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Design of Business Process Improvement Survey of Business Activities With Business Process Improvement Approach

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A B S T R A C T

Bank Indonesia Representative Office West Java is one of the companies that makes data and information a very important asset. One of the main ways to obtain data or information is by conducting a survey, namely the Survey of Business Activities (SKDU). In actual conditions, the SKDU process has not been implemented properly, causing a low level of validity and delays in processing time. so this study aims to design a proposed business process to increase the level of validity and reduce processing time. This research method uses Business Process Improvement which is carried out in 4 stages, namely identifying business needs and processes, then modeling and analyzing to find out the cause of the problem, and redesigning the process. The result of this research is the business process improvement by applying value added and automation techniques results in a reduced number of activities in business processes, reduced process actors.

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1. Introduction

In the current era of globalization, data and information are the most valuable assets for a company. Information and data are closely related. Data is the result of direct observation of an event. While information is everything that is communicated that is conveyed by someone through language, oral, newspaper, etc (Nurhayati, N. 2021). The Representative Office of Bank Indonesia, West Java Province, where this final project was carried out, is one of the companies that make data and information a very important asset (Kakbi, 2018).

Bank Indonesia Representative Office West Javais one of the companies that makes data and information a very important asset. The main way to obtain data or information is by conducting a survey, in accordance with pasal 14 UU No.23 of 1999 concerning Bank Indonesia. One of the surveys conducted by Bank Indonesia is the SKDU conducted by the statistical unit and involving external or third parties and prospective respondents every quarter. The purpose of implementing the SKDU is to obtain information on economic developments from the supply side which will be carried out for 33 days. All SKDU operational activities refer to the Term of Reference (TOR). But in actual conditions it has not been implemented in accordance with the TOR SKDU (UU No.23).

In actual conditions which is done by using the observation method by researchers to directly look into the field with the aim of knowing what things are happening during the process (Febrianti, C. 2018., Kevil, M.R., Rosyidi, K. 2017). The SKDU process has not been implemented properly, it is indicated by the low level of data validity and delays in the SKDU processing time. During the implementation of the SKDU, surveys were still taken using traditional methods, where surveys were still taken manually, causing operational problems, namely human errors in the questionnaire filling process by respondents and recapitulation errors made in the data entry process by third parties. This causes the validity level of only 26%, while the target that needs to be achieved is 80%.In addition, the researchers observed that in the SKDU process there was a delay in processing time which should have been completed in 33 days to 41 days.It can be concluded that the validity and time factors are critical factors in the SKDU process. Critical factors that directly affect the accuracy (wuryanto. 2018).

Based on the actual conditions and the condition of the Bank Indonesia Representative Office West Javawhich is starting the digitalization revolution, it is necessary to improve the SKDU business process in order to increase the level of data validity, speed up processing time in accordance with the SKDU TOR, and support companies in the digitalization revolution.In addition, in accordance with quality control, it is important to be carried out by the company so that the products produced are in accordance with the standards set by the company as well as the standards set by local and international bodies that manage quality/quality standardization and of course in accordance with what is expected by consumers (Kevil, M.R., Rosyidi, K. 2017., Fauzi, A., & Mas'ud, M. I. (2019). Business process improvement this business activity survey will use the Business Process Improvement method. With the proposed improvement of business processes, it is expected to be able to optimize operational activities SKDU (Hanisaputro, B. I. 2020).

2. Literature Review

- Process

  Process according to Hammer & Champy, 2001 in Rini Padhilah 2009 is a series of activities that are related and provide added value by converting inputs into outputs for consumers, by combining people, methods, and equipment (Fadhillah, R. (2009).

- Business Process

  Business process improvement (BPI) is a planning methodology in the operation of business processes or employee skills that can be improved so that they can encourage more efficient and effective procedures, workflows for overall business growth.

  A business process is a process that consists of activities or activities that have a logical purpose by using existing resources to produce goals that have been determined by the organization (Fauzi, A., & Mas'ud, M. I. (2019).

