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PURCHASE MANAGEMENT INFORMATION SYSTEM DESIGN AT PT. NOP INDONESIA BASED ON DESKTOP APPLICATION

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Abstract-The Purchasing Department is an important part of a company when it comes to the procurement of goods because, without a Purchasing Department, the company's operational continuity can be disrupted. PT. NOP Indonesia as a manufacturing company that produces various kinds of flexible fine packaging made of resin (plastic seeds) requires a system that can control the availability of raw materials, production equipment, and office supplies to support business and company operations. The purpose of this system is to facilitate the process of purchasing goods/items, to help manage and control purchase data, and to assist Purchasing Managers in controlling and approving purchase documents or data.

Keywords- Purchase Management, Information System Design, Desktop-Based

1. INTRODUCTION

Every Technological Development at this time has become an important aspect that must exist in every company to support business processes within the company. In Indonesia, several companies still do not have an adequate system to manage their company's operations, where for certain processes the company still uses manual methods to run its business processes.

PT. NOP Indonesia as one of the manufacturing companies that produce fine flexible packaging made from plastic seeds does not yet have an adequate purchasing management information system, where several processes such as the input of Purchase Requisition (PR) data from other departments and distribution of Purchase Order (PO) documents, approval by the Purchasing Manager, sending Purchase Orders (PO) to Suppliers to control the receipt of goods is still done manually with a system that is not integrated. This causes many problems in the purchasing process that have a direct impact on the company's operations.

Based on the existing problems, the authors decided to make a "Purchase Management Information System Design at PT. Desktop-Based Indonesian NOP" tailored to the needs of the Purchasing Department.

The purpose of making this system is to make it easier for other departments to create and submit Purchase Requisitions (PR), make it easier for Purchasing Staff to process purchase data, and make Purchase Orders (POs) based on Purchase Requisitions (POs) that have been made, as well as facilitate the Purchase Order (PO) distribution process.) and approval by the Purchasing Manager, then Purchasing Staff can also receive real-time information on the arrival of goods, making it easier to ascertain the actual number of goods coming to the Warehouse.

II. LITERATURE REVIEW

A. Purchasing Management in Purchasing Department

Purchasing Management is a way of managing various goods needed by the company which serves as a liaison between the Supplier and the Company in the process of procuring goods and services for business continuity and company operations.

While the Purchasing Department is a part of the Company in charge of managing and making purchases of goods or services to suppliers, also ensuring that the purchased goods need to be obtained at the best price and quality. Several steps need to be taken by the Purchasing Department in the purchasing process, including:

1. Understand the demand for goods or services
   Understanding the need for demand for goods or services is something that needs to be done in the Purchasing process. Where the part in need will submit a PR Form which has been approved by the relevant Manager.
2. Supplier Selection
   Supplier selection is carried out to find those who have a good reputation, have sound fundamentals, and have a commitment to be able to develop together.

3. Negotiation
   Negotiations are carried out in order to reach agreement and common goals.
4. Purchasing
   Purchasing are made by the company taking into account things such as item details, length of use, quantity of goods, and payment due.
5. Follow-up on orders
   Purchasing staff will follow-up by sending an email or contacting by phone to monitor the progress of the ordered goods.

B. Purchasing Management Information System

According to AF Stoner in his book entitled "PLANNING & DECISION MAKING: In Management" says that a management information system is a method that can provide accurate and real-time information to management so as to facilitate decision making, and also make organizations operate and operate effectively. planning and controlling effectively. In a company with a large capitalization, the purchasing process is generally carried out using an integrated Purchasing Management Information System to support and facilitate the needs of Purchasing Management.

