MANAGEMENT SYSTEM INFORMATION OF DISTRIBUTION PRODUCT IN PT. SINAR SOSRO KPW JABAR SELATAN SALES OFFICE OF BANDUNG AREA

Lusi Herawati[1], Tati Harihayati M [2]

[1,2] Teknik Informatika - Universitas Komputer Indonesia
Jl. Dipatiukur 112-114 Bandung
E-mail : herawatilusi82@yahoo.com[1], tati.harihayati@email.unikom.ac.id[2]

ABSTRACT

PT Sinar Sosro KPW South Jabar Sales Office (KP) Bandung Area is the Regional Representative Office that handles the delivery of Sosro (non-alcoholic soft drinks) products, to customers located in Bandung City area. Based on the results of interviews, the problems faced by Head Warehouse is difficulty determining the amount of product stock in forecasting of product procurement for the next period. In addition, Sales Supervisor (SPV) difficulties in scheduling the product delivery process so that the product can be transported during the distribution process and can fulfill customer's order.

Based on the problems that occur, the solution is how to build a product management information system distribution at PT. Sinar Sosro KPW South Java Sales Office Area Bandung. Product procurement forecasting is done using Single Moving Average calculation, and using Distribution Requirement planning (DRP) method to determine product procurement framework and distribution scheduling based on business rules in company.

Based on testing Blackbox, UAT (User Acceptance Test) and Beta obtained the result that the system has been quite helpful in determining the number of procurement of products in the next period.

Keywords: Management Information System Disrtribusi Product, Single Moving Average Forecasting, Distribution Requirement Planning (DRP) Method, User Acceptance Test (UAT).

1. INTRODUCTION

PT Sinar Sosro KPW South Jabar Sales Office (KP) Bandung Area is the Regional Representative Office that handles the delivery of Sosro (non-alcoholic soft drinks) products to its Customers located in Bandung City, consisting of 30 districts. Sales Office (KP) Area Bandung currently has handled selling products with various types, namely Tea, Juice and Mineral Water, with its flagship product that is Tea. Currently PT Sinar Sosro KPW South Jabar Bandung Area Sales Office has a fixed number of 4,762 customers spread across the city of Bandung.

Based on interviews conducted with Mr. Wawan as Head of Sales Office Warehouse (KP) Bandung, he explained that the stock of existing products in the warehouse KP Bandung sometimes can not meet the demand from customers, due to product demand from customers who are not erratic and not in accordance with the stock Products in the warehouse, or the absence of product stocks that match the ordering of the customers, thus requiring the product to other warehouses which of course can not always be fulfilled due to the absence of the required product stock. This of course will affect the process of product delivery, product delivery can be delayed and even cancellation of shipments to customers.

Sales Office (KP) Area Bandung currently has 12 cars with ankle type tub, and only has one reserve with the same type, the capacity of the car can only accommodate about 250 crates of products in one trip, so that transportation is used to distribute products to customers Limited, which can only carry about 250 crates on a single journey with the location of each salesman's destination, whereas a spare car is only used in case of urgent circumstances such as delivery of products to customers that have not been fulfilled in one trip by the previous car. The current product delivery is done by the Salesman one day after the ordering from the customer, the delivery process of the product is done sequentially from one customer to the other, if in one day a salesman must send the product with the amount that exceeds the car transport capacity and Can not be resolved by the backup car because the backup car is in the condition of delivering the product to the customer, then another solution that is required two trips which of course require additional time, if the delivery process is not fulfilled it will happen the elongation time on the next day or even can happen Order cancellation resulting in an impact on sales results.

Based on the above background for the purpose to be achieved in research and development of management information system are:

1. Assisting Head of Sales Office Warehouse (KP) Bandung in determining the procurement of stock products warehouse Sales Office (KP) Bandung.
2. Assist Sales Supervisor (SPV) Sales Office (KP) Bandung in providing recommendations and

schedule product delivery activities so as not to be hampered when there are orders from customers.

