as the most efficient and effective in finishing repeated procedures works in a large organization [8]. ITIL provides framework for information technology management, supplies forms of service delivery, and focuses on continuous measurement and betterment of information technology service quality both from provider and user sides. ITIL has successfully been adopted by various organization across the globe [1].

The advantages of adopting ITIL:

- a. escalating IT service users' satisfaction [1],
- b. extending the availability of service and indirectly influencing profit and income [1],
- c. increasing organization resources management and utilization to save costs [1],
- d. reducing rework [10],
- e. minimizing work redundancy or errors [10],
- f. providing service to accommodate organization, provider and user needs [10],
- g. decreasing service incidents and downtime [10],

- h. supporting decision making process in higher level management in IT resources management [9],

ITIL V3 is the latest version of ITIL comprising of 5 processes. They range from initial definition and organization needs analysis in Service Strategy and Service Design and migrate into the environment of Service Transition and improvement in Service Operation and continuous betterment in Continual Service Improvement [1].

This study focuses on one of the cycles namely Service Operation cycle. Service Operation of ITIL contains guidelines to achieve effectiveness and efficiency in service delivery and ensures that both provider and user get value in service management [11]. Featuring users' perspective, information technology service management and operation will be the main focus of this study. This too is government's target according to Peraturan Presiden No 95 year 2018 (Presidential Decree 95 year 2018) in which the government aims to provide qualified and trustworthy public service [7].

Several business organizations have adopted ITIL into their organization process and they have proved that it reduces the operational costs, shortens the duration of information technology service delivery, educates the staff, and many more [12]. However, some adoption processes are also deemed unsuccessful due to the lack of leader commitment, staff education, and etc [13]. Adopting ITIL successfully depends on some aspects such as infrastructure, application, information, and human resources [6]. To government sector in Indonesia, financial resources plays a role too in securing information technology service management.

#### B. *E-Government Gap Development Analysis in Indonesia*

The development of e-Government in Indonesia began when President Instruction No 6 year 2001 on telematics, stating that government should utilize telematics technology to support good governance and accelerate democracy process, was issued [14]. In 2002, e-Government was simply carried out by opening a website by government. Information disclosure started to soar in 2005, and some local government began to make use e-Government in running their organization business. E-government expand more rapidly owing to the push by Indonesian president, Joko Widodo, who orders the implementation of e-Government in 2017 to make efficient working hour for civil servants as well as to give faster and easier service to Indonesian people [15]. There are various services developed by each ministry and local government although they have not met their maximum capacity. E-Government implementation is constrained by several factors, such as the lack of competent human resources in information technology, the presence of sectoral ego, and disintegrated data among government agencies [16]–[18].

The researcher specifically analyzes the gap in the implementation of information technology service management in a state high institution in Indonesia. An "as is" condition is the state obtained from observation in this institution whose tasks and functions are planning, developing, implementing, and monitoring information system and technology. A "to be" condition is the ideal situation attained from literary study of

Service Operation of ITIL framework. These conditions can be seen in Table 1.

TABLE 1. CURRENT CONDITION OF AGENCY AND IDEAL CONDITION

No	Current Condition (“as is”)	Ideal Condition (“to be”)
1.	Request fulfillment time service/incidents completion time not yet on time. This is influenced by staff placements are not in accordance to each individual’s capability.	IT service staff can meet customer needs. Staff placement according to ability is categorized by first-line staff, technical staff for higher level problems [9]
2.	Some problems and incidents that are not handled through helpdesk or personally consulted cannot be learned by all staff to train them to make simple repair, and therefore some problems recur.	All the incidents are well documented in order to could be managed and optimized by the system if the problem recur at the future [11]
3.	Some applications are not integrated into one yet. They also belong to different owners although they are in one agency. Some divisions have their own special application without maximum supervision by IT service provider.	All application are monitored in a control system [11]
4.	Staff have not had opportunity to give feedback to IT service provider related to its performance, thus customer satisfaction is unmeasured.	Customer-centered business processes. Customer satisfaction have to be measured to assess the IT service well delivery [11]
5.	Incidents have not been well classified that leads to less maximum problem solving in line with SLA. Prioritizing has not reached the utmost.	Responsive to the customer needs / incidents [19]
6.	Staff requesting service to IT division cannot check on their request status. Some argue against asking back and forth to IT service division.	Customer can check the service request [1]

From the elaboration of the conditions/problems faced by a high state institution in the field of information technology

services (table 1), effective and efficient steps are needed based on the application of a framework with best practices, namely ITIL. The steps for implementing ITIL to improve information technology services can be seen in section C.

*C. The Implementation of ITIL Framework to support e-Government in Indonesia*

In accordance to Presidential Decree No 95 year 2018 on Electronic Based Government System, the management wants to actualize several condition related to e-Government development, namely [7]:

- a. embodying a clean, effective, transparent and accountable governance as well as qualified and trustworthy public service which requires electronic based governance system
- b. expanding the unity and efficiency of electronic based governance system which call for national electronic based governance system and management.

When information technology is well-utilized by developing e-Government, all process will be citizen-centered and this should give positive impact to public relation, inter-governments and business world [20]. As elaborated in ITIL guidelines, delivery value to users is the main objective of a service development [11]. To achieve ideal condition in government agencies, several steps are necessary in information technology service management:

- a. From the Table 1 point 1, according to research from Punyateera et al [9], high request service intensity need a lot of staff at the first-line level to request completion. But, the organization just need allocate the limited staff to the suit work (right man on the right job) and prioritizing the work to handle. According to ITIL Service Operation [11], the staff need training to improve the staff capability to meet the customer need/to handle information technology service.
- b. From the Table 1 point 2, according to ITIL Service Operation [11], all service requests/problems that have occurred should be traceable and documented in a system referred to in ITIL as a Known Error Database with the aim of efficiency and effectiveness in Incident Management, some recurring failures should be minimized so that delivery time and service request tickets are shortened. All system users understand more about the ongoing system.
- c. From the Table 1 point 3, according to ITIL [11], Making one service and another interminable to enable network status checking and in-line service status checking. It will not only ease information technology service officer, but also help user in checking at which step their complaint status is. Staff can handle incident or handle inactive service in a quick way. Managing users wisely so that some information access open all the time. This will affect information availability service for the users. Data availability is important to customer satisfaction.

- d. From the Table 1 point 4, according to the ITIL [11] checking feedback before complaint ticket/service request is closed. It links to system evaluation or ongoing business processes. By conducting periodical evaluation, information technology service division can easily have a self-assessment to provide more qualified service to the users.
- e. From the Table 1 point 5, according to research from Marko Jannti et al [19] Identify and classify the incident can help department workflow effectively in order to IT service provider can meet the customer needs and delivery value to the customer.
- f. From the Table 1 point 6, according to the ITIL Service Operation [11] customer-orientation in the business process that adopts ITIL makes the customer need to be notified of the status in the current queue. This affects customer satisfaction, besides facilitating information technology service officers can also help customers to find out where the current status of the complaint so that it can always be informed of the status without having to do repeated checks to the department that handle the complaint.

#### IV. CONCLUSION

The result of the discussion shows that it is possible to manage information technology employing guidelines of ITIL framework in order to realize the hope of developing Electronic Based Governance System. This leads to more qualified service to the public. ITIL guidelines, which are the best practice, have been applied to achieve efficiency and effectivity in service providing. This can be adopted and adapted by Indonesian government. This research is also a part of a thesis under the theme developing service desk of information technology in a state high institution.

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