

The Management of Online-Based Supply of Goods at PT Indoberka Investama

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Abstract--PT. Indoberka Investama is a national company that specializes in the construction, fabrication, and distribution of roof truss. Some of the activities in PT Indoberka Investama include sales, sales returns, production receipts, and purchasing of goods to suppliers. There is a problem faced by the company. In the purchasing activity, ordering goods to the supplier is only done based on checking the stock of empty goods in the warehouse. Based on the problems that have been explained, then PT. Indoberka Investama requires integrated applications between sales, purchasing, and warehouse sections. This application is expected to help the employees to perform more effectively and efficiently in serving the customers in sales transactions, and checking the stock of goods that have reached the minimum stock so that the ordering of goods to the supplier to be on time and not to run out.

Keywords: Goods inventory management, Application of Inventory, Inventory Management, PT. Indoberka Investama.

I. INTRODUCTION

PT. Indoberka Investama is a national company engaged in the construction, fabrication, and distribution of roof truss. The current business processes run by the company include sales, sales returns, production receipts, and goods purchasing to suppliers. Based on the description of business processes that run, there is a problem encountered. In the purchasing activity, ordering goods to the supplier is only done based on checking the stock of empty goods in the warehouse. From these problems, it can reduce the level of customer satisfaction due to delays in order fulfillment and even customer failure in ordering goods. In addition to these problems, the use of paper is also high.

The next problem is the company still uses physical documents in the form of paper and can cause high vulnerability damage or loss of physical documents. Based on the problems above, then PT. Indoberka Investama requires

integrated application among sales, purchasing, and warehouse sections. So, this application is expected to help employees to perform more effectively and efficiently in serving customers in sales transactions, and checking the stock of goods that have reached the minimum stock so that the ordering of goods to the supplier to be on time and not to run out

The purpose of this research is to produce an inventory management application that can assist in data management, and simplify the process in making reports of sales, purchasing, receipt of goods from the production. Sales are activities in selling goods or services by the seller to profit from transactions and can be interpreted as the transfer or transfer of ownership of goods or services from the seller to the buyer [1]. Sales returns constitute a return of goods by the customer or the exchange of such goods due to damage to goods occurring during shipping, or defective merchandise upon sale and after production [2].

Purchasing is an activity that is responsible for obtaining quantity and quality of goods used to meet the availability of goods at the warehouse available at the time and price that is applicable [3]. Inventory is an asset that includes goods owned by a company for the purpose of selling to a consumer within a specified period of business [4].

System Development Life Cycle (SDLC)

This study uses waterfall SDLC model that begins with the definition of needs, and then the stages of system and software design, unit testing and implementation, system testing and integration, and operation and maintenance [5].

This inventory management application can facilitate employees in doing business processes and making reports required, and also facilitate customers in conducting goods ordering transactions.

Stock

According to Assauri (2008), inventory is an asset which includes goods of a company intended for sale in a normal business period or raw material inventory awaiting its use in a production process.

Meanwhile [6], inventory is an asset that includes goods owned by the company for the purpose of selling in a certain period of business, or inventory of goods which is still in the process of production or workmanship, or raw material inventory awaiting its use in a production process.

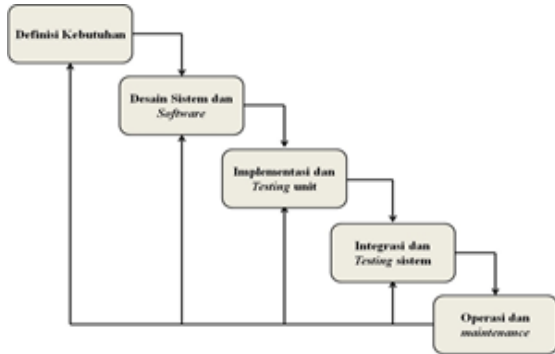


Fig 1 SDLC Waterfall Model

The purpose of inventory that is held from the form of raw materials to finished goods are [3] :

- a. To eliminate the risk of delay in the arrival of goods or materials required by the company.
- b. To eliminate the risk of damaged material or goods ordered so that they must be returned
- c. To accumulate seasonally produced materials or goods so that they can be used when they are not in the market.
- d. To maintain the stability of the company's operations or to ensure the smooth flow of production.
- e. To achieve optimal machine usage.
- f. To provide the best service to customers where the customer's wishes at a time can be met by providing a permanent guarantee of the availability of such finished goods.

Making procurement or production does not need to be in accordance with its use or sale. Related to the supply of goods then there should be a safety stock [3]. Safety stock is the minimum inventory (inventory net) that exists within the company. This net inventory is an inventory that is intended to be in case the company lacks goods or delays in goods ordered.

II. RESEARCH METHODS

Stages in the implementation of systems analysis and design of Web-Based Goods Inventory Management At PT. This Indoberka Investama use Sommerville Waterfall SDLC method in 2011.