2. RESEARCH OF CONTENT

2.1. Management Information System (SIM)

Management Information System abbreviated SIM is an information system that serves to manage information for organizational management. Within the organization, MIS works well for transaction processing, control management or as a decision support support system. The information system in enterprise management is an open system and closed loop system. Information systems get input in the form of data or events within the company, modified with the information processor to obtain information. Processing information can be a computer, person or a combination of both. The managers of the control mechanism are the company's managers. Output information generated used by managers in making decisions to solve problems within the company and to achieve targets and goals company. [1]

2.2. Distribution

Distribution is delivering the product to reach the customer's hands at the right time and place. Delivery of products to customers or end users certainly involves transfortation activities. Companies that provide transportation services, warehousing, and so on are often named with 3PL or thrid party logistic service providers. Scope of distribution activities, companies should be able to design the right distribution network. Decisions on the design of distribution networks should consider tradeoffs between cost aspects, flexibility aspects, and the speed of response aspects to customers. [2]

2.3. Distribution Requirement Planning Method (DRP)

Distribution Requirement Planning is an application of the logic number of Material Requirement Planning (MRP).
This Distribution Requirement Planning (DRP) can have the ability to manage inventory especially in the delivery field. Therefore, in the presence of DRP a company can balance supply supply amount with order requirement. Further according to Gaspersz (2011) the components that exist in the DRP (Distribution Requirement Planning) are as follows:
1. On Hand Balance: is the total supply held at the beginning of a certain period that will be used in the next period.
2. Safety Stock: is a safety stock or the determination of the addition of inventory storage as a benchmark material to overcome the fluctuations in demand (demand).
3. Lead Time: is the grace period required since ordering an item until the item is ready to use.
4. Order (Quantity): Quantity of order stating how many items to order and what lot sizing technique should be used.
5. Forecast: is forecasting total demand or need for inventory at a certain period of time.
6. In Transit: is the number of items that are scheduled to come and will become inventory.
7. Project On Hand: is the total inventory available for use in a given period.

2.3.1 The Basic Logic of DRP is as follows:

1. Gross Requirement / Forecast Demand obtained from forecasting results.
2. From the local distribution forecasting result, calculate Time Phased Net Requirement. The NetRequirement identifies when the inventory level (Scheduled Receipt - Projected On Hand Period earlier) is met by Gross Requirement. For a period: Net Requirement = (Gross Requirement + Safety Stock) - (Schedule Receipt + Projected On Hand Previous Period). The recorded Net Requirement value is a positive value.
3. After that is generated a Planned Order Receipt a number of Net Requirements (certain lot size) in that period.
4. Specified the day where to make the order (PlannedOrder Release) by reducing the scheduled day Planned Order Receiption with Lead Time.
5. Projected On Hand calculated in the period: Projected On Hand = (Projected On Hand Previous Period + Schedule Receipt + Planned Order Receipt) - (Gross Requirement).
6. The amount of Planned Order Release becomes Gross Requirement in the same period for the next level of the distribution network (Richard J. Tersine, 1994) [3]

2.4. Forecasting

Forecasting is an activity that attempts to estimate the sales and use of a product so that the products can be made in exact quantities or quantities (Vincent Gasperz, 2001).Forecasting is an essential tool for performing effective and efficient planning. Forecasting of needs is necessary to:
1. Estimate what needs will be needed in the future.
2. Basic decision-makers to plan.

In industries that adopt the Make to Stock forecasting system is the main input. While the industry that embraces Make to Order forecasting is only a material consideration in determining the needs of the machine. (Spyros Makridakis, Steven C. Wheelwright, 1994) [4]

2.4.1. Single Moving Average Forecasting Method

Single moving average method uses a number of actual data of new requests to generate predictive value for future demand. This method will be effectively applied if we can assume that the market demand for the product will remain stable over time. This method has two special properties that is to make forecasts require data.