III. RESEARCH METHODOLOGY

Development of Purchasing Management Information System at PT. This Indonesian NOP was created using the Waterfall Development Model method. The stages in the Waterfall Development Model are as follows:

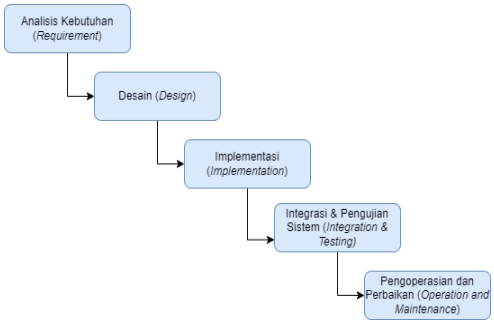

Figure 1. Waterfall Model

- Analysis (Requirements)
  Analyze user requirements for the system to be built. Information is obtained by conducting interviews, surveys, observations, etc.
- Design (Design)
  The purpose of this stage is to have a clear picture of the system interface.
- Implementation
  The implementation stage isa by coding based on the design that has been made.
- System Integration & Testing (Integration & Testing)
  Next is to perform integration and testing on the system that has been built.
- Operation and Repair (Operation and Maintenance)
  Then in the last phase or stage is to carry out installations and periodic repairs on systems or applications that are already running.

IV. SYSTEM ANALYS AND IMPLEMENTATION

4.1 System Analysis

In system analysis, it is divided into 2, namely system description and use case diagram.

The Purchasing Management Information System is built on a desktop basis so that it can be run with devices that have the application installed and connected to the company's local network. The features provided are as follows:

1. Users can login to the application by entering the userID (NIK) and password that have been registered in the system
2. Administrator can add new User data.
3. The menu that can be accessed by the user in the application is adjusted based on the user's role and department
4. Provides data processing features such as add data, edit data, view data, and delete data for Purchase Requisition (PR), Purchase Order (PO) data, Sourcing, Request for Quotation (RFQ), Quotation, Good Receipt, and Master Data Item/ Supplier
5. Provides data search feature
6. Provides a Purchase Order (PO) Automation feature
7. Provides Sourcing features
8. Provides Supplier Selection features
9. Provides Send Email RFQ and PO features to Suppliers
10. Provides the Input Quotation feature
11. Provide PR/PO Approval feature for Manager
12. Provide Good Receipt feature for Warehouse section

4.2 Use Case Diagram

The following is an overview of the Use Case Diagram for a Purchasing Management Information System.

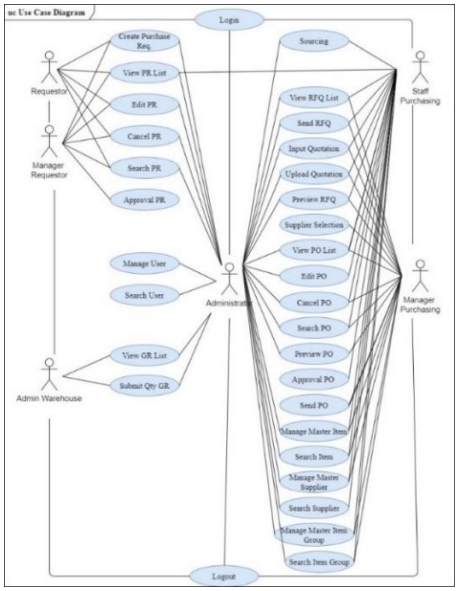

Figure 2. Use Case Diagram

4.2 System Design

In system design, it is divided into 2, namely user interface and database design.

A. User Interface Design

UI design describes the appearance of the system interface that will be seen by the user when the system is used later. UI designed with clarity and intuitiveness in mind and its benefits for users.

