

CHAPTER 3 RESEARCH METHODOLOGY

This chapter will explain about the method used in this research. This research will be explained following the five general phases that have been discussed in the previous section.

3.1. Research Methodology

The manner to conduct this research is shown in the following figure.

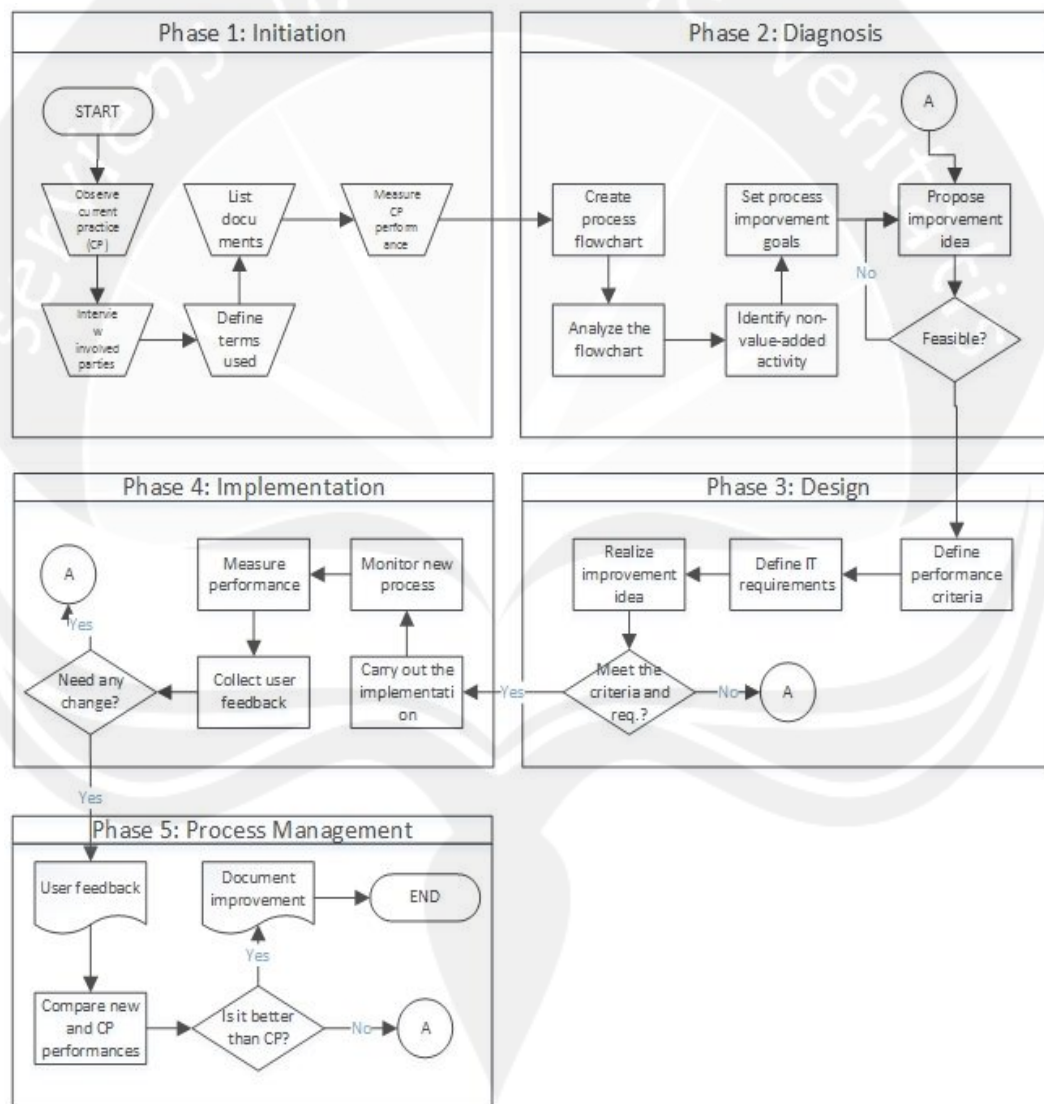


Figure 3.1. Research Methodology

3.1.1. Initiation

The purpose of this phase is to understand the current situation as a whole. An observation was made to have a grasp on how the process works. To have a deeper understanding about the process, interviews with the involved parties in the process is essential (Adesola & Baines, 2005; Gowen & Johnson, 2011; Khan, Bali, & Wickramasinghe, 2007; Seethamraju & Marjanovic, 2009).

