Improving business processes to develop standard operation procedures on government building maintenance work in Indonesia

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Abstract. Preventive and corrective work carried out on government structures requires that Standard Operating Procedures for financial planning be developed to put an end to sharp practices which often result in budget wastage. The risk factors that can be instrumental to waste in the planning, implementation, maintenance, and supervision of government structures include Standard Operating Procedure that is not yet developed and organizational functions that are yet to be perfect. Hence, Standard Operating Procedure (SOP) requires good risk management. It will result in risk management strategy to enhance maintenance performance and maintenance of government building with respect to building health, building safety, comfort of the building and ease of constructing government building. The aim of this study is to find out how business processes and activities are organized for the planning, maintenance, implementation as well as supervision of government structures. The methodology used included expert validation, respondent survey and benchmarking analysis to determine its business process. The results of this study indicate that there are 164 activities in 16 business processes for preventive and corrective work relating to execution, planning, and supervision of government structures.

1 Introduction

Government buildings are structures for official purposes which are owned by the government and maintained with funds derived from APBN and/or other legal gains. They include office buildings, hospital buildings, school buildings, country houses, warehouses, and others [1]. They need maintenance to extend their lifespan so that services to the community can be met indirectly. Maintenance of buildings includes requirements relating to health, safety, comfort, and ease of buildings [2].

If buildings are not maintained, they will have a short lifespan. This is because there will be a damage to their structural, architectural, electrical, and mechanical parts. Damage that occurs will cause the failure of the buildings which can result in a collapse. Low-

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quality materials used can make the construction to fail [3]. According to the independent daily (2017), people no longer have faith in government buildings found in various institutions because of the various complaints from different users who are of the opinion that the buildings are – below standard. The huge amount of money expended to maintain government buildings has been a source of concern because the quality of work done falls below expectations. The result is that the target of maintaining government structures is not achieved. Factors that make achievement of feasible performance in the maintenance of government buildings impossible include the lack of readiness on the part of workers to undertake these activities and lack of standard procedures to be followed organizations in maintaining government buildings. These factors result in research questions on the organizational structure, business processes, activities, inputs and outputs and time taken for maintaining government buildings.

The government sought to enforce SOP implementation and this led to the issuance of the regulation of the Minister of Government and State Apparatus Number 35 Year 2012 [4]. With regards to governance, SOP assists the government to be more effective and efficient in providing services to different communities. SOP will help companies control their operational activities [5]. Development of Standard Operational Procedures (SOP) in planning, implementation, maintenance, and supervision guard against budget wastage. It is anticipated that the results of this study will lead to an improvement in the maintenance and its effects on government structures.

This research is geared towards finding out the business process leading to the development of standard operational procedure in the process of Maintenance Planning, Implementation, Supervision Works, and Constructing Government Buildings.

2 Theoretical study

2.1 Managing building maintenance

A building is a structure located in air, on land or in water, which people use for shelter or residence, business activities, religious activities, culture, social activities, and special activities [3]. Building maintenance is an effort geared towards maintaining the reliability of buildings functional at all times. Building maintenance entails repairing and/or replacing parts of buildings or building materials for the perpetual functionality of the buildings. [1]. Maintenance of buildings takes into consideration comfort, safety, health, and ease of building [1].

2.2 Standard operating procedures

Standard Operating Procedures (SOPs) are a set of instructions that regulate the administrative processes of government with respect to when and how to do, where and by whom (Regulation Empowerment of State Apparatus, No. 52 Year 2011) [6]. The objective of (SOPs) is to unify the perceptions of parties involved to have a better understanding of the tasks to be undertaken [7]. SOPs, as an important component of quality management system, will greatly help to strengthen transparency and reduce errors in the implementation of procedures, as well as improve the efficiency and quality of service by reducing the level of error and uncertainty [8].
2.3 Business processes and activities

The business process encompasses resources, roles, and rules that are required production and delivery of products or services for customers. Majority of the organizational activities are carried out in this process. Nowadays, companies are becoming more aware of the importance of processes for effective performance of business [5]. In this research, Business Process in Maintenance of Government Building is divided into 2 (two) business processes; these are Maintenance and Maintenance. Again, it is divided into 3 (three) namely planning, execution and supervision. Business process activities of budgeting, implementation and maintenance of government buildings are spelt out in line with the literature results and also by archival analysis and interviews with those parties who have carried out the business processes.

