INFORMATION SYSTEM DEVELOPMENT PRODUCT IV POLE IN CV JAYAGIRI USING APPROACH SUPPLY CHAIN MANAGEMENT

Teguh Selamet[1], Riani Lubis[2]
[1,2] Teknik Informatika - Universitas Komputer Indonesia
Jl. Dipatiukur 112-114 Bandung
E-mail : teguhselamet14@gmail.com, riani.lubis@emai.unikom.ac.id[2]

ABSTRACT

CV JAYAGIRY is a manufacturing company that produces a wide range of hospital equipment, such as infusion stand, korentang, instrument trolley etc. Viewed from data sales, type IV pole has an average of large sales. Therefore, the company only makes supplies product for IV pole, the rest of the company only produces in case of booking. Uncertainty reservations made buyers, making the CV JAYAGIRY have difficulty in determining the supply of products IV pole and raw materials must be prepared for the production process. While the process of product inventory IV pole, influenced by the purchase request IV pole. For example, if there is order equipment with different product types, product inventory process will be hampered IV pole. While the process of procurement of raw materials by the company based on the nominal currency is not based on an estimated pemasanan raw materials and raw material purchases made once a month or when shipments reached 500 units.

Based on the problems that exist at this time we need an information system development, product IV pole in CV JAYAGIRY using Supply Chain Management approach. The aim is to facilitate the company in determining the estimated raw materials must be prepared to meet production needs, as well as help determine the amount of production that should be stored in warehouse. So the production and distribution process runs smoothly. Forecasting methods used are single moving average period of 9 months. The calculations in determining the number of products using safety stock inventory.

Based on the test results it can be concluded that the information system is built makes it easier head of production in determining the IV pole product inventory stored in warehouse and simplify planning part in determining the estimated ordering raw materials to meet their production process.

keyword : Supply Chain Management, Single Moving Average, Safety Stock.

1. INTRODUCTION

CV JAYAGIRY is a manufacturing company that produces a wide range of hospital equipment, including IV pole, korentang, instrument trolley, and others. Judging from the sales data types infusion pole has an average sales at most. Kaerena by the company only makes product for IV pole rest of the company only produces the event booking. Production is carried out to make the CV JAYAGIRY IV pole considerable inventory in anticipation of a purchase order by the buyer IV pole products. This production process is a strategy make-to-stock namely the production process before their booking.

Based on an interview with Mr. Giry as the owner of CV JAYAGIRY company stated that the purchase of raw material is done once a month or when shipments reached 500 units then going back ordering raw materials. And the purchase of raw materials made by the company based on the nominal currency is not based on the estimates. K ekurangan raw materials can lead to the production process does not go smoothly. If the production process is not running smoothly, then the product distribution buyer ordered IV pole can be inhibited. Shortages of raw materials is dikarena stocks of raw materials are ordered to the supplier is not always available, so ordering raw materials can be delayed. When demand is high, while the number of product inventories IV pole a little, can cause delays in delivery, because the stocks of raw materials in the warehouse must be able to meet the needs of the production process. While the purchase of raw materials made once a month or when shipments reached 500 units. This causes part of planning is difficult in determining the estimated ordering raw materials.

Based on an interview with Mr. Henry As the head of the production stated that the process of inventory of products affected by the IV pole IV pole pembelin their request. For example, if there is order product IV pole 100 units then head of production will create 100 units come back to serve as a case of re-ordering supplies. Besides influenced by the purchase request IV pole IV pole inventory process is also affected by the demand for the purchase of other products. As if there were ordered equipment with different product types IV pole

product inventory process will be hampered for example in case of bookings of 4 different types of products, namely pole Inus, korentang, double bowl and verlos bed. Because judging from the number of products offered by the company only made provision for this kind of drip stand alone. By because it was the head of production has not been able to determine the amount of inventory that must be stored IV pole.

Based on the problems - problems that exist at this time in CV JAYAGIRY, hence the need for a development of information systems that can regulate the supply of raw materials and products IV pole method approach, Supply Chain Management
Based on the description of the problems noted earlier, a system is needed product information in CV JAYAGIRY IV pole using Supply Chain Management approach with the following objectives:

1. Help the planning department in determining the estimated ordering raw materials and to avoid any lack of raw material inventory.
2. Assisting the Head of Production in determining the amount of product inventory IV pole which must be stored in warehouse.