- Business Process Improvement

  Business Process Improvement (BPI) is a systematic framework created by the organization or company to improve business processes, including selection, analysis, design and implementation of processes. The focus of BPI is streamlining and eliminating waste and excessive bureaucracy. The function of BPI is to assist companies in improving or simplifying operations. BPI has 3 main objectives, namely (Fauzi, A., & Mas'ud, M. I. 2019).

  Effectiveness : Focusing on customers / clients, whether the process is in accordance with what they want.

  Efficiency : Focus on employees who are responsible for all processes.

  Adaptability : evaluate how easily you can modify business processes based on changing needs.

The following is a process improvement technique using the improvement technique wheel (Hanik, U., & Mas'ud, M. I. 2019).

a. Bureucracy
b. Value Added
c. Duplication
d. Simplification
e. Cycle Time
f. Automation

There are seven stages in implementing Business Process Improvement(Adesola & Baines, 2005):

a. Understand Business Needs
b. Understand the Process
c. Model & Analyze Process
d. Redesign Process
e. Implement New Process
f. Assess New Process and Methodology
g. Preview Process

- Documented Information

  Documented Informationbased on ISO 9001:2015 is information in the form of storage media that needs to be controlled, controlled, and maintained by the organization.Documented information can be in the form of information created in the context of the implementation of operations (documents) and evidence of results achieved (records).

- Monitoring and Control

  The system is a collection or set of elements, components or variables that are organized, interacting and interdependent on each other. Meanwhile, monitoring is a cycle of activities that includes collection, review, reporting and action on information from a process that is being implemented (Febrianti, C. 2018).

  Control is the process to ensure that the activities leading to the desired goal, to ensure that it would require a good management in order to achieve a predetermined goal (Kevil, M.R., Rosyidi, K. (2017).

  Monitoringcarried out in the process of checking between performance and predetermined targets. Monitoring aims to provide information on the continuity of the process and determine corrective steps if needed. Monitoring is done when a process is being implemented (Wuryanto. 2018). Monitoring It has two basic interrelated functions, namely:

  1. *Compliance* monitoring, serves to ensure the process is in accordance with expectations and plans.
  2. *Performance* monitoring, serves to determine the progress of the organization in achieving the targets that have been determined.

  According toMerchant & W., 2007 in Aris Surya Putra 2013 management control has four categories, namely 9 Latifah. 2018):

  1. Action Control
  2. Result Control
  3. Control personnel
  4. Cultural control

3. Methodology

In this final project, the researcher adopts a design science research framework as a problem-solving paradigm/framework because this final project will design a system that will be implemented in the Business Activity Survey (Hanisaputro, B. I. 2020).

Table 1. Methodology

Aspects in the methodology of the final project	This final project	Description
Conceptual framework	Design science research for information system artifact development	● Oriented scientific development through the development of artifacts that are relevant and solution to an environmental context.
Framework / flow /theoretical model /engineering methodology	Business Process Improvement	● In the artifact development process, the steps taken refer to the Business Process Improvement methodology in developing the proposed design for the Business Activity Survey.
Method of collecting data	Company case studies through interviews, observations, Focus Group Discussions (FGD)	● Collecting data to analyze business processes and identify process redesign needs.
Methods of data analysis and system design	● Qualitative data analysis of interviews, FGDs, notes from observations ● Business process modeling	● Interview and FGD data were transcribed and processed qualitatively to identify stakeholder needs. ● Observation notes are used to assist the accuracy of business process modeling.
Tools in software modeling and development	● Modeling: Visual Paradigm ● Development: draw.io.	● Business process modeling using visual paradigm tools. ● System developed using draw.io.
Result verification method	● Validation carried out with related companies. ● Verification of needs through expert judgment ● Change analysis	● Validation is carried out with the Statistical Unit to find out whether the design made has resolved the existing problems. ● Questionnaires and expert judgment to obtain overall evaluation results. ● Change analysis is carried out to find out how much potential the design can implement in the company.