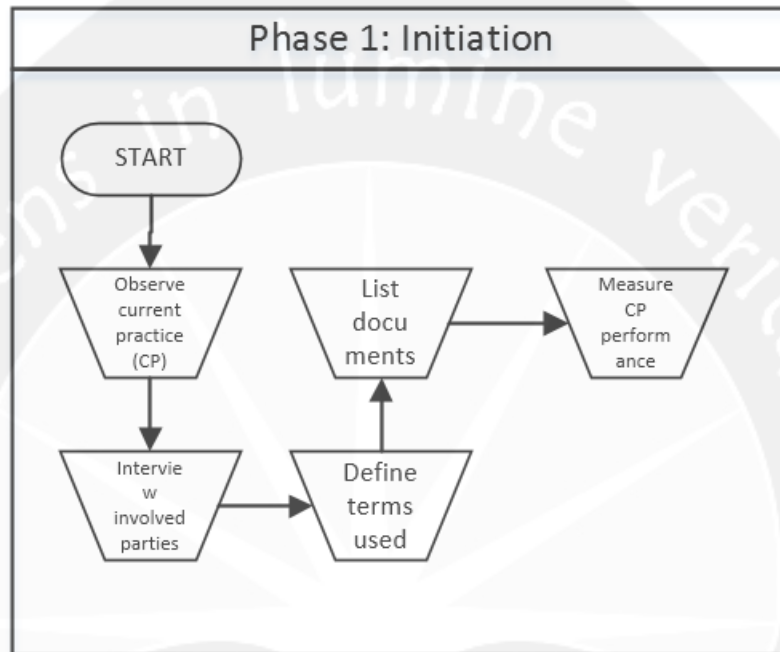


Figure 3.2. Initiation Phase

After the processes are understood, the terms used in the processes must be defined. This is done in order to avoid any misunderstandings and misconceptions between the project owner and the researcher. The list of documents that are used for the process and their use is also explained in this phase.

The last step of this phase is to measure the current practice performance. This step is done in order to get the “starting point” for the improvement goal. To measure the performance, a certain parameter is needed. According to Buavaraporn & Tannock, (2013), there are four important parameters to measure performance: cycle time, work in process (WIP), waste, and error rate. The parameter used to measure performance in this research is cycle time.

3.1.2. Diagnosis

In this phase, the problems pertaining the project will be stated. The focus area of the improvement, improvement goal, and the proposed idea of improvement will also be stated.

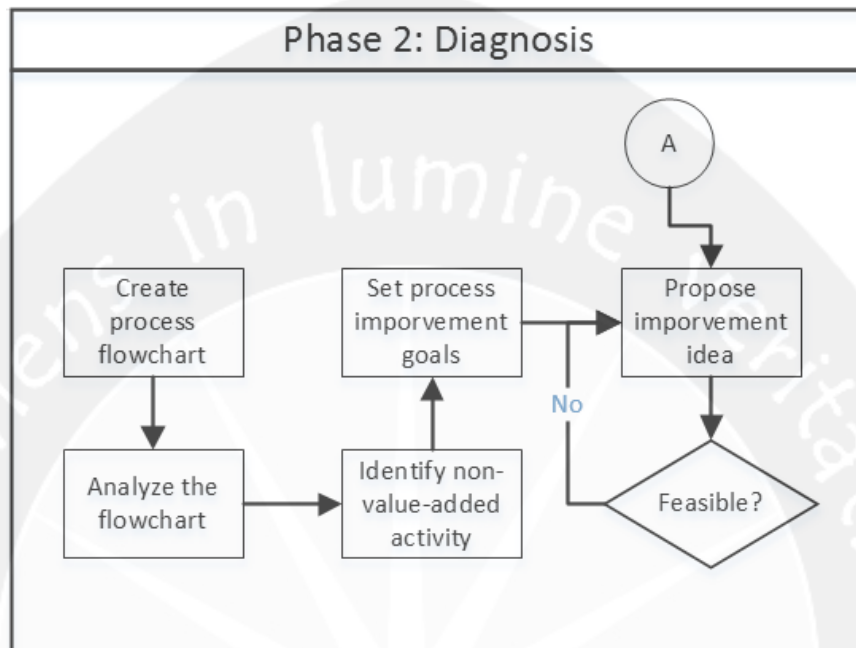


Figure 3.3. Diagnosis Phase

To get the picture of the whole process, a process flowchart was created (Islam & Ahmed, 2012; Sarkar et al., 2014; Soni, et al., 2014; Yadav & Paliwal, 2012; Zairi, 1997). Flowchart is one of the simplest tools used to analyze the process visually (Yadav & Paliwal, 2012). After the flowchart has been analyzed, the focus area of improvement can be selected. The next step would be to decide on the improvement idea. The idea can be generated through brainstorming session (Soni et al., 2014; Zairi, 1997; Zellner, 2011). The proposed idea should be within the capability of organizational resources to make sure it can be implemented (Vergidis, et al., 2006).

3.1.3. Design

The idea proposed in the previous phase will be brought to reality in this phase. Design process is a creative process in order to realize the proposed idea.