1. Research Contents

2.1. Information Systems

The information system can be defined as a set of components that are interconnected and work together to collect, process, store and distribute relevant information to support decision-making, coordination and control that is therein. The purpose of the system is to provide information and mensistemastikkan information of all events or activities that are necessary to control the operation of an organization. The activities referred to in this information system including taking, processing, storing, and conveying the necessary information within the operate all the activities of the organization concerned [1].

2.2. Systems Supply Chain

Supply Chain adalah jaringan perusahaan-Supply Chain is a network of companies that jointly work to create and deliver a product into the hands of end users [2].

Supply chain system is a system in the supply chain that has the objective of creating mutually beneficial cooperation in controlling, regulating and improving the flow of material and information of a product from the supplier to the end user.

2.3. Supply Chain Management

Supply Chain Management is a method or an integrative approach to managing the flow of products, information, and money in an integrated manner involving parties from upstream to downstream. An important principle in SCM is transparency of information and collaboration between the company's internal functions as well as with the parties in the company along the supply chain. Supply Chain is a physical network, the companies involved in supplying raw materials, produce goods, and deliver it to end users. Such companies typically include suppliers, manufacturers, distributors, agents and companies supporting such a logistics service company [2].

The term Supply Chain Management first proposed by Oliver & Web er in 1982. Not only oriented to the internal affairs of a company, but also for external affairs concerning the relationship with the partner companies. Because the companies that are in a supply chain at its core consumers want to satisfy the same end, they must work together to make a cheap product, deliver it on time, and with good quality. Ideally, the relationship between the parties to an ongoing long-term supply chain. Long-term relationship allows all parties to create a better trust and create efficiencies. Efficiency can be created for long-term relationship means reducing costs to get a new partner company.

2.3.1 Component Supply Chain Management

Supply Chain Management has three main components that support the passage of a business process as follows:

1. **Upstream Supply Chain**
   Overall activity manufacturing company with distribution or distributor relationship may be extended to the several levels. The main activity in the Upstream Supply Chain is procurement.

2. **Internal Supply Chain**
   Internal Supply Chain is the delivery of goods to the warehouse. The main activity in the Internal Supply Chain is a production management, manufacturing, and inventory control.

3. **Down Stream Supply Chain**
   Down stream activities within the Supply Chain process involves the delivery to the end consumer. The main activity in the Downstream Supply Chain is the distribution of goods, warehousing, transportation.

2.3.2. Push and Pull Supply Chain

The process is based on the pull customer orders, while the push process initiated and conducted in a way to anticipate the customer's order. Pull supply chain strategy is the production of "make-to-order" the main benefit is to avoid waste inventory or a company's strategy is mainly a manufacturing company where the new production is done always after the market demand and actually performed at the request of customers [3].

Push Supply Chain is a production strategy Make-to-Stock. This strategy is the opposite of Pull strategy where compared pull, push strategy is more popular due to its production system based forecasting and produce output in large numbers will

be entered into the inventory before it is piped to customers. This strategy has a focus on efficiency and standardization activities. Push strategy can be connoted with lean supply. Increasingly, companies have little variation, the product is the right strategy. However, for products with market conditions change, the use of the push system will bring some disadvantages, such as [3]:

1. Inability to meet market demand changes.
2. Inventory buildup that will bring a lot of waste and need a lot of storage space.
3. Large production batches.
4. risk obsolete Great product

2.3.3. Coverage Supply Chain Management

The main activities included in the classification of Supply Chain Management, is as follows [2].

1. The activities of designing new products (product development)
2. Activity obtain raw materials (procurement, purchasing or control)
3. Production planning and inventory activity (planning & control)
4. Perform activities of production (production)
5. Activities do delivery / distribution (distribution)
6. Product returns management activities / goods (return)

The sixth classification is usually reflected in the form of the division of departments or divisions in manufacturing companies can be seen in Table 1

Table 1. Top Five Part In A Manufacturing Company Related to Main functions Supply Chain

Part	Event Coverage
Product development	Conducting market research, designing new products, involving suppliers in new product percancangan.
Procurement	Select suppliers, evaluating supplier performance, make purchases supplyrisk, develop and maintain relationships with suppliers.
Planning and Contro	Demand planning, peramalan permintaan, perencanaan kapasitas, perencanaan produksi dan persediaan.
Production operation	Execution of production, quality control.
Shipping / Distribution	Distribution network planning, delivery scheduling, finding and maintaining relationships with the company shipping services, monitor service level at each distribution center.