Historically over a period of time, the longer the moving averages will result in a smoother moving average, the systematic moving averages can be calculated by equations 2.3.

$$S_{t+1} = \frac{xt + xt-1 + \cdots + xt - n + 1}{n} \quad \text{.....(2.3)}$$

Description :

S_{t+1} = Forecast for periode ke t+1.

X_t = Data in periode t.

N = Moving Averages time periode [4]

2.4.2 Measurement of forecasting errors

Measurement of forecasting errors can use Mean Absolute Error, Mean Square Error, Mean Absolute Precentage Error

1. Mean Squared Error (MSE) yaitu rata-rata dari kesalahan forecasting dikuadratkan dan dapat dilihat pada persamaan 2.3.

$$MSE = \frac{\Sigma(xt - Ft)}{n} \quad \text{..... (2.3)}$$

Description :

X_t= Data actual on t period

F_t= Forecast data of the model used in t period

n= many predicted data [4]

2.5 Safety Stock

Security inventory or Safety stock serves to protect errors in predicting demand during Lead Time. Lead Time is the time it takes between the ordered product to arrive at the company. The amount of Safety stock value depends on supply and demand uncertainty. Here is the formula in determining Safety stock can be seen in the equation 2.4

SS= used average past period × LT.... (2.4)

Description :

SS = *Safety Stock*

LT = Lead Time [4]

2.6 Analysis Distribution Management

Analysis of distribution management is an analysis of how a distribution procedure will be implemented on distribution management information system PT. Sinar Sosro KPW South Jabar Bandung Area Sales Office built. Distribution Management includes the process of procuring Products and shipping Products from company to consumer.

In this analysis will be taken one sample / sample of products that will be used as an object to be analyzed, namely Bottle Sosro Tea. Bottle Tea Sosro is selected because based on demand data, this product is the product most often purchased by consumers. The Company manages Customer product delivery data from July 2016 through June 2017, product shipment data ordered by customers from July 2016 through June 2017 are located in the table 2.1

Tabel 2.1. Number of Sosro Bottle Tea Products Shipment

No	Periode		Jumlah Permintaan Teh Botol Sosro (TBS)
1	Juli	2016	201
2	Agustus	2016	200
3	September	2016	210
4	Oktober	2016	220
5	November	2016	215
6	Desember	2016	232
7	Januari	2017	215
8	Februari	2017	221
9	Maret	2017	210
10	April	2017	220
11	Mei	2017	221
12	Juni	2017	231
Jumlah			2596

Tabel 2.1 Shows the product delivery data to be used as sample for product procurement forecasting for July 2017.

2.6.1 Distribution Requirement Planning (DRP)

DRP method consists of several stages are as follows:

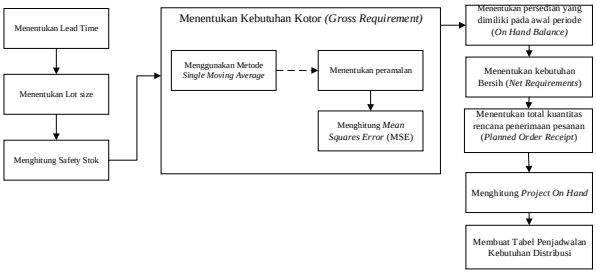


Figure 2.1 Distribution Requirement Planning (DRP) Method

2.6.1.1 Determine *Lead Time*

Lead Time is the time between the time the company makes an order to the Manufacturer until the order arrives at the company. The determination of lead time is based on company policy. PT Sinar

Sosro KPW South Java Area Sales Office Bandung set the lead time for all types of products is 2 days.

2.6.1.2 Determine *Lot Size*

Lot Size is the number of products ordered in a single order. Based on Gross Requirement data of previous period or June, it can be known Lot Size for product of bottle sosro that is as much as 262 crates.