Figure 3. User Interface of Login

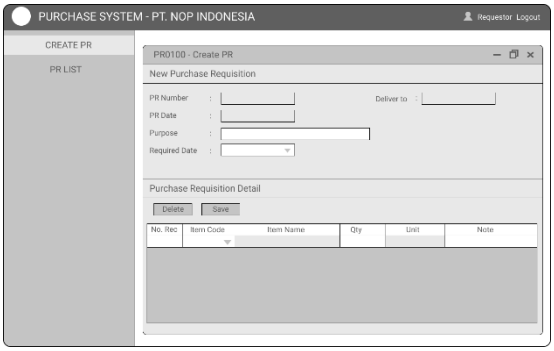

Figure 4. User Interface of Create PR

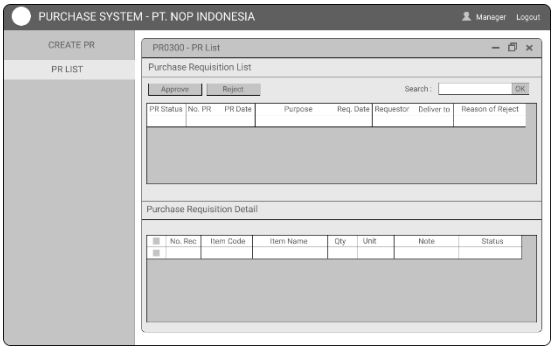

Figure 5. User Interface untuk Approval PR

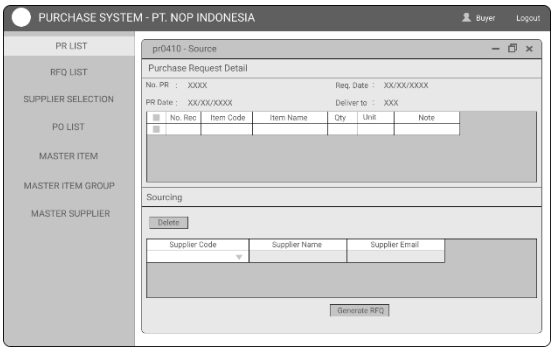

Figure 6. User Interface of Sourcing

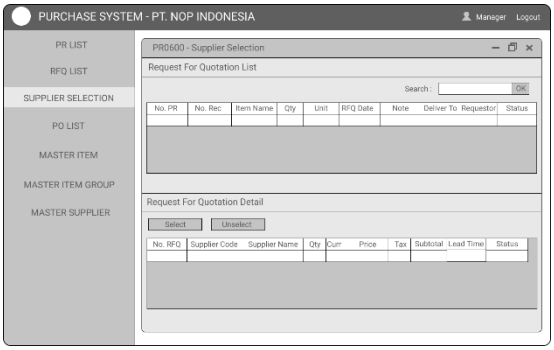

Figure 7. User Interface of Supplier Selection

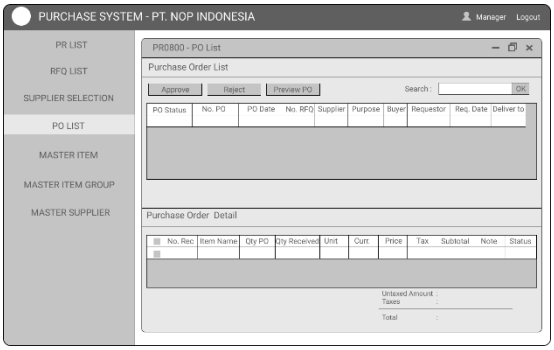

Figure 8. User Interface of Approval PO

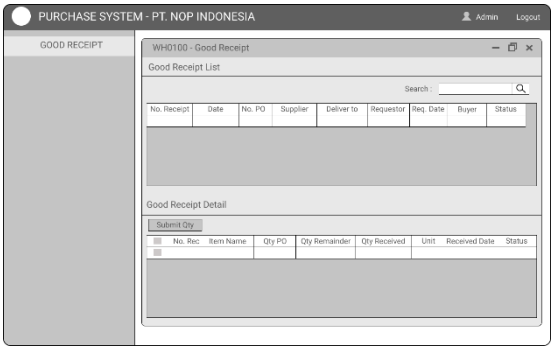

Figure 9. User Interface of View GR

B. Database Design

The database design is made in the form of an Entity Relationship Diagram (ERD) which is a diagram that describes the database used to identify each entity and data and then the relationship between the data.

