

# Business Process Analysis at Noura Bookstore Using the Business Process Improvement Framework Method

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## ABSTRACT

The vision of the naura bookstore is to provide the best service for consumers. The problem arises when the store grows in size, namely that there is no written business process that is a benchmark in running a business, so that the decisions made can change based on conditions causing business processes that are less effective and efficient. For this reason, business process analysis using the Business Process Improvement (BPI) Framework is needed. The first phase is editing the business processes of the Galuh Bookstore using the Business Process Model and Notation (BPMN), the second phase is conducting Process Validation, Time Validation and Resource Validation on business processes. Then determine the streamlining used to improve the effectiveness and efficiency of business processes. From the results of the proposed analysis, it was found that there was an increase in time in sales transactions of 64.37%, buyer transactions by 77.9%, price labeling of 30%, and editing of goods data by 25.9%.

**Keywords:** Business, Process Improvement, Book, Store

## 1 Introduction

An organization certainly has a goal to achieve. In order to achieve organizational goals, business strategies and processes are needed. A business process consists of a series of activities carried out in coordination in a business and technical environment. The series of activities aims to realize business strategies (Susanto et al., 2018). Business organizations are required to quickly adapt to the conditions faced in order to seize a wider market share and achieve the target so that business organizations strive to do everything in their power to achieve these targets.

Business processes are a series of activities carried out in coordination within the organizational environment and the technical environment (Fahrizal et al., 2018). Business process activities play an important role in the development of business organizations as one of the pillars of business support, the quality of business processes determines how a service or product is made. (Fahrizal et al., 2018). Business processes reflect how the business is managed, a bad business process will of course cause many problems both directly and indirectly. In improving business processes, it is necessary to have process modeling so that all parties who have interests in the community know the general picture of the business processes that are currently running, after which an evaluation is carried out to find out the problems that exist in the business process and then can be analyzed

which process will be improved (Fahrizal et al., 2018). Every business organization, whether profit-oriented or not, certainly has a rule or more how the activities contained in the business organization are carried out. These rules are made to ensure that the work or task can be completed properly.

Sales at the naura bookstore can be done by Purchase Order (PO) or directly if the inventory in the warehouse meets the buyer's demand. This naura bookstore also does not have a pricing for its products. Every time there is a buyer's offer, it is believed that it can benefit the company or not. The naura bookstore always maintains and improves service to customers in order to become the best bookstore. This naura bookstore sells all school and office needs, it is known that in this naura bookstore there are problems that interfere with the running of sales business process activities such as long queues at the cashier, sending data on new goods to the cashier for too long so that new goods cannot be sold immediately, or even in the process of selling goods is still not neatly arranged. So that the sales business process becomes less than optimal. With the problems described earlier, it is necessary to conduct further analysis to determine the business processes and activities that have the potential to cause these problems.

To help analyze business processes, the Business Process Improvement (BPI) Framework method is used by modeling business processes using BPMN, then analyzing the activities of each task in BPMN and providing business process recommendations.

## **2 Research Methodology**

The stages in this study are described as follows :

### **2.1 Needs analysis**

At this stage, an analysis of what needs are needed in this study is carried out. The stages carried out in conducting needs analysis are divided into two, namely:

#### **2.1.1 Interview**

The interview was conducted by asking a questionnaire of questions to respondents and the owners of the naura bookstore. The questions asked during the interview were the naura bookstore business process, the engagement process, the business process, the business needs, the business challenges, and the future goals of the naura bookstore.

#### **2.1.2 Observation**

The interview was conducted by asking a questionnaire of questions to respondents and the owners of the naura bookstore. The questions asked during the interview were the naura bookstore business process, the engagement process, the business process, the business needs, the business challenges, and the future goals of the naura bookstore.

### **2.2 Study literature**

Literature study in the form of in-depth theory from several references to books on business processes and previous research journals, discussing business process analysis, especially related to Business Process Improvement.

### **2.3 Analysis of current business processes**

At this stage, an analysis of the business processes running at the naura bookstore is carried out. The analysis of business processes is adapted from the phases found in BPI, Phase 1 and Phase 2. Stage 1 collects data in the naura bookstore environment, such as the organizational structure, the duties and responsibilities of existing stakeholders, the goals and objectives that the naura bookstore wants to achieve. In phase 2, business process

modeling is carried out using Business Process Model and Notation graphs, business process simulations described using the Bizagi Modeler tool and business process evaluation.