2.6.1.3 Safety Stock Calcullate

Safety stock atau persediaan pengamanan berfungsi untuk melindungi kesalahan dalam memprediksi permintaan selama lead time. Berikut adalah perhitungan safety stock untuk produk teh botol sosro :

Description :

The number of forecasts for July 2017 = 220 crates

The number of working days in a month = 28 days

Lead time procurement of goods to suppliers (*l*) = 7 days

average order in oen month

(d) = 220/28 = 7.85

Standard deviation of July 2017 forecasting (sd) = 7.85/10 = 0.8 krat

Deviasi standar from *lead time (sl)* = 7/10 = 0.7

*Sevice leve*l 95% (Z) = 1.645

Safety Stock = Z x Sdl

$$Sdl = \sqrt{(d^2 x\ Sl^2) + (l\ x\ Sd^2)}$$

$$Sdl = \sqrt{(7.85^2 x\ 0.7^2) + (7\ x\ 0.8^2)}$$

$$Sdl = \sqrt{(61.62 x\ 0.49) + (7\ x\ 0.64)}$$

$$Sdl = \sqrt{(30.19) + (4.48)}$$

$$Sdl = \sqrt{34.67} = 5.88$$

Safety Stock = 1.645 x 5.88= 9.67 => 10 krat (hasil pembulatan)

Based on the calculation of safety stock that has been done then PT Sinar Sosro KPW South Jabar Bandung Area Sales Office must provide safety stock The Bottle Sosro Product is 10 crates

2.6.1.4 Gross Requirement Teh Botol Sosro calculation for pada one period

Gross requirement is done by using forecasting method. Forecasting method that will be used in forecasting product inventory at PT Sinar sosro KPW South Jabar is Single Moving Avarage method.

Based on the results of forecasting that has been done, it can be concluded that the single moving average method with the previous 6 months of data produced the smallest error. From the table the MSE value of the 6 month moving average is 41, the smallest error indicates that the accuracy of forecasting results is high.

Result of forecasting of sosro bottle tea product for next period with moving 6 months, hence PT. Sinar Sosro KPW South Jabar Bandung Area Sales Office is recommended to make procurement for sosro bottle tea products in the next period is July 2017 with a total of 220 crates. Obtained from the calculation using equation (2.3) to determine the forecasting in July 2017

.

$$St_{Juli} = \frac{Xt_{Januari} + Xt_{Februari} + Xt_{Maret} + Xt_{April} + Xt_{Mei} + Xt_{Juni}}{n}$$

$$= \frac{215+221+210+220+221+231}{6}$$

$$= \frac{1318}{6}$$

$$= 220 \text{ krat}$$

So, the result of Gross Requirement by forecasting with Single Moving Average method on the bottle sosro product is as much as 220 crates.

2.6.1.5 Establish the inventory held at the beginning of the period (On Hand Balance)

On Hand Balance is the total supply held at the beginning of a certain period that will be used in the next period, in this case example, which will be calculated procurement process is July, then On Hand Balance used in the previous period or June.

Tabel 2. 1 On Hand Balance

No	Periode		On Hand Balanced (Sisa Persediaan) Teh Botol Sosro (TBS)
1	Juli	2016	19
2	Agustus	2016	15
3	September	2016	20
4	Oktober	2016	4
5	November	2016	10
6	Desember	2016	18
7	Januari	2017	5
8	Februari	2017	11
9	Maret	2017	9
10	April	2017	14
11	Mei	2017	14
12	Juni	2017	**31**

In the sample data, June has 31 crates of Sosro Bottle Tea. Then these results will be used for the next stage, ie to calculate the Net Requirement or net requirement.

2.1.6.6 Determnining Net Requirements

Net Requirements indicate the amount of Sosro Bottle Tea (TBS) product that the company needs to order to the Supllier in order to be able to meet the demand in that period. The data needed to calculate the net requirement (Net Requirements) is Gross Requirements data and Project on Hand data

for period 6 from the previous stage. How to cultivate it by equation (2.1)

Net Requirement = (220 + 10) – (0 + 31) = **199 krat**

In the calculation of net requirements (Net Requirements) for the example of the case Bottle Sosro Tea (TBS) obtained for 199 crates

2.1.6.7 Planned Order Receipt

Planned Order Receipts are the number of refill orders (purchase orders) that have been planned to be received for a certain period to meet net requirements.

