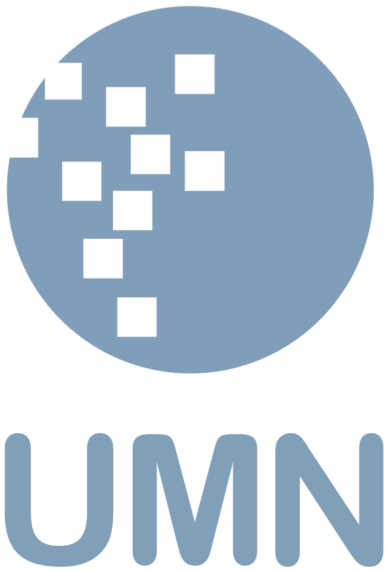
ISSN 2355-0082

IJNMT

International Journal of New Media Technology

VOLUME V No. II


UMN

ISSN 2355-0082

EDITORIAL BOARD

EDITORIAL ADDRESS

Universitas Multimedia Nusantara

Jl. Scientia Boulevard, Gading Serpong

Tangerang, Banten, 15811

Telp. (021) 5422 0808

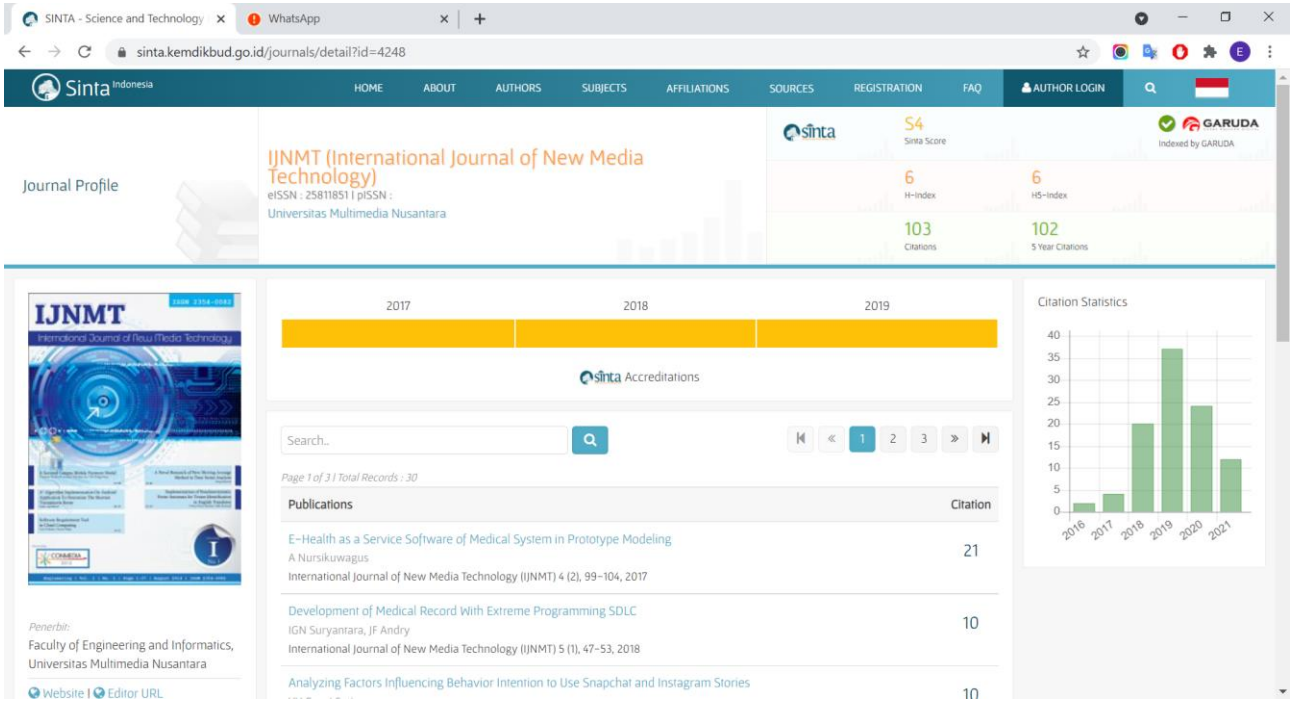
Faks. (021) 5422 0800

Email: ftijurnal@umn.ac.id

International Journal of New Media Technology (IJNMT) is a scholarly open access, peer-reviewed, and interdisciplinary journal focusing on theories, methods, and implementations of new media technology. IJNMT is published annually by Faculty of Engineering and Informatics, Universitas Multimedia Nusantara in cooperation with UMN Press. Topics include, but not limited to digital technology for creative industry, infrastructure technology, computing communication and networking, signal and image processing, intelligent system, control and embedded system, mobile and web based system, robotics.