3 Research method

Descriptive qualitative method was used in this research. The regulation relating to building maintenance and previous studies served as input for this study. The arrangement of the instrument to be used in data retrieval was the next step. Then, content and construct validity was carried out to determine the variables used. The following steps were taken out of pilot survey as well as continued survey of respondents. The respondents in this research were authorities in building maintenance’s field. The results of the analysis were then substantiated by experts

![Methodology of the Research](image)

Also made use of in this study was the delphi method which helped to validate business processes and existing activities to the relevant experts. Hence, the results of validation by experts were processed and re-analyzed. To obtain the approval of previous experts, the results were revalidated.

4 Result and discussion

On premises of the theoretical studies discussed in the literature review, the implementation of maintenance work is categorized into 4 activities, namely, Planning, Implementation, Maintenance and Maintenance Supervision. The results of data collection by experts who performed further analysis revealed 16 business processes. Each business process had activities and the 16 business processes had a total of 164 activities.

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<th>Table 1. Business Process and Activities of Maintenance of Government Buildings</th>
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<td>1. MAINTENANCE OF GOVERNMENT BUILDING EMERGENCY</td>
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<td>X1</td>
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<td>X1.1</td>
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Fig. 1. Methodology of the Research

Also made use of in this study was the delphi method which helped to validate business processes and existing activities to the relevant experts. Hence, the results of validation by experts were processed and re-analyzed. To obtain the approval of previous experts, the results were revalidated.
X1.3 Checking the conditions of the field
X1.4 Determining the work scale
X1.4.1 Scale for Small Work
X1.4.1.1 Undertaking direct execution while presenting the list of consumable materials
X1.4.1.2 Doing the work
X1.4.1.3 Sending a job report to the assignor (pphp)
X1.4.1.4 Scale for Large Work
X1.4.2.1 Writing an analytics report (letter of suggestion, drawing, boq, photo)
X1.4.2.2 Discussing locations with the assignor
X1.4.2.3 Discussing and waiting for the assignor’s response
X1.4.2.4 Receiving a job assignment letter from the assignor
X1.4.2.5 Doing the work

X2 Inspection
X2.1 Making a preventive maintenance schedule
X2.2 Creating checklist of equipment condition
X2.3 Reporting data about equipment’s’ condition
X2.4 Disseminating breakdown news (findings)
X2.5 Creating an analytics report (letter of suggestion, drawing, boq, photo)
X2.6 Discussing locations with the assignor
X2.7 Discussing and waiting for the assignor’s response
X2.8 Receiving a job assignment letter from the assignor
X2.9 Doing the work
X2.10 Writing a Work Settlement Report

X3 Overhaul
X3.1 Writing a schedule for preventive maintenance conducted by principal (brand holders)
X3.2 Accepting checklist results of equipment condition
X3.3 Accepting report of equipment condition data from principal
X3.4 Writing breakdown news event
X3.5 Accepting proposal report from principal (plan, boq)
X3.6 Writing a proposal analysis report (letter of proposal, drawings, boq, photo)
X3.7 Sending a proposal report to the assignor
X3.8 Discussing locations with the assignor
X3.9 Discussing and waiting for the assignor’s response
X3.10 Receiving a job assignment letter from the assignor
X3.11 Presenting assignment letter to the principal
X3.12 Overseeing supervision work
X3.13 News of the job completion event

2. GOVERNMENT BUILDING MAINTENANCE OF ROUTINE

X4 Routine Maintenance
X4.1 Prepare a maintenance schedule
X4.2 Present a schedule proposal to the assignor
X4.3 Discuss and wait for the assignor’s approval
X4.4 Do the work
X4.5 Write a realization plan report