2.3.4. Procurement

Procurement of goods is an important activity in maintaining the viability of the company, especially in the manufacturing industry.

Procurement Management is one of the main components of supply chain management. The task of the management of procurement is to provide input, either goods or services required in production activities and other activities in the production [2]

The efficiency can provide significant contribution to the increase in profits (profit) of a company. Parts procurement would not only be able to engage in creating a strategic advantage in terms of costs. Dihasilakan product quality by a manufacturing company would be largely determined by the ability of procurement being brought to obtain sources of raw materials and component quality

2.4. Inventori

Inventory along the supply chain have major implications for the financial performance of a company.

The term is used to indicate the inventory of goods held for resale or used to produce goods to be sold [2].

2.4.1 Test Equipment Inventory

Companies need to use metrics to see the performance of the company. In principle, the performance of the inventory should be oriented on operating efficiencies on the one hand and customer service (Service level) on the other. There are several sizes that can be used to monitor the performance of supply is [2]:

1. Inventory turnover (inventory turnoverrate). It saw how quickly the products or goods to flow relative to the average amount stored as inventory.
2. Inventorydays of supply. Defined as the average number of days a company can operate with the amount of inventory on hand. This size can actually be said to be in tune with the inventory turnover rate. if inventory Long days of supply, the low turnover rate.

Fillrate is the percentage of items that are available when requested by the customer. Film rate can be measured for each product individually or in the aggregate for the overall product.

2.5. Classification Inventory

Inventories are classified into three classifications, among others [2]:

1. Based on the shape, the inventory can be classified into raw materials (rawmaterials), intermediate goods (WIP), and finished products (finished product). This classification applies only in the context of the manufacturing company. Finished products produced by the supplier will be the raw material for an assembly

plant. Thus, in the context of supply Chain duly finished product is a product that is not going to undergo processing again and ready for use by the end user.

2. Based on the functions, inventory can be divided into several

a. Pipeline / transit inventor
This inventory appears as the sender's lead time from one place to another. Goods are stored in the truck during the delivery process is one such example. This inventory will be a lot if the distance (dam of time) long delivery

b. Cycle Stock
Cycle stock is due to inventory motive meet economies of scale as discussed above. This inventory has given cycle. At the time of delivery of a polynomial, then gradually reduced due to worn or sold until exhausted or nearly exhausted, then start with a new cycle again.

c. Safety Stock
Its function is as a protection against the uncertainty of demand. Companies typically save more than expected needed during a given period so that more needs can be met without having to wait. Determine how much inventory delivery is a tough job. The size of the safety stock related to the cost of inventory and service levels

d. Anticipation Stock
Anticipation stock is a stock that needed to anticipate an increase in demand due to the Muslim nature of demand for a product. Although the stock is also substantially anticipation anticipation of demand is uncertain, but the company can predict an increase in significant numbers (not just a random pattern).

3. Supplies can also be classified according to the nature of dependence between the needs of one item to another. Items that need depends on the needs of other items called dependent demamditem. On the contrary, the need for Independent demamd item does not depend on the needs of other items..

2.6. Safety Stock Technique

Based on the classification of inventory described earlier authors use the technique Safety stock to accommodate the demand uncertainty affecting supplies.

Safety stock inventory or security function to protect the error in predicting demand during Lead Time. Lead time is the time it takes between the raw material booked up until the company. The amount of safety stock depends on the uncertainty of supply and demand. Here is the formula in determining Safety stock can be seen in equation 2.1.