Planning stage is the first step in this research to collect all data and information needed from processes of literature study, interview, and observation. Development stage is the stage that aims to develop the system to be built. At this stage there is a user needs analysis and software requirements analysis.

1. User Needs Analysis

TABEL 1. USER NEEDS

User	User needs	
Admin	Processing the data of goods	
	Processing the data of customers	
	Processing the data of employees	
	Processing the data of suppliers	
Customer	Doing registration	
	Doing order of goods	
	Uploading the proof of payment	
	Knowing the status and history of ordering goods	
	Printing the proof of purchase order	
	Doing registration of sales returns submission	
	printing sales return letters	
	knowing the status and history of sales returns	
Sales Section	Monitoring customer registration	
	Activating customers	
	processing customer master data	
	monitor transaction ordering transaction monitoring the transaction of goods ordering	
	confirming customer order	
	printing a sales invoice	
	making a mail based on goods sale transaction	
	monitoring sales return transactions	
	confirming sales returns	
	printing proof of sales returns	
	Purchasing Section	mengelola data master supplier
		monitoring demand transaction needs from the warehouse
processing demand request		

	Confirming the needs for demand goods
	ordering goods to supplier based on demand
	mencetak surat order pembelian
Production section	do the recording of goods that are ready to be sent to the warehouse
	print proof of delivery of production goods
Warehouse	processing master data of goods
	monitoring the stock of goods based on safety stock
	making a request to the purchasing department if the stock of goods on the warehouse under safety stock
	printing demand requirement list
	recording data receipt of goods from production section
	printing receipt of goods
	recording the receipt of goods from suppliers
	printing receipt of goods

Fig 2 System Flowchart of Good Order

When modeling the system through the system flowchart is complete, then the next step is a tiered diagram. Tiered grid modeling explains the main processes and subprocesses that are the decomposition of the main process and will run on the application to be built. The next step is the context diagram. Context diagram modeling is a weekly level of the DFD that describes all the input or output system. Figure 3 shows the context diagram of the inventory management application.

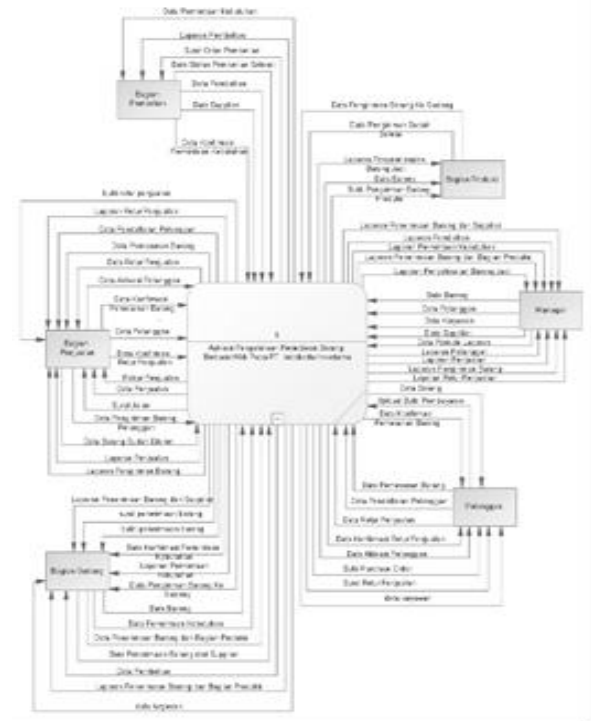
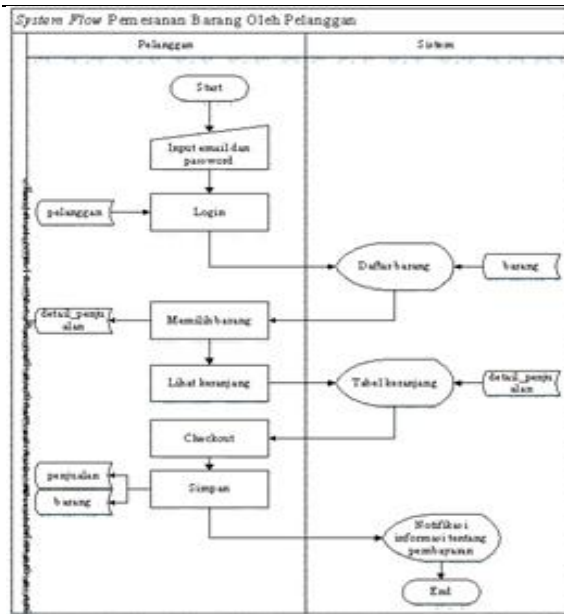


Fig 3. Context Diagram

From the above context diagrams the design is decomposed into DFD level 0 to explain the next process and the existing data store in the inventory. There are five processes in DFD level 0 that include customer registration, sales, sales returns, goods receipts from production, and purchases.