Planned Order Receipts = Gross Requirement + Project On Hand (before)

= 220 + 31

= 251 krat

In the calculation Determining the total quantity of order receipt plan (Planned Order Receipt) for the sample case of Bottle Sosro Tea (TBS) was obtained for 251 crates

2.6.1.8 Calculating Project On Hand

Project On-Hand is the quantity that is expected to be in the procurement at the end of the period and is available for demand in the next period. In this phase, the project on hand will be calculated for July 2017, with the equation (2.2)

Projected On Hand = (*On Hand Periode* sebelumnya + *Schedule Receipt* + *Planned Order Receipt*) - (*Gross Requirement*)

Projected On Hand = (31+ *0* + 251) - (220)

= (282) - (220)

= 62 Krat

2.6.1.9 Create table scheduling distribution needs

The final step is to create a schedule of distribution needs based on the steps that have been done. The schedule of distribution needs for sosro bottle tea products are as follows:Tabel 2. 3 On Hand Balance

Juni 2017 - Juli 2017	Pas Due	Juli
Gross Requirement		220
Safety Stock		10
Project On Hand	31	62
Net Requirement		199
Planned Order Receipt		251

So, it can be seen that the amount of Teh Botol Sosro (TBS) products needed in July based on calculations that have been done using DRP method that is as much as 251 crates.

2.6.1.10 Delivery of product to customer

Delivery is a process after the Customer's ordering of product ordering through Salesman. Then the Salesman will make preparations for delivery of products to customers who have made reservations on 1 day before.

Delivery is done by a Salesman and an Assistant who helps during the shipment process, the type that Salesman uses in the delivery of the type of ankle tub which has a capacity of 250 crates of one-way greeting products (once transport). Transportation with the same type amounted to 12 with 1 piece as reserve so that the total transportation available in KP Bandung amounted to 13 units. Here Product shipping details On June 01, 2017

Tabel 2.4 Delivery Products pada tanggal 1 Juni 2017

Tanggal	Salesman	Jenis Kendaraan	Plat Kendaraan	Total Pengiriman	Kapasitas Muatan	Status
01/Juni/2017	Undang	Mobil Engkle Bak	B 9241 GXR	90	250	aman
	Tasori	Mobil Engkle Bak	B 9219 UT	88	250	aman
	Maman	Mobil Engkle Bak	B 9521 KCD	87	250	aman
	Yunus	Mobil Engkle Bak	B 9668 UT	267	250	tidak aman
	Ardiansyah	Mobil Engkle Bak	B 9522 JT	111	250	aman
	Mustami	Mobil Engkle Bak	T 9473 DA	134	250	aman
	Apip	Mobil Engkle Bak	B 9251 FXR	161	250	aman
	Muhammad Emi	Mobil Engkle Bak	B 9495 PXR	295	250	tidak aman
	Yudi Kurniawan	Mobil Engkle Bak	B 9128 OB	190	250	aman
	Sugeng Harmadzi	Mobil Engkle Bak	B 9479 TXS	82	250	aman
	Nadi	Mobil Engkle Bak	B 9934 TCG	83	250	aman
	Ade Rianto	Mobil Engkle Bak	D 8971 CU	51	250	aman

The following is the total data of non-conveyed product deliveries, can be seen in Table 2.4

Tabel 2. 5 Product Data Not Transported

Tanggal	Salesman	Jenis Kendaraan	Plat Kendaraan	Total Pengiriman	Kapasitas Muatan	Tidak Terangkut
01/Juni/2017	Yunus	Mobil Engkle Bak	B 9668 UT	267	250	17
	Muhammad Emi	Mobil Engkle Bak	B 9495 PXR	295	250	45
Jumlah Tidak Terangkut						62

The company will use the same type of car to be used for the unlinked product. Here is a 2.5 backup vehicle table.