## 2.4 Business process recommendations

At this stage, stage 3 of Business Process Improvement is carried out to determine what actions are taken in the activities found in each business process using 12 streamlinings. The results of Streamlining are in the form of recommendations for business process improvement, the results will be modeled using Business Process Model and Notation and simulated using Bizagi Modeler, comparing the results of the current business process simulation with the business process recommendations.

## 3 Results and Discussion

### 3.1 Current Business Processes

This stage is the implementation of phase 1 of BPI, namely organizing for improvement by analyzing which business processes must be improved in business processes. The following is the sales business process at the Naura bookstore:

- a) Sales transactions
- b) Edit item data
- c) Freight forwarding
- d) Price labeling
- e) Purchase transactions
- f) Monthly cash statements.

### 3.2 Business Process Selection

Not all business processes in the naura bookstore require improvement or improvement. The business process that will be improved or improved is a business process that has a big impact, the author uses CSF (Critical Success Factor) and weighting selection to determine the business process that is a priority. There are 5 business processes, namely (PB 01) Price Labeling, (PB 02) Editing Goods Data, (PB 03) Sales Transactions, (PB 04) Purchase Transactions, (PB 05) Shipping Goods (PB 06) Monthly Cash Statements. The business processes contained in the Naura Bookstore will be assessed with CSF (criteria: (K1) data stored well, (K2) uncomplicated activities, (K3) fast activity time. The results of the CSF calculation are as follows:

**Table 1:** Weight value scale

Value	Definition	Description
1	Equally important	Both criteria have the same influence
3	A little more important	The assessment is slightly more in favor of one of the criteria than the partner.
5	More important	The assessment is very biased towards one of the criteria over the partner.
7	Very important	One of the criteria is very influential and its dominance is evident.
9	Absolutely very important	One of the criteria proved to be absolutely preferable compared to his partner.

2,4,6,8    Middle value    If there is any doubt between the two adjacent assessments.

From the results of the calculations carried out by the author using the critical success factor (CSF), it can be known that the selection of critical business processes is the provision of price tags PB 01, editing the data of goods PB 02, Sales transactions PB 03, and purchase transactions PB 04. With the selection of the results of the business process calculation carried out by the author, the author produced the following results:

**Table 2:** Summary of formatting requirement for submitting paper in this journal.

PB	K1	K2	K3	K4
01	9	4	6	19
02	9	4	9	22
03	9	6	9	24
04	9	4	6	19
05	6	2	9	17
06	9	2	3	14

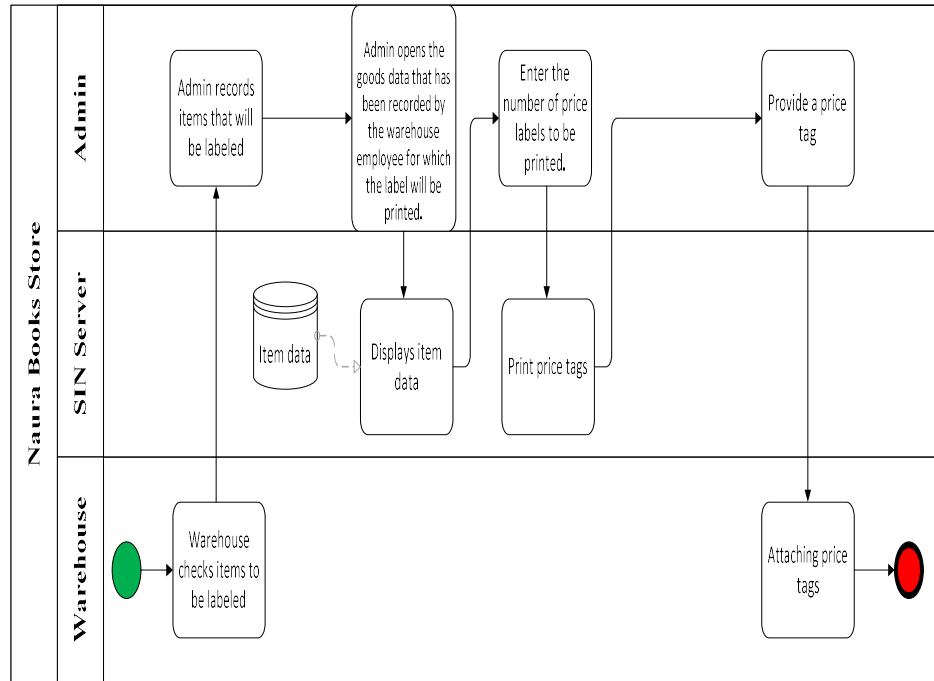
From the table above, it can be seen that the critical business process is the giving of price tags PB 01, editing data of goods PB 02, Sales transactions PB 03, Purchase transactions PB 04.