SS = average usage – average previous period x LT (2.1)

Where:

SS = Safety Stock

LT = Lead Time

Reorder point or reorder point is when the supplies reached the point that needs to be done reordering. Here is the formula in determining reoder point can be seen in equation 2.2.

$$Reorder\ Point = (LD \times AU) + SS \quad (2.2)$$

Dimana:

LD = Lead Time

AU = Average Usage

SS = Safety Stock

2.7. Forecasting Theory

The theory is used to forecast demand forecasting which will be used as a benchmark in the planning of production activities. Demand forecasting is an activity to estimate the demand for certain goods or services in a particular period and marketing area.

1.7.1. Forecasting Objectives

When viewed in terms of time, the purpose of forecasting can be seen as follows:

1. Short Term
Determining the quantity and timing of the items made production. Usually daily or weekly and determined by Low Management.

2. Small Term
Determining the quantity and timing of the production capacity. Usually monthly or quarterly and is determined by the Middle Management

3. Jangka Panjang (Long Term)
Plotting quantity and timing of the production facilities. Annual usually 5 years, 10 years, or 20 years and are determined by the Top Management

1.7.2. Kind of Forecasting

There are several types of forecasting used. Forecasting the type used are as follows [4]:

1. Times Series Model
Method of time series forecasting methods quantitatively using the time as the basis for forecasting

2. Casual Model
Forecasting method using a causal connection as an assumption, namely that what happened in the past will be repeated at this time.

3. Judgemental Model
When the time series and causal models rely on quantitative, on a judgmental covers to incorporate quantitative factors / subjective into forecasting methods. In particular useful when subjective factors are expected to be very important when accurate quantitative data already acquired.

1.7.3. Factors Affecting Forecasting

Forecasting is actually an attempt to minimize the risk that timbulakibat decision-making in the planning of production. Semakinbesar issued efforts certainly a risk that can be avoided getting besarpula. But efforts to minimize these risks are limited by cost yangdikeluarkan due to seek it

Factors that should be considered

1. **Horizon Forecasting**

There are two aspects of the time horizon associated with each method of forecasting, namely:

a. Coverage of time in the future
   To which the difference of the forecasting methods used should be adjusted..
b. The number of periods for which forecasts the desired
   Some of the techniques and methods can only be disuaikan for forecasting one or two periods in advance, while engineering and other methods can be used for forecasting future periods..

2. **level Accuracy**

The level of accuracy required is very closely related to the level of detail required in a forecast. For some decisions expected variations or irregularities on forecasts conducted between 10% to 15%, while for things or kasuslain may assume that the variation or deviation above the forecast of 5% is quite dangerous.

3. **Availability of Data**

The method used is very beneficial, if it is linked to the circumstances or the information or data held. Apabiladari data is then known of the seasonal pattern, then to peramalansatu years ahead should be used when the method of variation of the data musim.Sedangkan ago known pattern of relations between variables - variables that influence each other, then sebaiknyadipergunakan method of Cause and Effect (causal) or correlation (correlation).

4. **Forms Data Patterns**

The main basis of the forecasting method is the assumption that the kinds of patterns that are found in the data that is forecast to be sustainable. Data can be divided into four types of cycles and trends, namely [4]:

2.8. Forecasting Method Single Moving Average

Method of moving average single-use amount of actual data to generate new demand forecast for demand dimasayang value will come. This method will be effective diterapkanapabila we can assume that the market demand for the product will remain stable over time. This method has two sifatkhusus namely to create a forecast requires data.

Historically within a certain period, the longer the moving averages will produce a moving average that is more subtle, systematically moving average can be calculated using equation 2.3.

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

Keterangan:

S_{t+1} = Forecastuntuk periode ke t+1.
Xt = Data from period t.
n = Timed Moving Averages

2.9. Measurement Errors Forecasting

Measurements can use Mean Absolute Error, Mean Square Error, Mean Absolute Precentage Error

1. Mean Absolute Error (MAE)

Mean Absolute Error (MAE) is the average absolute error of error foresee (positive and negative values not seen) can be seen in equation 2.4.
(2.4)

$$MAE = \frac{\sum |x_t - F_t|}{n} \quad (2.4)$$

2. Mean Absolute Deviation (MAD)

Mean Absolute Deviation (MAD) to measure forecast accuracy by averaging the alleged error (absolute value of each error). MAD useful when measuring forecast error in the same units as the original series. MAD value can be seen in equation 2.5.