Tabel 2. 6 Vehicle Backup

Tanggal	Salesman	Jenis Kendaraan	Plat Kendaraan	Total Pengiriman	Kapasitas Muatan	Status
01/Juni/2017	Tri Susanto	Mobil Engke Bak	B 9254 KCA	62	250	Aman

Products that will be delivered to customers with their respective status can safely transport the product. Following table 2.6 status of the vehicle at the time will make delivery to the customer.

Tabel 2. 7 Delivery Products

Tanggal	Salesman	Jenis Kendaraan	Plat Kendaraan	Total Pengiriman	Kapasitas Muatan	Status
01/Juni/2017	Undang	Mobil Engkle Bak	B 9241 GXR	90	250	aman
	Tasori	Mobil Engkle Bak	B 9219 UT	88	250	aman
	Maman	Mobil Engkle Bak	B 9521 KCD	87	250	aman
	Yunus	Mobil Engkle Bak	B 9668 UT	250	250	aman
	Ardiansyah	Mobil Engkle Bak	B 9522 JT	111	250	aman
	Mustami	Mobil Engkle Bak	T 9473 DA	134	250	aman
	Apip	Mobil Engkle Bak	B 9251 FXR	161	250	aman
	Muhammad Emi	Mobil Engkle Bak	B 9495 PXR	250	250	aman
	Yudi Kurniawan	Mobil Engkle Bak	B 9128 OB	190	250	aman
	Sugeng Harmadzi	Mobil Engkle Bak	B 9479 TXS	82	250	aman
	Nadi	Mobil Engkle Bak	B 9934 TCG	83	250	aman
	Ade Rianto	Mobil Engkle Bak	D 8971 CU	51	250	aman
	Tri Susanto	Mobil Engkle Bak	B 9254 KCA	62	250	aman

Products that will be delivered to customers with their respective status can safely transport the product. Following table 2.6 status of the vehicle at the time will make delivery to the customer.

2.7 Analysis Database

Database analysis on product distribution management information system at PT. Sinar Sosro KPW South Java Sales Office Area Bandung which will be built using Entity Relationship Diagram (ERD). ERD is a data model that uses several notations to describe data in the entity context and the relationships described by the data.
The diagram is illustrated in Figure 2.3

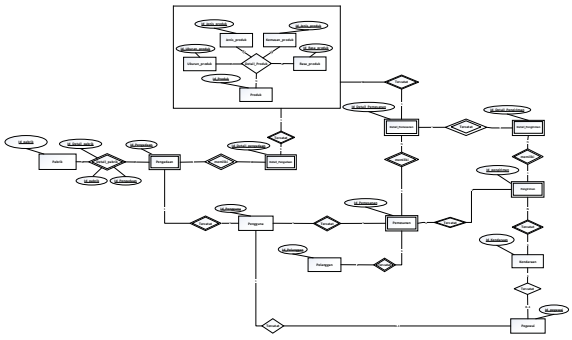


Figure 2.3 ERD Product Distribution Management information system

2.8 Functional Analysis

Functional Needs Analysis is an analysis that describes the flow of data or information that includes the drawing, planning, and sketching or arrangement of several separate elements into a unified whole and functioning in the process of making software to be built.

2.8.1 Context Diagram

Context diagram is a model to explain globally how data is used and transformed to process or describe the flow of data into and out of the system. Context diagram on the system can be seen in Figure 2.4

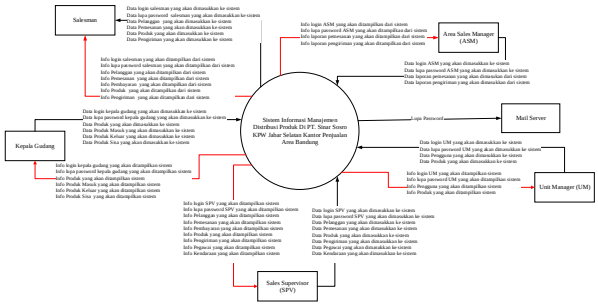


Figure 2.4 context Diagram

2.8.2 Data Flow Diagram (DFD)

Data flow diagram shows how the data flow describes the processes that occur in the system until the process more detail.