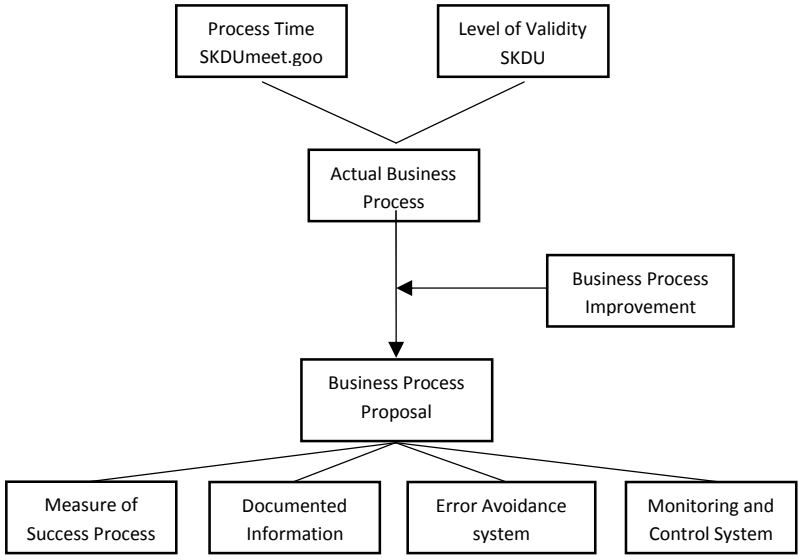

Figure 1. Process

Is a conceptual model which is a framework for identifying and improving business processes for the Business Activity Survey. In the picture, there are some data needed to support this final project, namely the actual business process consisting of SKDU processing time and SKDU validity level. After that, the proposed business process was carried out using the business process improvement method which resulted in several new designs, namely the measure of process success, documented information, error avoidance system, and monitoring and control system.

4. Results and Discussion

a. Model and Analysis Process

Determination of the root cause of the problem by using a fish bone diagram where the root of the problem is seen from Humans, Methods, and Materials. Fishbone identification is divided into two, namely fishbone identification with a low level of validity and fishbone identification with processing time delays.

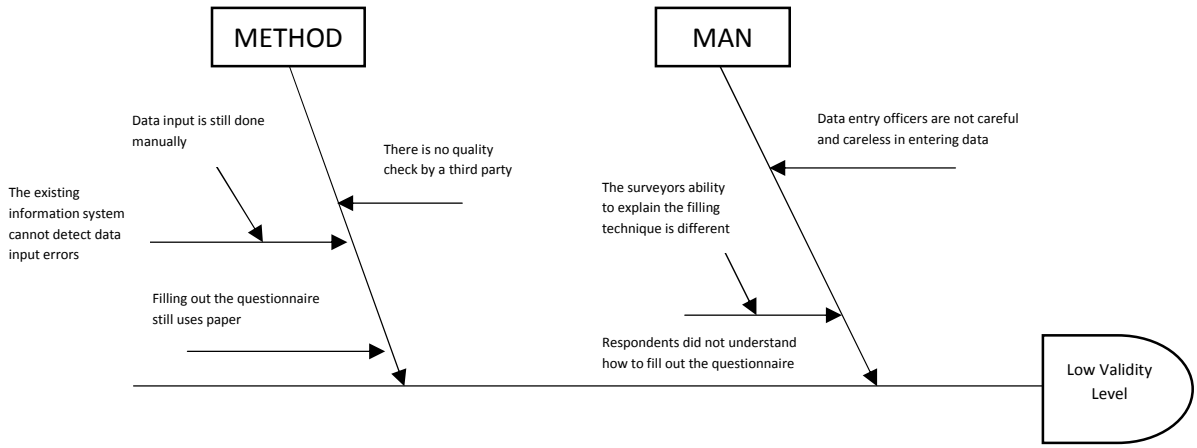

Figure 2. Root Cause

From the fishbone diagram, an analysis of the root causes of the low level of validity in the SKDU process is carried out, such as:

1. Data entry officers (third parties) are not careful and careless in entering data, this causes a low level of validity because one of the criteria for valid data is when the input data and hardcopy data have 100% similarity.
2. Respondents did not understand how to fill out the questionnaire, because surveyors had different understandings for conducting socialization. This results in the respondents' answers having multiple interpretations so that the level of validity is low.
3. The existing information system used is still unable to detect data input errors and data input is still done manually. This causes a large chance of human error, because officers have to input data manually one by one. This is reinforced by evidence that the level of data validity is only about 26% of the 80% target.
4. Filling out the questionnaire is still using hardcopy.
5. There is no third party controlling, so problems are found when the data is already on the statistical unit's side.