There are also twenty-two data stores that include customers, employees, goods, sales, payment uploads, sales details, accepted sales transactions, travel papers, sales returns, sales returns, sales return details, delivery of goods, production, delivery of finished production goods, recipient of goods of production, demand of demand, detail of demand of demand, demand of processed needs, supplier, purchase, purchase detail, receipt of goods purchased. In DFD level 1 this subscriber registration there are three subprocesses that is registration,



register registration, and customer report. Figure 4 shows the DFD level 1 customer registration.



Fig 4. DFD Level 1 Customer Registration

In DFD level 1 of this sale there are seven subprocesses namely ordering goods, checking stock availability, upload proof of payment, confirmation of goods ordering, delivery of customer goods, sales reports, and delivery reports. Figure 5 shows the level 1 sales DFD.

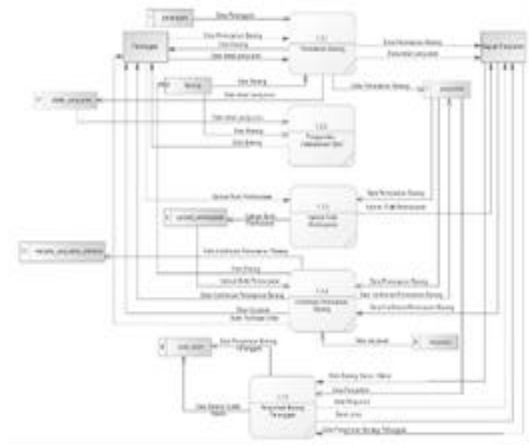


Fig 5. DFD Level 1 Sales

In DFD level 1 sales returns there are three subprocesses namely the return of goods, confirmation of sales returns, and sales returns. Figure 6 shows the DFD level 1 sales return.

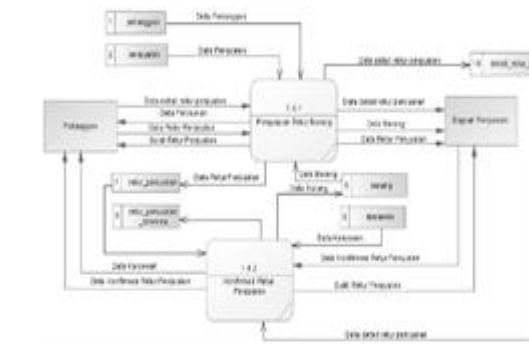


Fig 6. DFD Level 1 Sales Return

After doing the DFD design, the next step is designing Physical Data Model (PDM). The design of PDM is tailored to the existing datastore in DFD. The PDM of the inventory management application is the result of a CDM of nineteen tables. After the CDM degenerate then there are new tables as many as three tables. These three tables include sales details, detail of delivery of production goods, and detail of demand requirement. This physical data model that will be used as a reference in the manufacture of databases for applications built. Figure 7 shows the PDM inventory management application.

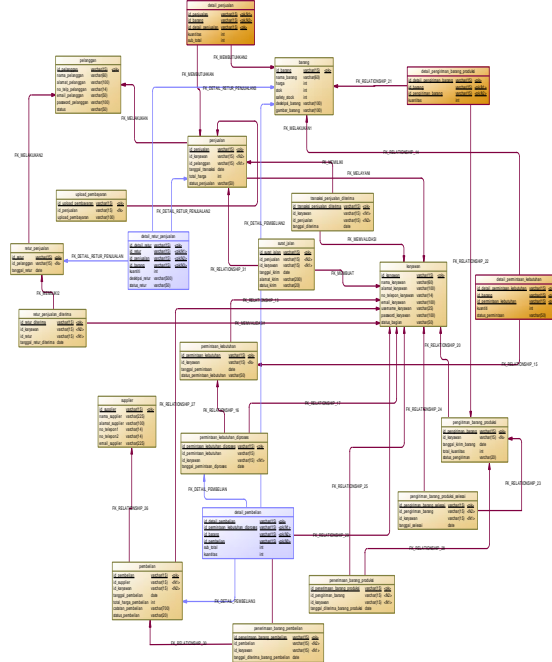


Fig 7. Physical Data Model (PDM)

III. RESULTS AND DISCUSSIONS

In the results and this discussion discusses the applications that have been built based on the design at the interface design stage. Once the application is finished designed and built, the next step is to implement the system. The display described in this section which includes login page, sales page home page, customer master page, payment proof upload page, demand request page, purchase table page, and completion report page.

A. Login Page View

In Figure 8 shows the view of the login page that first appeared when the application was run. For employees and

admins must login by entering a username and password. While customers who do login, must enter the email and password.