1) Data Flow Diagram Level 1

DFD Level 1 Product Distribution Management Information System at PT. Sinar Sosro KPW South Java Sales Office Area Bandung in Figure 3.8 Explain in general what processes can Done on the system.

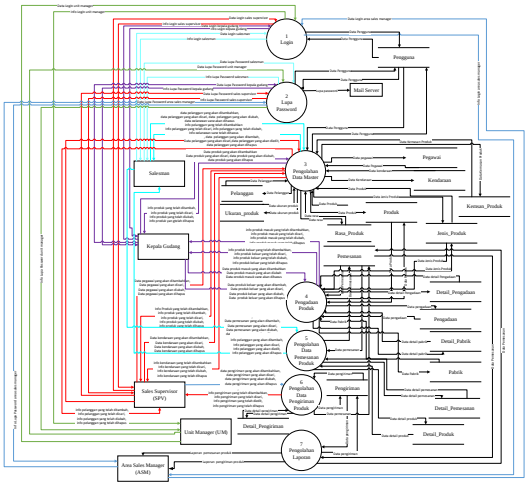


Figure 3.6 DFD Level 1

2.9 Design System

Design is part of a software development methodology that must be done after going through the stages of analysis. Design is identified as the system application process to be implemented..

2.9.1 Relation Program

Table Relationships describes the relationship between data, the meaning of data and limitations. The process of relation between attributes is a combination of attributes that have the same primary key, so that these attributes into a unity that is connected by the key field. Table Relations at PT. Sinar Sosro KPW South Java Sales Office Area Bandung can be seen in Figure 2.5

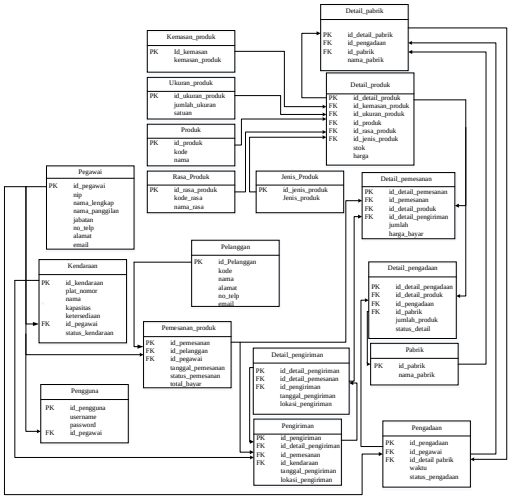


Figure 2.5 Tabel Relasi

Interface design is made to describe the rogram display that will be used by the user to interact with the system to be built. The design is made based on the interface of both input and output that will be generated when the application is implemented.

Perancangan antarmuka halaman login pada SIM Distribusi Produk di PT Sinar sosro KPW Jabar Selatan Kantor Penjualan Area Bandung terdapat pada Figure 2.6

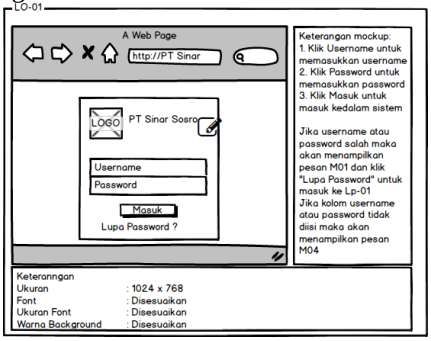


Figure 2.6 login interface

2.9.2 Implementation and testing system

2.9.3.1 Blackbox Testing

Black box testing is focused on the functional requirements of the built system. Black box testing scenario for distribution management information system at PT. Sinar Sosro KPW South Java Sales Office Area Bandung can be seen in table 2.8