Furthermore, an analysis of the root causes that cause delays in the SKDU processing time is carried out, such as:

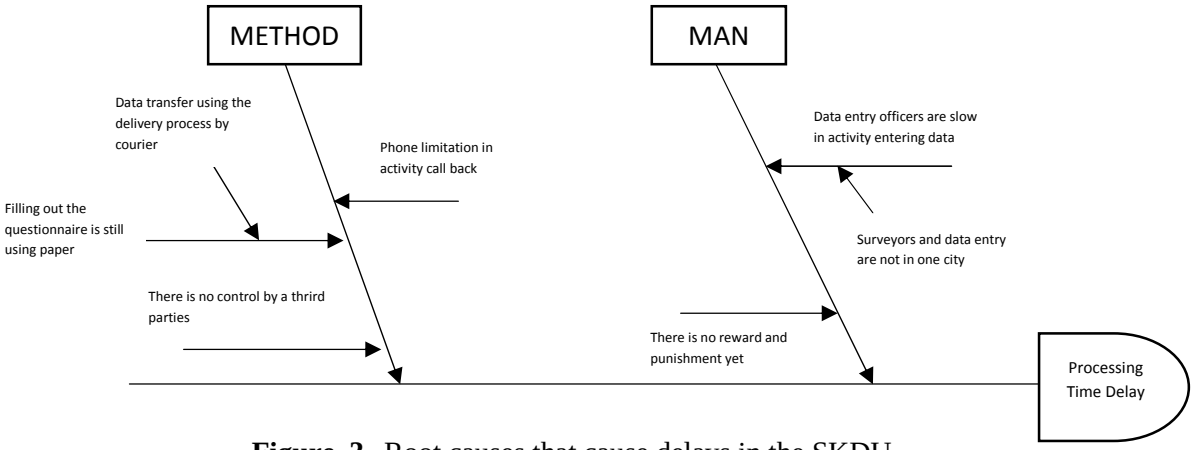

Figure 3. Root causes that cause delays in the SKDU

Filling out the questionnaire still uses hardcopy so that data transfer is still using the delivery process using a courier. Often the delivery process is delayed so there is a waiting time (idle time) and interferes with further activities.

1. There is no time controlling by third parties, so there is no action to avoid delays in processing time.
2. Telephone limitations in the implementation of call back activities. The communication tool used to make a call back is to use an office telephone, while telephones located in the statistics unit cannot make calls outside of Bandung and cannot make calls to mobile numbers. While most of the respondents' contacts are cellphone numbers, it is necessary to ask the operator to connect the number. There is only one operator at KPwBI JABAR, so you need to wait your turn with other units.
3. *Officer entry* the data experienced a delay in inputting data because the surveyors and data entry officers were not in the same city, so there was a need for waiting time for the hardcopy questionnaire answers to arrive.
4. There is no clear reward and punishment, so when a third party takes an action, it is only used for evaluation.

Based on the results of the fishbone analysis, the proposed SKDU business process improvement is carried out by designing:

a. A measure of the success process.

b. Documented information.
c. Error avoidance system.
d. Monitoring and control system.

2. Redegin Process

a. Process Success Measure

Process Success Measures, contains the formula for measuring performance. This size will be used as input for monitoring. The following is a measure of performance criteria(Redhatama, 2020).

Table 2. Process Success Measure

Destination	Performance Indicator	Calculation Formula	Data source	Measurement Time
Collect the necessary data from the results of the interview in accordance with the criteria and objectives.	Percentage of Data Validity Level from interview results	Data Validity Level (TVD)= $\frac{Responden\ answers - invalid\ data}{Responden\ answers} x100\%$ If, TVD > 80% (then, the target is met) TVD < 80% (then, has not met the target)	The results of the surveyor's interview with the respondent	During the monitoring process,
Timeliness in completing the Business Activity Survey process	Completion time	Punctuality (KW) = $\frac{Actual\ time}{Standar\ time}$ If, KW > 1 (then there is a delay) KW < 1 (then acceleration occurs)	Timing of the Business Activity Survey	During the monitoring process,

b. Documented information

The following is the flow of information needed for each process actor:

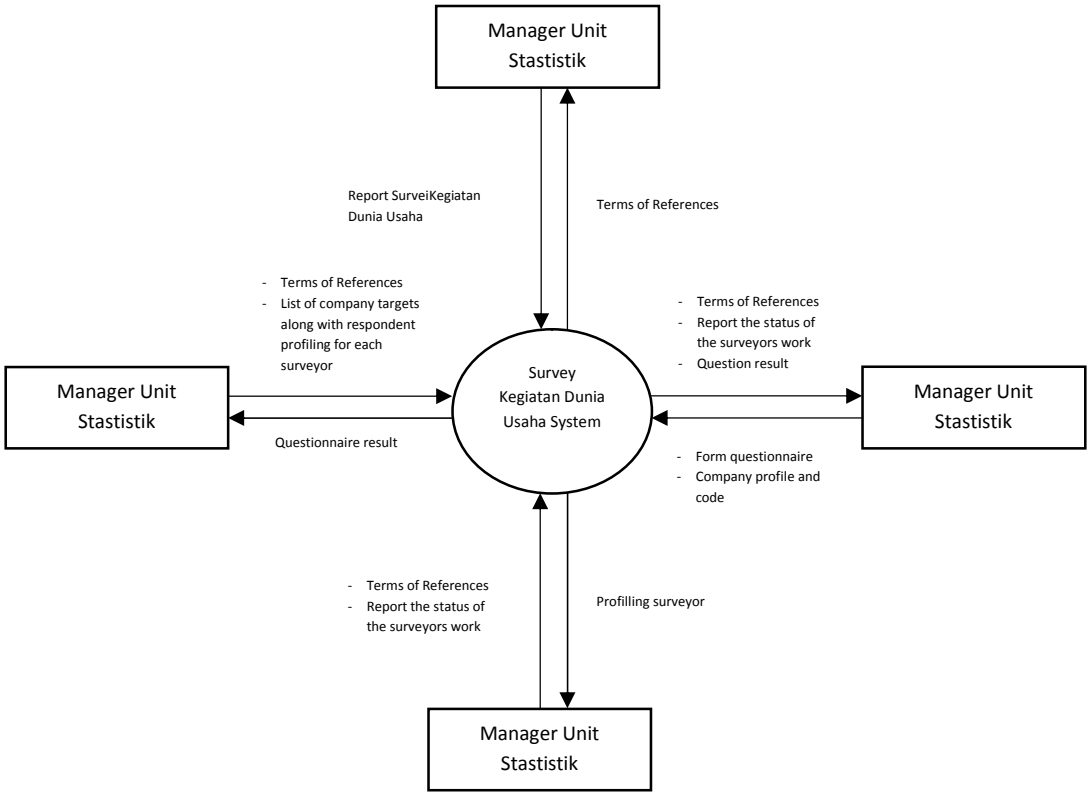

Figure 4. Process actor

c. Error Avoidance System Design

To avoid errors and multiple interpretations of answers, it is necessary to change the technique to an interview and an error avoidance system with the following complementary features.

a. Section

In actual conditions the survey technique still uses paper or hardcopy, so that there are multiple interpretations of answers in filling out the questionnaire by respondents. This causes the level of validity to be low, so a section feature is needed to avoid multiple interpretations of answers.