Fig 8. Login Page View

B. Pageviews Home Page Section

In Figure 9 shows the page view of the sales homepage is a preliminary view that will be displayed when the system is first executed by the sales department after logging into the inventory management application.

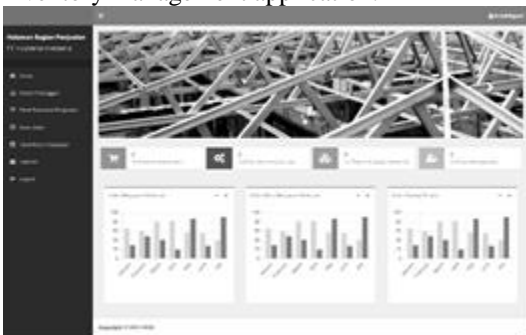


Fig 9. Sales Pages Home Page Views

C. Master Page Pageviews

Figure 10 shows the display of the customer's master page which is a page view that serves to display customer lists based on customer tables in the database and as a page for processing customer data.

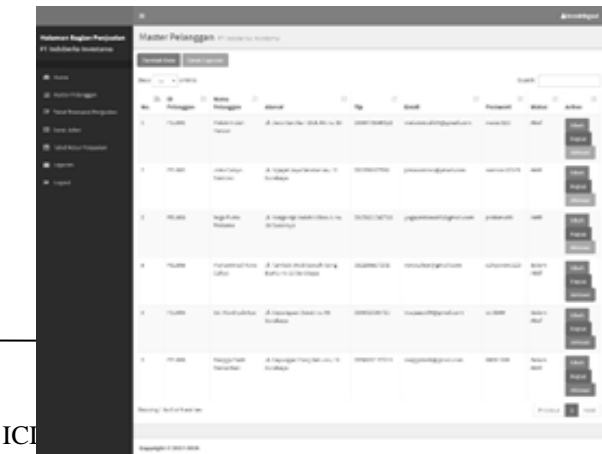


Fig10. Customer Master Page View

D. Payment Proof Pages Upload Page

In Figure 11 shows the page view of upload proof of payment is a page view that serves to upload the payment after ordering goods. In this page, the customer must upload a proof of payment file that corresponds to the sales id and the total price.



Fig11. Payment Proof Pages Upload View

E. Request Requests Page Page

In Figure 12 shows the demand page view needs which is a display that serves to make the demand of goods to the purchasing department in order to meet the needs of stock availability in the warehouse.



Fig 12. Request Requests Page Page

F. Pages Table View

In Figure 13 shows the page view of the purchase table which is a view that serves to view the data purchases already stored in the database, and also serves to confirm that the purchase transaction has been completed and the goods have been received by the warehouse and serves to print a letter of purchase order .



Fig 13. Purchasing Table Pages View

G. Display of Completed Goods Declaration Report

In Figure 14 shows the display of the finished goods reporting page which is a page that serves to display all data delivery of production goods and can be used as a report based on input period.

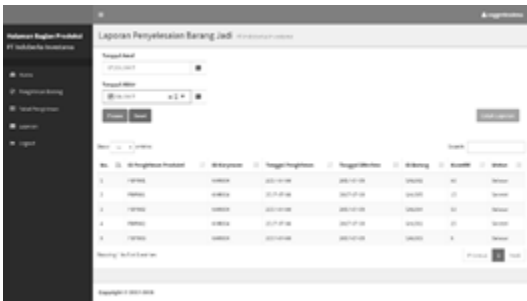


Fig 14. Display of Completed Goods Declaration Report

IV. CONCLUSION

The conclusions can be drawn from the manufacture of Web-Based Goods Inventory Management Applications At PT. Indoberka Investama as follows:

1. From this application, it is expected to be a company solution to manage the inventory of goods whose processes include customer registration, sales, sales returns, production receipts, and purchases. So as to facilitate employees in fulfilling the availability of goods and serving sales transactions, as well as facilitate customers in conducting sales transactions and sales returns.
2. This proposed application, able to minimize the use of paper used, and reduce the occurrence of loss or damage to physical documents.
3. This inventory management application, the sales department, the warehouse, and the purchasing department can know the availability of goods in the warehouse either in safety

stock (Safety Stock) or not to avoid the delay or failure in handling customer ordering.

4. This proposed application can be a system used to facilitate automated reporting based on periods. The report can also be printed as an archive.

SUGGESTION

The following is a suggestion given as a consideration for improving the development of web-based inventory management applications at PT Indoberka Investama:

1. Application of inventory management of these goods can be developed level of security, so it is not easily hacked by the parties who are not responsible.
2. This inventory management application can be developed by adding features to re-order-points in order to determine the point of ordering back to the production and supplier sections.
3. Application of inventory management of these goods can be developed by combining sales application outlets throughout Indonesia into an integrated system.

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