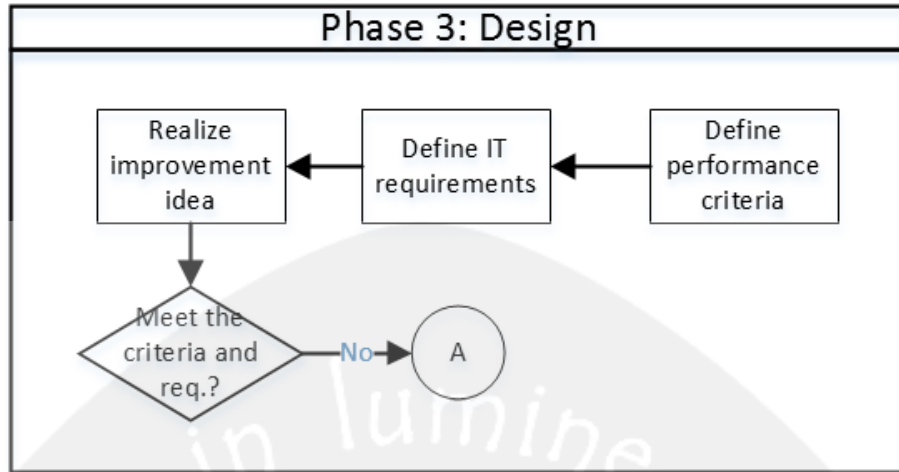


Figure 3.4. Design Phase

This phase is started by defining the desired performance criteria. The criteria set should be in line with the objectives that would be achieved (Herzog, et al., 2007). The criteria can be derived from both of proposed improvement idea and the measurement of current practice. The next step is to determine the IT requirements and levers. The awareness of information technology capabilities can influence the process design (Yair, 2011). The designed improvement then will be realized and tested. If the improvement has met the criteria and requirements, then the project can be taken to the next phase.

3.1.4. Implementation

The implementation phase is the phase where the designed improvements are put to practice.

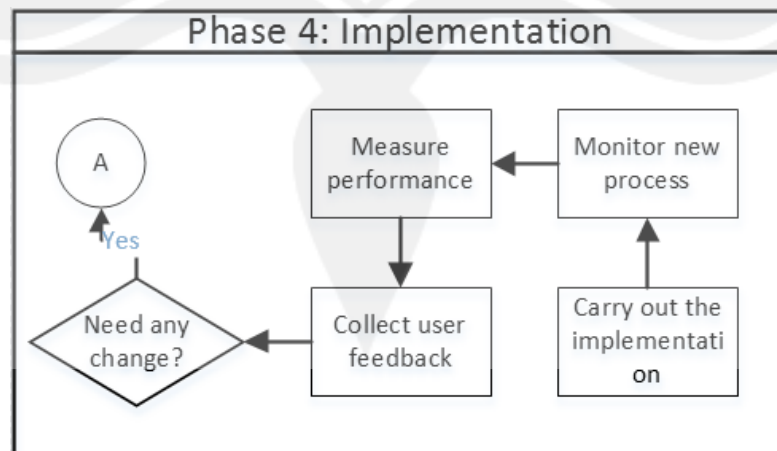


Figure 3.5. Implementation Phase

After the improvement has been implemented, the performance of the improvement will be monitored and measured. By reflecting on the implemented improvement, the activity plans for sub-factors of processes can be prepared (Coskun et al., 2008). User feedback is also collected, this is to have more data on how the implemented improvement affects the user. If any change is deemed to be needed, the process can be restarted from phase two.

3.1.5. Process Management

Process management is a process which is structured, analytical, and provides continuous process improvement (Coskun et al., 2008). The main concern in this phase is to see the comparison between the improved process and the current practice.

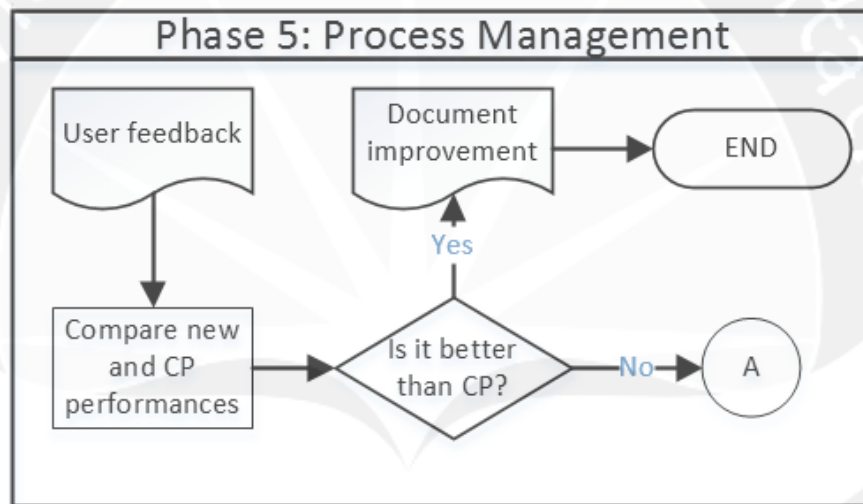


Figure 3.6. Process Management Phase

By taking the user feedback into consideration, the improved process is compared with the current practice. If the desired result is achieved, that is, the improved process is proven being better than the current practice, the improvement is then being documented. The document can be in a form of guidebook on how to operate or what kind of change is there in the improved process.