$$MAD = \frac{\sum (Absolut\ dari\ Forecast\ Error)}{n} \quad (2.5)$$

3. Mean Squares Error (MSE)

Mean Squared Error (MSE) is the average of the error forecastingdikuadratkan and can be seen in equation 2.6.

$$MSE = \frac{\sum (x_t - F_t)}{n} \quad (2.6)$$

Keterangan:

X_t = The actual data in period t
F_t = Data predictions of the model used in period t
n = a lot of the data forecast results

4. Mean Absolute Precentage Error (MAPE)

MAPE is a measure of the relative error. MAPE usually more means than MAD because MAPE stated percentage forecasting errors in the results of the actual demand during certain periods that will provide information on the percentage of error is too high or too low. mathematically, MAPE can be seen at 2:7 the equation..

$$MAPE = \frac{100}{n}\sum\left|A_t\frac{F_t}{A}\right|$$
(2.7)

5. Tracking Signal

Tracking Signal is a measure of how well a forecast estimate the actual values. Mathematically Tracking Signal values can be seen in equation 2.8

$$Traking\ Signal = \frac{RSFE}{MAD}$$
(2.8)

Keterangan:
RSFE = Cumulative Error
MAD = Mean Absolute Deviation

2.10. Analysis System

Systems analysis is the stage for identivication and evaluate the problem. In the analysis of the system will be known to the principal problems faced by CV JAYAGIRY at the moment and needs what is required in the system. Stages of system analysis is necessary to adjust the system to be built with the needs of users and can help resolve problems that occurred in the previous system.

2.10.1. Analysis SCM

Analysis of Supply Chain Management is an approach used in the finished product warehouse information system to be built. The proposed approach is based on the analysis of the current system.

Methods of supply chain management has a framework consists of three elements are interlinked with each other, namely:

1. Structure of the supply chain network
2. The process of business supply chain
3. Components of supply chain management.

Here are models of scm CV JAYAGIRY:

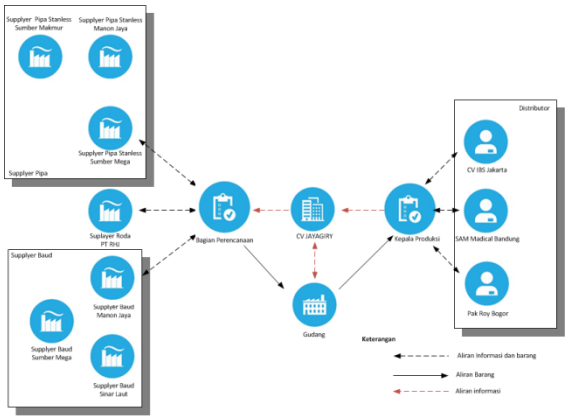


Image 1 Structure of Network Supply Chain Management at CV JAYAGIRY

2.10.2. Inventory Analysis IV pole products

Inventory Analysis IV pole products made by looking at the IV pole sales data in February 2015 throughJanuary 2016. Analysis of the product inventory pole infius done for forecasting supplies products should be storedin the following month.

Here are the steps that must be done to make the product inventory forecasting IV pole in the coming period.

1. Setting up the sales data from the previous period to be processed as input data.
2. Calculating the value of the forecast on sales data by using a single method or technique moving average andsingle exponential smoothing.
3. Looking for the error value of the forecasting techniques described earlier to determine the most accurate method.
4. The smallest error value of the method that will be used as a forecasting results for the next period.

Below in Table 2 are methods - forecasting methods are analyzed with the value forecast for the period of February 2016 and the value of MAD and MSE of each forecasting method.

Table 2 Comparison of Forecasting Error February 2016

Method	Forecasting results	MAD	MSE
Single Moving Average period 9	410	127.93	32990.83
Single Exponensial Smoothing α=3	446	181.92	44473.87

Based on Table 2 above, it can be concluded that the IV pole product forecasting results for the month of February 2016 amounted to 410 units and forecasting that will be used in the construction of information systems products IV pole for the months ahead in CV JAYAGIRY are using Single Moving Average forecasting period 9 Monthly because it produces the smallest forecasting error value, ie the value of MAD = 127.93 and MSE = 32990.83 where the smaller the value of the forecast error, the more accurate forecasting value.