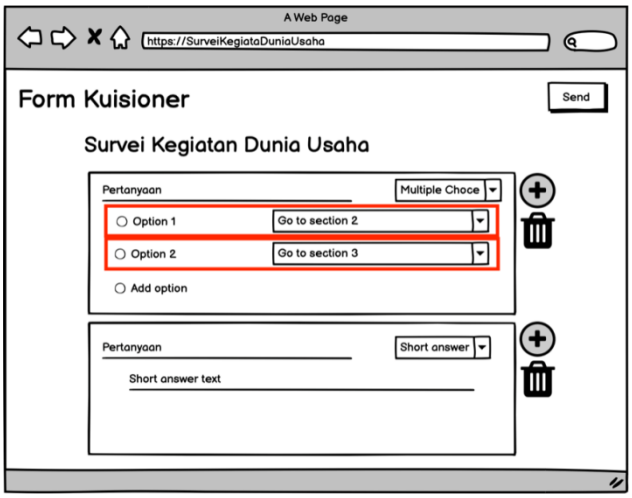

Figure 5. Section Features Mockup

Figure IV.6 explains the section features where when the surveyor inputs the results of the answer "Yes" it will continue in section 2 and if the surveyor inputs the answer "No" then the questions will then move on to section 3. , avoid human error and can increase the level of validity.

b. Required

One of the things that caused the low level of validity in the SKDU process was that the questionnaire questions were not answered thoroughly. So, required features are needed to help surveyors if there are missed questions. This feature will control the completeness of the questionnaire completely and give a notification when the surveyor clicks submit but there are questions that have not been filled out. Notification display as follows.

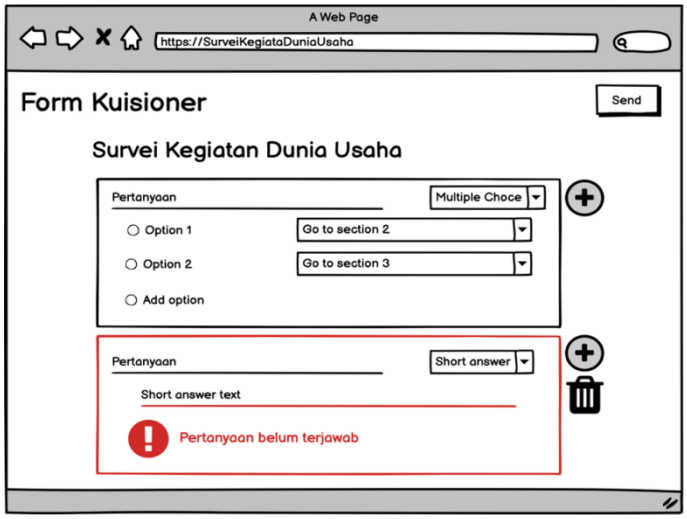

Figure 6. Required Feature Mockup

So that by using this feature there is no possibility of unanswered questions which will increase the level of data validity in accordance with the established criteria.

c. Database matching

One of the factors that cause delays in processing time is because in call back activities not all respondents can be contacted and the limitations of communication tools in carrying out these activities. Then the matching database feature was designed to simplify activities. This feature is carried out after the surveyor conducts an interview with the respondent. The following is a flowchart of the matching database feature.

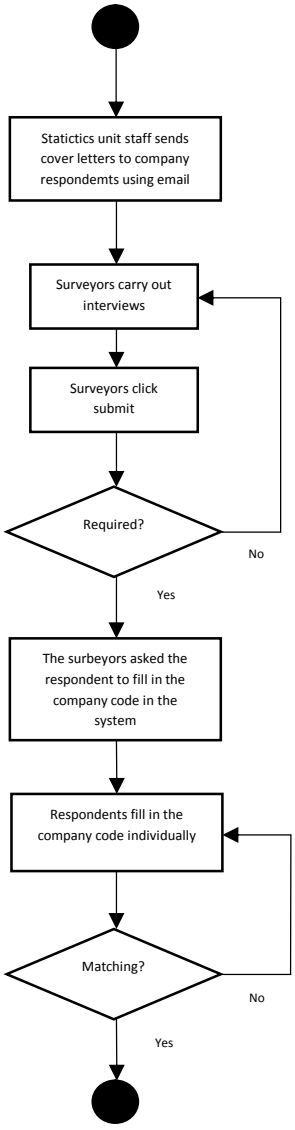

Figure 7. Database matching

d. Monitoring and Control System Design

The purpose of this monitoring system is to find out to what extent the surveyor has carried out his duties and whether the results of the surveyor's work are in accordance with the objectives or targets of the implementation. The following is a flowchart of the monitoring activity cycle.