### 3.3 Business Process Modeling

Business process modeling is made using the notation BPMN (Business Process Modeling and Nation). This stage is the implementation of phase 2 of BPI, namely understanding the process. The business processes to be identified are critical business processes that have been selected using the CSF (Critical Success Factor) method, these business processes include:

#### 3.3.1 Price labeling

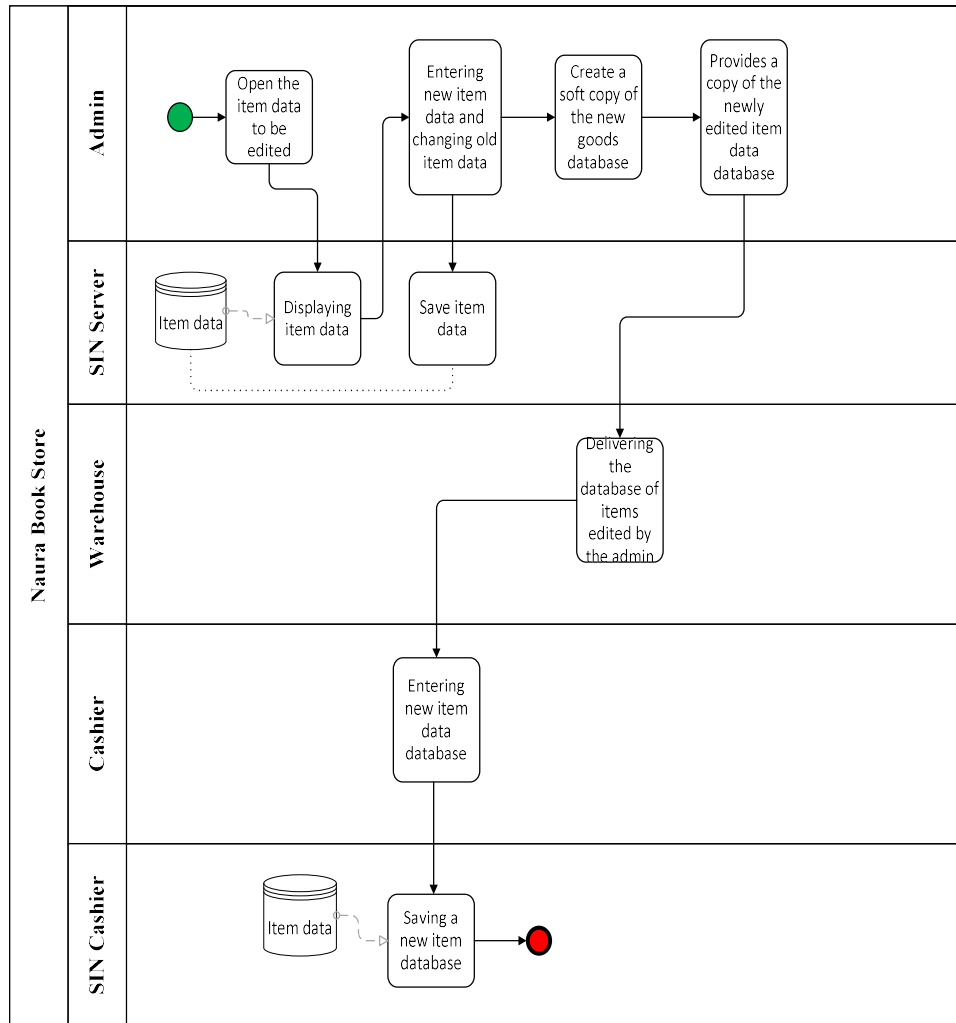
The warehouse employee will check the goods that will be priced after that will be notified to the admin will record the goods that will be priced after that the admin opens the data of the goods that have been checked by the warehouse employee on the SIN server then the SIN server will display the goods data then the admin enters the data of the goods to be printed after that the SIN server will print the price tag requested by the admin after it is finished printing the admin will re-record the price tag that will be affixed to the goods after completion The admin will give the price tag to the warehouse employee to be attached to the goods