2.10.3. Safety Stock Analysis

After doing the forecasting stage, the next stage is to do the inventory control product IV pole by determining the safe limits of IV pole which must be stored in the warehouse. The goal order to avoid

shortages or emptiness products during the distribution of IV pole

Inventory safety stock or security function to protect errors in predict demand during lead time. Application of safety stock methods used for this research is calculating the minimum limit IV pole product inventories should be available in the next period. Here are examples of product inventory count IV pole using safety stock for a period of one month ahead (in February 2016) :

Safety Stock = Usage Average Period Previous x Lead Time
Jumlah peramalan penjualan bulan Februari 2016 = 410 unit
Number of days in the month of February 2016 = 29 days
Lead time (waiting time) procurement to supplier = 5 days
Safety Stock = (410/29) x 5
= 14 x 5
= 70 unit

Note: the results of safety stock has been rounding.

Based on the safety stock calculations above, the CV JAYAGIRY must provide a safety stock for the product IV pole 70 units in February, 2016.

Furthermore, to determine how many products procurement IV pole that will be stored in warehouse next one month period (Month February 2016), namely in the following ways:

Total Procurement = (Results Forecasting + Safety Stock) - Remaining Stock
Remaining stock products IV pole = 50 Units
Supplies Security (Safet Stock) = 70 Units

Which is known also forecasting results in February 2016 in Table 2 are derived from the calculation method previously selected:

Results Forecasting Month February 2016 = 410 Unit
Total Procurement = (Results Forecasting + Safety Stock) - Remaining Stock
= (410 + 70) – 50
= 480 – 50
= 430 Unit

Thus, the amount of product controls IV pole that will be recorded for the month of February 2016 by CV JAYAGIRY as many as 430 units.

2.10.4. Raw Material Procurement Analysis

Based on the calculation of production control IV pole that has been done on the analysis of inventory control, then the plan must provide the raw materials for the production process as many as 430 units IV pole.

To create an IV pole unit requires one piece of 1cm diameter steel pipe size of 2m, 1 piece of steel pipe berdiametr 3 / 4cm size of 2m, 1 piece of steel as the size of 2m, 1 leg ABS and 8 pieces baud. While for every one piece of stainless steel pipes and axles in can result from cutting one measuring 6m lengths of pipe into three pieces to measure each part perpotong 2m. Because the raw materials as stainless steel pipe and in a message to the supplier measuring 6m each stalk

Here are the overall results of the calculations obtained from any raw material. The results of these calculations are presented in tabular form monitoring of raw materials. Monitoring of raw materials can be seen in Table 3

Table 3 Monitoring of raw materials

Name of Raw Materials	Stcok	Need	Order
1cm diameter steel pipe	50	380	127
Diameter steel pipe 3 / 4cm	55	375	125
As steel diameter 16mm	40	390	130
Leg ABS	30	430	400
Baud	300	3440	3140

Based on Table 3 above in the stock column is the number of inventories of raw materials in the warehouse ready-made, meaning that for every steel pipe and staniless as he had done the cutting. For the column needs is the raw material required for production process that is required in the production process. Where the production planning will be done as many as 430. For reservations column, for each steel pipe and as satainles still in units rod.

2.10.5. Analysis of Delivery (Distribusi)

Analysis of delivery or distribution is carried out to analyze how the process of delivering products to customers.

2.11. Analysis Database

Database analysis is the analysis of data sets that are interconnected to one another so as to support the information system will be built. The data obtained will be used to design the database along with the attributes of each entity and the relationships between these entities. in designing the database, the data model to be used is the Entity Relationship Diagram (ERD). Model ERD product information systems development in CV

JAYAGIRY IV pole can be seen in the following figure:

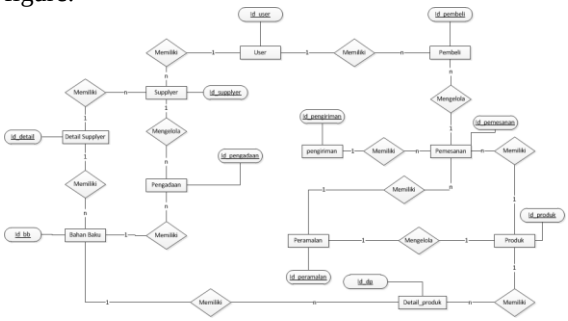


Image 2 ERD CV JAYAGIRY

2.12. Diagram Context

Diagram context is a global model to explain how the data is used and transformed to the process or describe the flow of data into and out of the system. Diagram context on this system can be seen in the following figure:

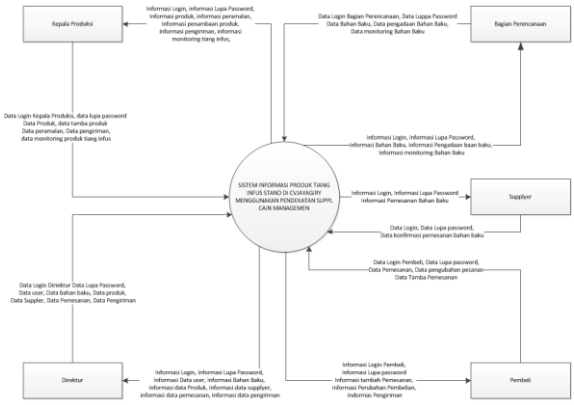


Image 3 Diagram Context

2.13. Data Flow Diagrams

Data Flow Diagrams (DFD) is a picture of the flow of data from the source data providers (input) to a data receiver (output). Here is the DFD on the finished product warehouse information system:

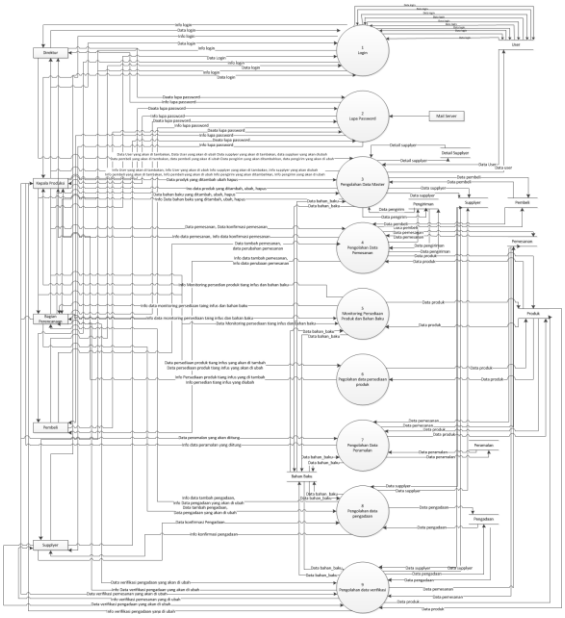


Image 4 DFD Level 1

2.14. Tabel Relation

Table relation used to describe the relationship between the tables in the system in detail or clear. Table relationships will be illustrated in the figure below:

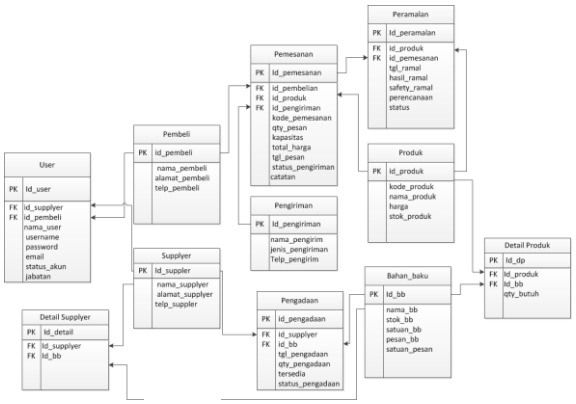


Image 5 Table Relation

2.15. Interface Design

Interface design is used to describe the display of information systems that will be used by the user to interact with the system are made. Interface design in the development of information systems products IV pole in CV JAYAGIRY approach Supply Chain Management are as follows:

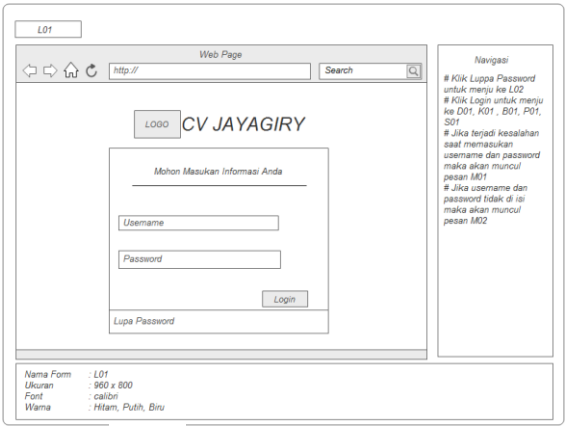


Image 6 Interface Design login

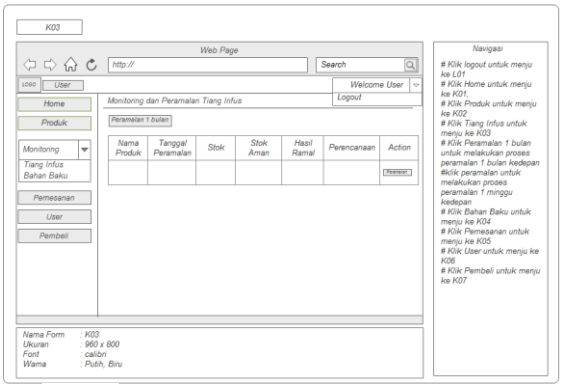


Image 7. Interface design Forcesting Data

2.16. Network Design Semantic

Network design semantic head of production describes the process clicking connect the menus that can be accessed by the head of production with the error message occurs every pro ses. The design of the semantic network head of production can be seen in the figure below:

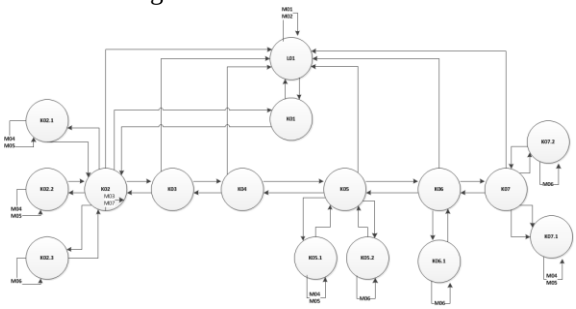


Image 8. Network Design Semantic

2.17. Testing

Testing of the system is the cornerstone that aims to find mistakes or shortcomings in the information system under test. The test intends to determine the information system are made in compliance with the performance in accordance with the design objectives

2.11.1. Results of Testing Black Box

Based on the test results of each process are contained in software that was built by sample testing has been done, then the conclusion of these tests is every process on software built was correct in accordance with the functionality, the filtering mistake of giving an error message to any process happened already good and had enough leverage, as well as the output (output) produced in accordance with expectations.

2.11.2. Beta Result of Testing

Based on the beta testing done before, it can be concluded that:

System product information is quite helpful CV JAYAGIRY especially to the head of production in determining the amount of product should be stored in warehouse as well as help the planning department in determining the estimated ordering raw materials to suppliers namely the existence of forecasting in the form of predictions of the amount of inventory of products that will be stored in warehouse.

1. CLOSING

I n the late will explain about the conclusion of the study is based on the results obtained after the analysis, design , and implementation of the system design were built and suggestions which will provide important records and possible improvements that need to be done for the development of the system.

3.1 Conclusion

Based on the results of the implementation and testing that has been done in penulisaan this thesis, it can be concluded as follows:

1. System information product that is built can help the planning department in determining the estimated ordering raw materials.
2. Product information systems that are built can help in the planning section to avoid any lack of raw material inventory in the production process
3. System information product that is built can help the head of production in determining the inventory of products IV pole which must be stored in warehouse

3.2 Suggestion

The suggestions for the development of the construction of information systems products IV pole in CV JAYAGIRY using the approach of supply chain management are as follows:

1. The system is still a lack of functional, is expected for the future can be developed further with the help of scheduling processing of products
2. It takes a system that can provide information directly to the buyer or the supplier of the action taken against the company ordering products or procurement of raw materials such as sms getway

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