ISSN 2355-0082

TABLE OF CONTENT


SINTA - Science and Technology
WhatsApp
sinta.kemdikbud.go.id/journals/detail?id=4248
Sinta Indonesia
HOME
ABOUT
AUTHORS
SUBJECTS
AFFILIATIONS
SOURCES
REGISTRATION
FAQ
AUTHOR LOGIN
Journal Profile
IJNMT (International Journal of New Media Technology)
eISSN : 25811851 | pISSN :
Universitas Multimedia Nusantara
S4
Sinta Score
GARUDA
Indexed by GARUDA
6
H-Index
6
H5-Index
103
Citations
102
5 Year Citations
IJNMT
International Journal of New Media Technology
Penerbit:
Faculty of Engineering and Informatics, Universitas Multimedia Nusantara
Website | Editor URL
2017
2018
2019
Sinta Accreditations
Search..
Page 1 of 3 | Total Records : 30
Publications
Citation
E-Health as a Service Software of Medical System in Prototype Modeling
A Nursikuwagus
International Journal of New Media Technology (IJNMT) 4 (2), 99-104, 2017
21
Development of Medical Record With Extreme Programming SDLC
IGN Suryantara, JF Andry
International Journal of New Media Technology (IJNMT) 5 (1), 47-53, 2018
10
Analyzing Factors Influencing Behavior Intention to Use Snapchat and Instagram Stories
10
Citation Statistics
40
35
30
25
20
15
10
5
0
2016
2017
2018
2019
2020
2021

ISSN 2355-0082

Supply Chain Management Implementation on Snacks Production Process

Sahara Syarifatul Choeriyah[1], Eko Budi Setiawan[2]
Program Studi Teknik Informatika, Universitas Komputer Indonesia, Jl. Dipatiukur 112 Bandung
saharasyarifatul@gmail.com
eko@email.unikom.ac.id

Received on April 24th, 2018
Accepted on December 21st, 2018

***Abstract*—PQR's company is a company that located in Citeureup Tasikmalaya. The company is engaged in the production of snacks such as "mie lidi" or lidi noodles. It was found some problems that happened in this company such as purchasing department have a problem to determine the number of raw material requirements to the supplier. It happened because of the uncertain demands from the distributors. Besides a problem in the upstream, there was some problem in the downstream that was shipping department was difficult to make a schedule of product shipping. Based on the problems, so the company needs the development of the system with by supply chain management approach. A strategy that used in the production process is made to stock. The method that used is forecasting method single moving average based on sales data. The inventory calculation of the safe limits of raw materials and products use safety stock method. After testing has done, then it gets the conclusion from the result that this information system is making easy purchasing department to determine the number of raw materials for procurement process to a supplier and it is making easy shipping department to make a schedule of product shipping for distributors.**

***Index Terms*— supply chain management, make-to-stock, single moving average, safety stock**

I. INTRODUCTION

Dokum QR's company is a company that located in Citeureup Tasikmalaya and the business is engaged in the production of snacks such as "mie lidi" or lidi noodles. This company organizes the activities from upstream until downstream. Activities in the upstream are the activities with their suppliers, such as procurement of raw materials. The activities in the downstream are all activities like a sending product to customers [1].

After conducting an interview with the head of purchasing section in August 2017, it was found that at this time the company in the upstream activities in the procurement of raw materials to suppliers made based on sales reports the previous month. Then on the production activities of the company, he explained that the company made the production process before the request of the distributor (customer).

However, the company encountered problems when there was uncertain demand from distributors. If the demand rises, then the vacancy for some raw materials. Conversely, if the demand falls, it results in the buildup for some raw materials. Known in April 2017 there was an increase in product demand by 31% from the previous month.

At that time, product demand from distributors was 10.076 packs of noodle stick. However, the company experienced a shortage of raw material stocks in which the stock of raw materials owned by the company is only able to meet the demand from distributors as much as 7.155 packs of lidi noodle. Meanwhile, in May 2017 there was a decrease in product demand from distributors by 29% from the previous month. When the product demand from distributors is 7.460 packs of noodles, the company has a stockpile of raw materials in which the raw material stock owned by the company is able to fulfill the demand of the products from the distributors of 10.433 packs of noodles. So the problems that occur in the upstream part of purchasing has difficulty to determine the amount of procurement of raw materials to suppliers.

After conducting an interview in the same month as the delivery chief, he explained that the downstream activities are receiving product orders and then sending them to distributors. Distributors order products through the marketing department, then the product will be delivered to the distributor by the shipping department using the company's private vehicle. The delivery department often has difficulties in determining the capacity of the vehicle to be used for the shipping process as well as the difficulty in conducting the monitoring process during delivery as there is no system that can monitor the shipment process.