**Figure 1:** Current price labeling business processes

### 3.3.2 Edit item data

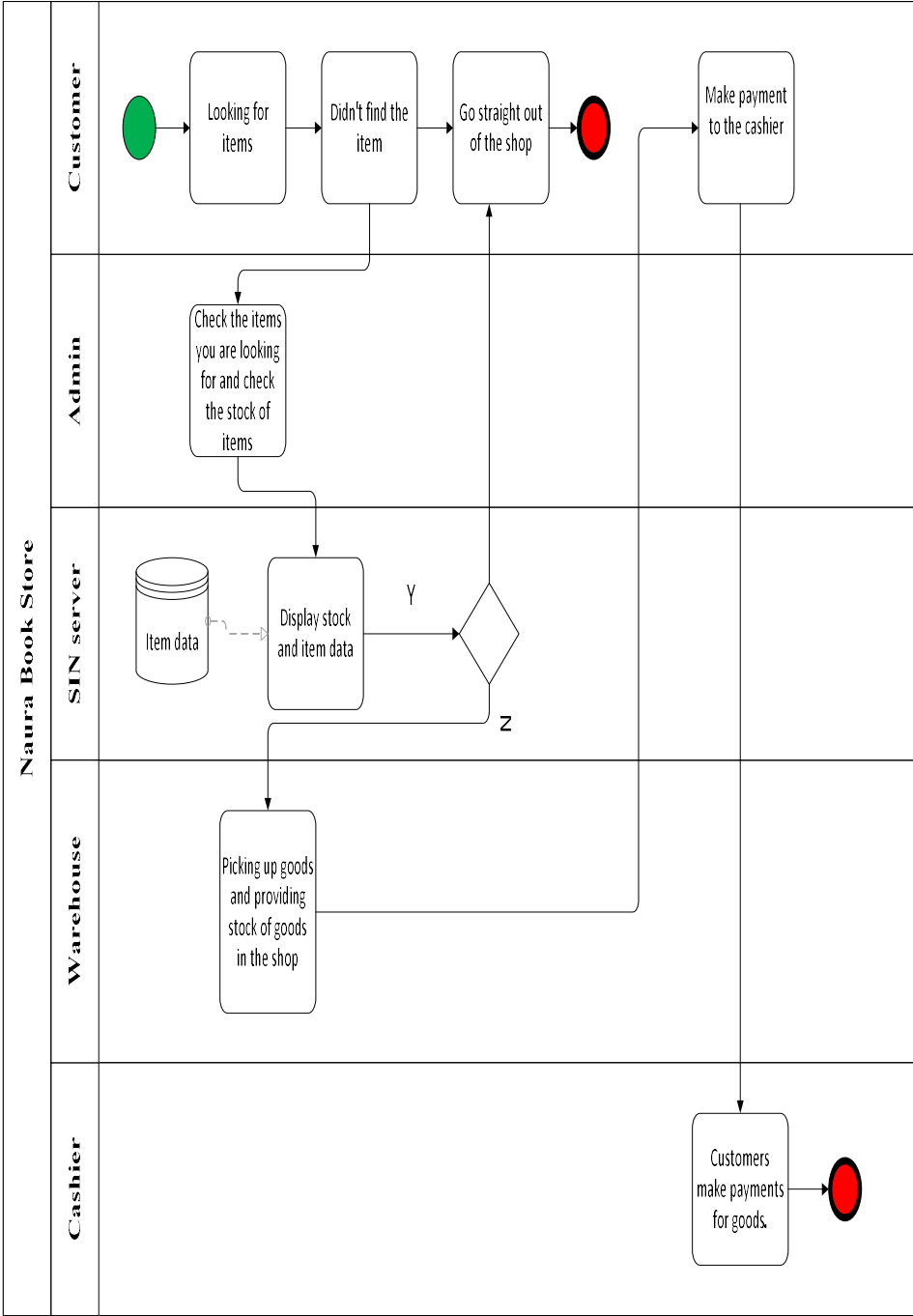
The admin will open the data to be edited, after that the SIN server will display the data of the goods, then the admin will enter the data of the new goods and change the data of the old goods, after that the admin will make a softcopy of the database of the new goods, after that the admin will give a copy of the database of the edited goods to the warehouse employee as soon as that the warehouse employee will check the database provided by the admin the warehouse employee is also responsible for ensuring the security of the goods database The new one, after being confirmed to be safe with the warehouse employee, will deliver the new item data database to the cashier, after that the database of new goods given by the warehouse employee will be checked again by the cashier after checking, the cashier enters the data of the new goods edited by the admin to the cashier's SIN and then the cashier's SIN will save the new database.