REPAIR STAGE

1. REPAIR PLANNING FOR GOVERNMENT BUILDING

X5 Government Financial Planning for Repair
X5.1 Prepare budgeting concept Work Plan and Budget of State / Institution Ministry
X5.2 Presentation to the planning section
X5.3 Moving into the budget section
X5.4 Presentation to the government / finance ministry
X5.5 Accepting indicative ceilings
X5.6 Having discussions on budget
X5.7 Getting a definitive cap
X5.8 If, in the current year, there is a change in the need for improvement which results in the change of budget, the budget revision will be submitted
X5.9 Ceiling can be used

X6 Planning Managed by Self
X6.1 Writing a Letter of Instruction of Planning Task
X6.2 Carrying out a damage survey
X6.3 Demanding user validation for damage
X6.4 Processing Data
X6.5 Planning the Plan for Budget
X6.6 Forming an Image Planning Repair
X6.7 Forming RKS
X6.8 Measuring Job Volume
X6.9 Making a comparison of market unit prices (3 prices)
X6.10 Making Budget Plan, Image and RKS Valid
X6.11 Examining technical planning / results of design process

X7 Direction Planning For Procurement Of Direct Consultation Services
X7.1 Writing Terms Of Reference (TOR)
X7.2 Creating a Contract Design
X7.3 Assessing Budget Plan
X7.4 Writing a Task Order to the procurement official
X7.5 Submitting the procurement document

X8 Planning Selection of Simple Selection Consultancy Services
X8.1 Writing Terms Of Reference (TOR)
X8.2 Creating a Contract Design
X8.3 Assessing Budget Plan
X8.4 Applying General Procurement Plan
X8.5 Writing a General Procurement Plan Invitation Letter
X8.6 Implementing a General Procurement Plan (Discussing TOR)
X8.7 Writing a Letter of Invitation Procurement Plan
X8.8 Implementing LPP (Discussing the draft contract and Budget Plan)
X8.9 Writing Auction Application to ULP
X8.10 Presenting Auction Documents To ULP

X9 Planning Election of General Selection Consultation Services
X9.1 Writing Terms Of Reference (TOR)
X9.2 Creating a Contract Design
X9.3 Assessing Budget Plan
X9.4 Applying General Procurement Plan
X9.5 Writing a General Procurement Plan Invitation Letter
X9.6 Implementing a General Procurement Plan (Discussing TOR)
X9.7 Writing a Letter of Invitation Procurement Plan
X9.8 Implementing LPP (Discussing the draft contract and Budget Plan)
X9.9 Auction Application to ULP
X9.10 Presenting Auction Documents To ULP

2. IMPLEMENTATION OF GOVERNMENT BUILDING REPAIR

X10 Procurement Process of General Selection Construction Service (Above 5 Billion Rupiah)
X10.1 Preparing TOR, material specification to be used
X10.2 Preparing TOR, material specifications to be used
X10.3 Assessing BoQ, RKS, Drawing and making HPS
X10.4 Applying General Procurement Plan to ULP
X10.5 Writing a RUP Invitation Letter
X10.6 Implementing RUP (Discussing TOR)
X10.7 Writing a Letter of Invitation Procurement Plan Implementation
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<td>Implementing RPP (Discussing the draft contract and HPS)</td>
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### 3. SUPERVISION OF GOVERNMENT BUILDING REPAIR

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<td>X15.3</td>
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<td>X15.4</td>
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</table>
5 Conclusion

The results of data collection and analysis revealed that there are 16 (sixteen) business processes which consist of activities that will produce output relating to Maintenance and Planning. Each of these business processes will become SOP (Standard Operational Procedure) which is used as a guideline for implementing maintenance activities, planning, and supervision of building maintenance work on the government buildings which is expected to become a reference for a better and structured implementation in every process.
Fig. 2. Business Process of Maintenance and Repair Work on Government Building

The results of data collection and analysis revealed that there are 164 activities. These activities are associated with a series of flowcharts through which sequences of activities can be understood. The flowcharts also include information about inputs for starting activities, outputs of activities, personnel in charge of each activity, and duration of the activities. From the series of business process and activity flowcharts, a Standard Operational Document of Maintenance and Maintenance Procedure for Government Building has been prepared.

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