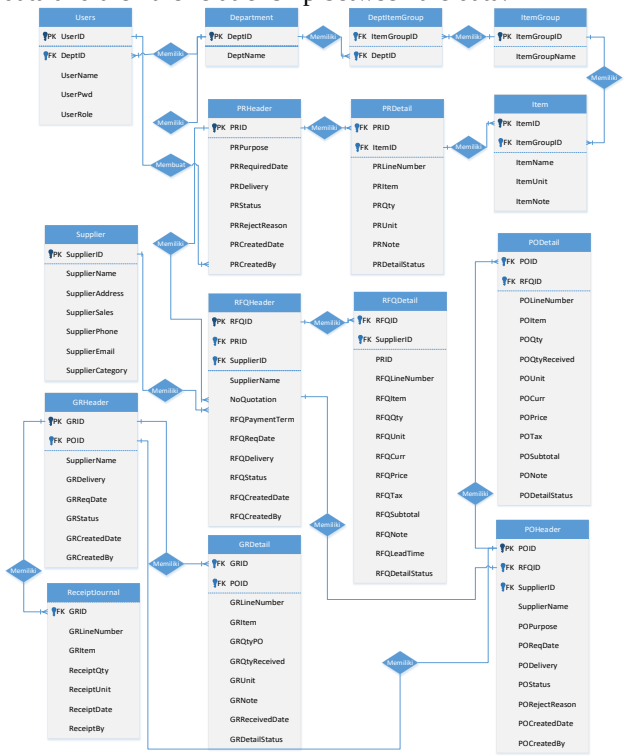

Figure 10 Entity Relationship Diagram

V. RESULT

The evaluation section contains the stages of the test scenario. The stages of the test scenario include some of the main features in the system or application. The test scenario uses the black-box method in its application.

Tabel 1. *Test Scenario of the main features*

Skenario	Hasil yang diharapkan
Open the app	Displays the login form
Input the wrong UserID and Password data	The user cannot login and the system will display an error message
Input the correct UserID and Password data	The user can login and the system will display the main menu according to the user's role.
Click the Create PR menu	Displays the Create PR form
Filling PR data	PR data has been saved successfully and the system displays an information message
Click the Save button	
Click the PR/PO List menu	Display PR/PO List form
Click the Approve button	The selected PR/PO data has the status of Approved and the data that is not selected has the status of Rejected
Click the Reject button	The selected PR/PO data has the status of Rejected and the data that is not selected has the status of Approved
Click the Source button	Displays the Source form and the selected data moves to the Source form
Selecting Supplier data in the Supplier Code column	The Supplier Name and Email fields are automatically filled
Click the Generate RFQ/PO button	New RFQ data has been successfully created according to the number of selected suppliers
Click the Input Quotation button	Displays the Input Quotation form with the RFQ data that has been filled in according to the selected data

Enter all requested Quotation data	The data is successfully saved and the system displays an information message and the RFQ and PR status changes to Supplier Selection
Click the Save Quo button	
Click the Preview RFQ/PO button	Displays the RFQ Preview form with the data report according to the selected data
Click the Edit button	Displays the Edit PR/PO form with the selected data
Change PR/PO qty data	PO data changes are successfully saved and the system displays an information message
Click the Update PR/PO button	
Click the Cancel button	The selected PR/PO data has been successfully cancelled.
Click the Submit Qty button	Displays the Submit Qty form
Enter qty received <= qty remainder	The data has been saved successfully and the system displays an information message and the PO and GR status changes to Outstanding/Closed
Click the Save button	

VI. CONCLUSIONS

Based on the descriptions that have been put forward in previous chapters, the conclusion of this research is the Purchasing Management Information System for PT. NOP Indonesia can help manage company operations in supporting business processes to facilitate the work in the Purchasing Department. Where this system is developed using the SDLC (System Development Life Cycle) method by choosing a Linear Sequential Model or Waterfall Development Model starting from the process of needs analysis, design, implementation, integration, and testing. So that the features in the system are in accordance with the needs of the user. With this system, it can provide benefits for the Company, namely making it easier for the purchasing department to create and process purchase data, making it easier for other departments to submit purchase/PR (Purchase Requisition) documents, making it easier for leaders to review purchase orders and document approval through the system, making it easier for leaders to selecting the appropriate supplier, reducing the error rate caused by human error in creating and processing data, and increasing employee comfort at work.

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