**Figure 2:** Business process edit current item data

### 3.3.3 Sales transactions

The customer will look for the goods and ask if there is still stock of goods, the cashier will check the data of the available goods, if the goods are still there, the warehouse employee will take it from the warehouse and give it to the customer, after which the customer makes the payment. If the stock of the goods you are looking for is no longer there, the warehouse employee will report it to the cashier, then the cashier will make a report of the goods that have run out to the store manager.



**Figure 3:** Current sales transaction business processes

**3.4 Proposed Business Process Time Simulation Results**

After going through several stages of bpi and getting the results of the proposed business process, the author calculates the time of the proposed business process where the data entered in each simulation process is obtained from observation steps. The data includes the number of processes executed in a given time, the time

spent on each activity and the resources involved in each activity. The proposed business process after the Business Process Improvement (BPI) evaluation was carried out, resulting in a 64.37% faster proposed sales transaction business process, 77.9% faster business process for the proposed purchase transaction, 30% faster business process for labeling the proposed price, and a 25.9% faster business process for editing the proposed goods data. The following are the results of the proposed business process time simulation:

**Table 3:** Proposed business process time simulation results

<b>Recommendation business process</b>	<b>Time</b>
Price labeling	35 minutes
Edit item data	40 minutes
Sales transactions	1.4 minutes

### 3.5 Comparison of Current Business Process Time with Proposed Business Process Time

The business process model at Naura Bookstore that has the highest Critical Success Factor (CSF) value is the business process of sales transactions, purchase transactions, price labeling, and item data editing. The business process actors are warehouse employees, cashiers, customers, suppliers, admins and supported by the SIN Server and SIN Cashier information systems. The sales transaction business process currently takes 4.8 minutes, with problems with process execution at the Cashier SIN that is too long. The current purchase business process takes 16.3 minutes with problems with admins who have too long waiting times. The price labeling business process takes 50 minutes with the problem of manual labeling activities taking a long time and admins having too long waiting times. The business process of editing goods data currently takes 54 minutes with the problem of sending data from SIN Server to SIN Cashier is still manual. The following is a comparison of the results of the current business process time simulation with the proposed business process time:

**Table 4:** Comparison of initial business process time with recommendations

<b>Business processes</b>	<b>Before</b>	<b>Recomendation</b>	<b>Time comparison</b>
Price labeling	50 minutes	35 minutes	15 minutes
Edit item data	54 minutes	40 minutes	14 minutes
Sales transactions	4.8 minutes	1.4 minutes	3.4 minutes

#### 4 Conclusions

The problem arises when the store grows bigger, namely there is no written business process that is a benchmark in running a business, so that the decisions made can change based on conditions causing business processes to be less effective and efficient. For this reason, business process analysis using the Business Process Improvement (BPI) Framework is needed. The first phase is editing the business processes of the Naura Bookstore using the Business Process Model and Notation (BPMN), the second phase is process validation, time validation and resource validation in business processes. Then determine the streamlining used to improve the effectiveness and efficiency of business processes

The author hopes that this proposed business process will make development and progress for the naura bookstore so that it can develop into a more effective and efficient bookstore and be at the forefront of the business field of book sales, office stationery and school supplies. The author also hopes that the business process can be carried out quickly so that customers are satisfied with the services of the naaura bookstore.

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