Tabel 2.8 Blackbox Testing

Kelas Uji	Butir Uji	Jenis Pengujian
Login	Login pengguna	Black Box
Lupa Kata Sandi	Lupa kata sandi pengguna	Black Box
Pengolahan data pengguna	Menambah data pengguna	Black Box
	Mengedit data pengguna	
	Menghapus data pengguna	
	Mencari data pengguna	
Pengolahan data pelanggan	Menambah data pelanggan	Black Box
	Mengedit data pelanggan	
	Menghapus data pelanggan	
	Mencari data pelanggan	
Pengolahan data produk	Menambah data produk	Black Box
	Mengedit data produk	
	Menghapus data produk	
	Mencari data produk	
Pengolahan data pegawai	Menambah data pegawai	Black Box
	Mengedit data pegawai	
	Menghapus data pegawai	
	Mencari data pegawai	
Pengolahan data kendaraan	Menambah data kendaraan	Black Box
	Mengedit data kendaraan	
	Menghapus data kendaraan	
	Mencari data kendaraan	
Pengolahan gudang	Menambah data produk masuk	Black Box
	Mencari data produk masuk	
Pengolahan pemesanan	Menambah data pemesanan	Black Box
	Menghapus data pemesanan	
	Mencari data pemesanan	
Pengolahan pengiriman	Menambah data pengiriman	Black Box
	Mencari data pengiriman	

2.9.3.2 UAT Testing (User Acceptance Test)

Based on the tests that have been made on the user acceptance test testing scenario, the new application testing process involves potential users / users.

UAT Testing (User Acceptance Test) is done as a condition that the built application has been accepted by the user. The new app testing process involves potential users / users

2.9.3.3 Beta Testing

Beta testing is a direct test of the real environment. Users make an assessment of the software using interview methods. From the results of these interviews it can be concluded whether the software built in accordance with the purpose or not. Based on the above Beta test it can be concluded that:

1) The system is quite easy to use
2) Companies feel helped by the system
3) The system has a view that is quite interesting and easy to understand
4) The system is good enough in managing product procurement process.
5) The system is quite helpful in the delivery

3 Closing

3.1 Conclution

After doing the analysis, design, and testing. Then it can be concluded as follows:

1. Distribution Management Information System This product can assist the Warehouse Chief in estimating the stock of procurement of existing products in the warehouse for the next period, so as to minimize the risk of stock deficiency that can occur and affect the process of distributing products to customers.

2. In addition Distribution Management Information System This product can also assist Sales

Supervisor (SPV) in analyzing the vehicle used as a means of transportation in the distribution of products to customers, how the capacity of the car in transporting products to be distributed to customers.

3.2 Suggestion

Based on the conclusions outlined above, what is expected or suggestions for the future is that the system built to work better, should be added to the analysis of scheduling distribution of products to customers on Distribution Management Information System Products In PT. Sinar Sosro KPW South Java Sales Office Area Bandung

BIBLIOGRAPHY

[1] Davis, Gordon B, *Kerangka Dasar Sistem Informasi Manajemen* ,PT.Gramedia.

[2] I Nyoman Pujawan, *Supply Chain Management Edisi Kedua*. Surabaya, Indonesia: Guna Widya, 2010.

[3] Agustina, Merry Fina Oktasari,'Penerapan metode DRP(Distributin Requirement Planning) pada sistem informasi distribusi LPG (Studi Kasus PT. Bumi Sriwijaya Palembang), Seminar Nasional Informatika 2012 (semnasIF2012),ISSN : 197-2328, 2012)

[4] Spyros Makridakis, Steven C. Wheelwright, *Metode-Metode Peramalan Untuk Manajemen*, Jakarta: Bina Rupa Aksara, 1994.