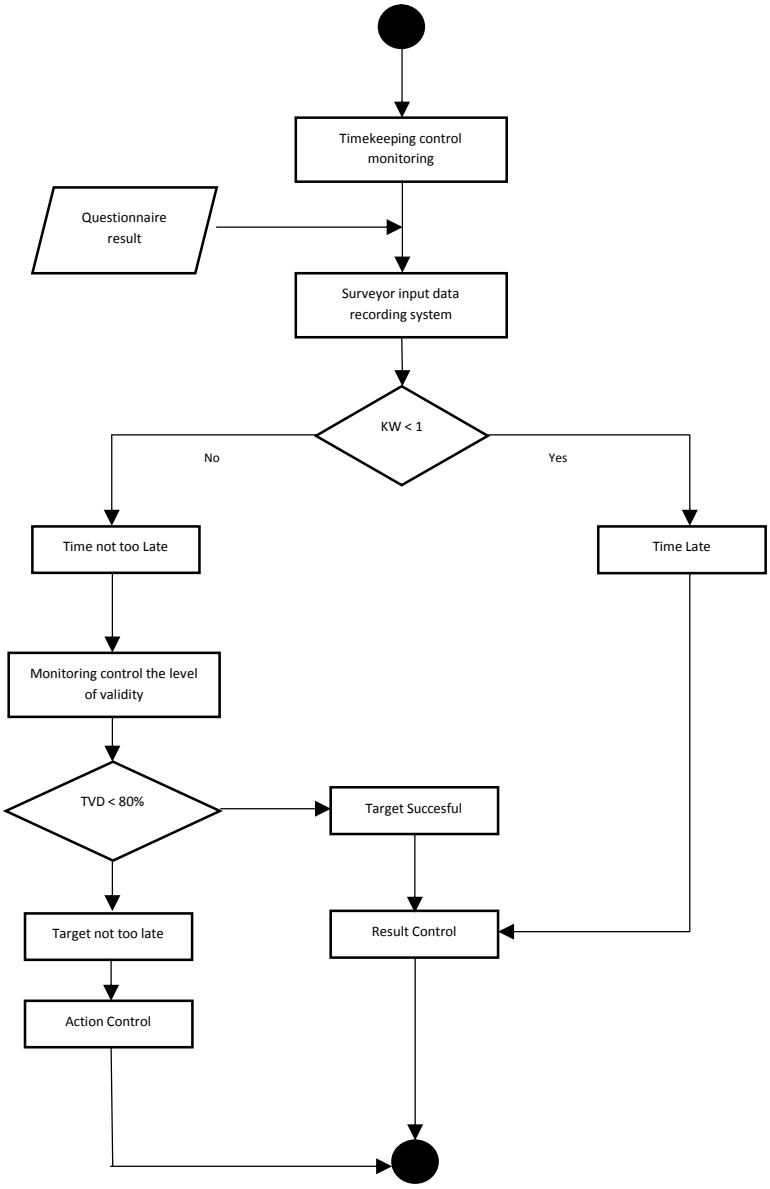

Figure 8. Monitoring and Control System Design

The following is a control action when the surveyor carries out his duties and the project manager monitors during the interview.

Table 3. Action Control

Level	Time	Validity Level	Action
Low	8th day	<80%	Reminder is done using ssstem.
Medium	Day 10 and 11	<80%	The project manager does follow-up by telephone.
High	More than 14 days	<80%	Given SP1.

The following is a control action when the surveyor carries out his duties and the project manager monitors during the interview.

d. Proposal business process design

The following is the business process design proposed by the Business Activity Survey.

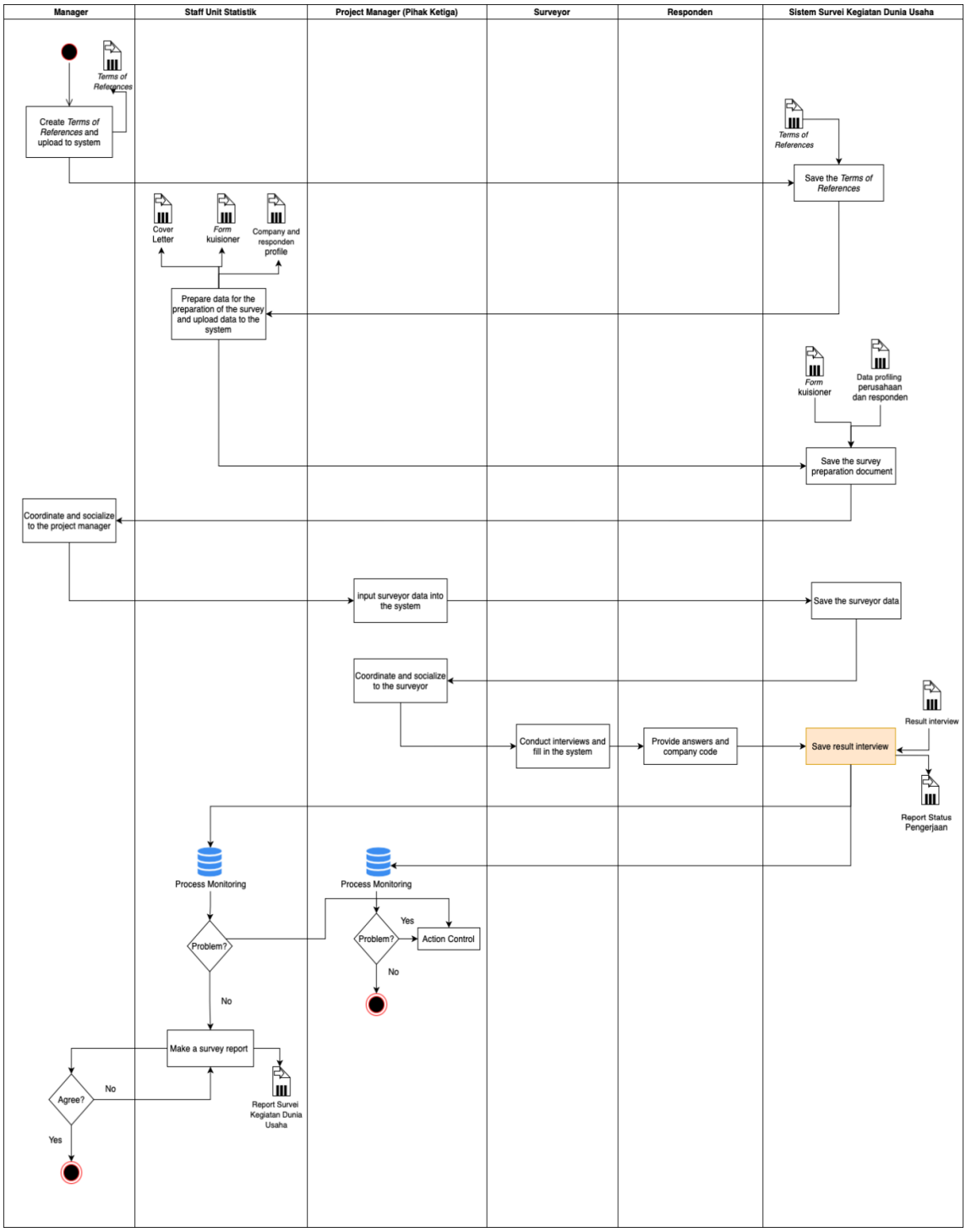

Figure 9. Proposal Business Process Desgn

5. Conclusion

So the conclusion of this research is the result of the proposed business process design using the measure of process success, documented information, error avoidance system and monitoring and control system, it is known that the activity is reduced by 4 activities. Questionnaire submission activities to data entry officers, data input activities, and questionnaire results submission activities to statistical units are eliminated by using an integrated automation system, namely by using an online questionnaire form that has an error avoidance system. In addition, call back activities carried out by statistical unit staff are simplified by using an error avoidance system with a database matching feature. In addition, by using this proposed business process, one process actor is reduced, namely the data entry officer,

With the reduction in activity, the time for business processes will be reduced, in addition to the design of the SKDU process, process actors do not have to wait for the previous activity to complete, because business processes are designed with an integrated system so that they can be carried out simultaneously In addition, the proposed business process will increase the level of validity by changing the technique to interview and using a problem avoidance system.

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