Both problems occur because there is no system that can manage supply chain information. A supply chain is a system where the organization distributes its products and services to customers [2]. With the development of supply chain management information system is expected to be the right solution to solve the problems that occur.

The single moving average has been used in some previous research. Haryanto [3] implements it for the

provision of medicines in hospitals, while Ricky et al [4] implement a single moving average for the forecasting process of stock items at bookstores. Based on these studies, the single moving average is suitable when use data is stationary.

II. LITERATURE REVIEW

A. *Supply Chain Management*

A supply chain is a network of companies involved in supplying raw materials, producing goods, or sending them to the final supplier. Supply Chain Management (SCM) is a method, tool, or management approach. It should be emphasized, however, that SCM requires an integrated approach or method based on the spirit of collaboration. SCM is not only oriented to the internal affairs of a company but also the external affairs that involve relationships with partner companies [5]. There are three chain components in SCM: upstream supply chain management, internal supply chain management, and downstream supply chain management [6].

B. *Safety Stock*

Safety stock serves to protect errors in predicting demand during lead time. Lead time is the time required between the raw materials ordered to arrive at the company. The amount of safety stock value depends on supply and demand uncertainty [5]. The formula for calculating safety stock is as follows.

$$Safety\ Stock = Z \times Sdl \quad (1)$$

Information:

Z = Service Level

Sdl = Uncertainty of Demand and Lead Time

Reorder point is when the inventory reaches the point where ordering is required. The formula for determining the reorder point is as follows.

$$Sdl = \sqrt{(d^2 \times sl^2 + l \times sd^2)} \quad (2)$$

Information:

d = Average Usage

sl = Standard Deviation Lead Time

l = Lead Time

sd = Standard Deviation of Average Usage

C. *Forecasting*

Forecasting is to forecast what happens in the future. While the plan is a determination of what will be done in the future. By itself, there is a difference between forecast and plan. A forecast is forecasting what will happen, but not necessarily can be implemented by the company. Forecasting aims to obtain forecasts or predictions that minimize errors in forecasts that are usually measured by mean square error, mean absolute error.

Forecasting is widely used for a wide range of scholarship and purposes, such as for data calculations [7], weather forecasting [8] and also used in foreign exchange [9].

D. *Forecasting Method of Single Moving Average*

The single moving average method uses a number of actual data of new requests to generate prediction 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 are to make forecasts require historical data within a certain time period, the longer the moving average will result in a smoother moving average. The moving average system can be calculated by the equation.

$$S_{t+1} = \frac{x_t + x_t - 1 + \cdots + x_t - n + 1}{n} \quad (3)$$

Information:

St + 1 = Forecast for period t + 1.

Xt = Data in period t.

n = Time Moving Averages

E. *Measurement of Forecasting Error*

Measurement of forecasting errors can use mean absolute error, mean square error, mean absolute percentage error. Here is an explanation of forecasting errors.

Mean Absolute Error (MAE)

Mean absolute error (MAE) is the average absolute error value of predictor error (positive and negative values are not seen) can be seen in the following equation.

$$MAE = \frac{\sum |x_t - F_t|}{n} \quad (4)$$

Mean Square Error (MSE)

Mean square error (MSE) is the mean forecasting error squared. Can be seen in the following equation.

$$MSE = \frac{\sum (x_t - F_t)}{n} \quad (5)$$

Mean Absolute Percentage Error (MAPE)

MAPE is a relative error measure. MAPE specifies the percentage of error forecasting results against actual demand over a given period which will give the error percentage information too high or too low. Systematically, MAPE can be seen in the following equation.

$$MAPE = \frac{100}{n} \sum |A_t \frac{F_t}{A}| \quad (6)$$

III. RESULT

A. *Problem Analysis*

Problem analysis is a process to learn some system problem that has identified in an identifying process. Problem analysis from this running system are:

1. Purchasing department has difficulty in determining the number of raw materials to suppliers because of the number of requests from an erratic distributor.
2. Shipping department has difficulty to do shipping schedule of a product because often experience delays in shipments caused by product stock shortages.

B. Supply Chain Management Analysis

Supply chain management analysis was used to apply supply chain management approach to the information system that will be built.

Supply Chain Management Model

Supply chain management model explains the activities in the company from upstream until downstream. In a running of activities, the company not only have a relationship with the internal department but it has a relationship with several partner of the company. Figure 1 is a supply chain management model at the PQR's company. The detail description can be seen in figure 1.

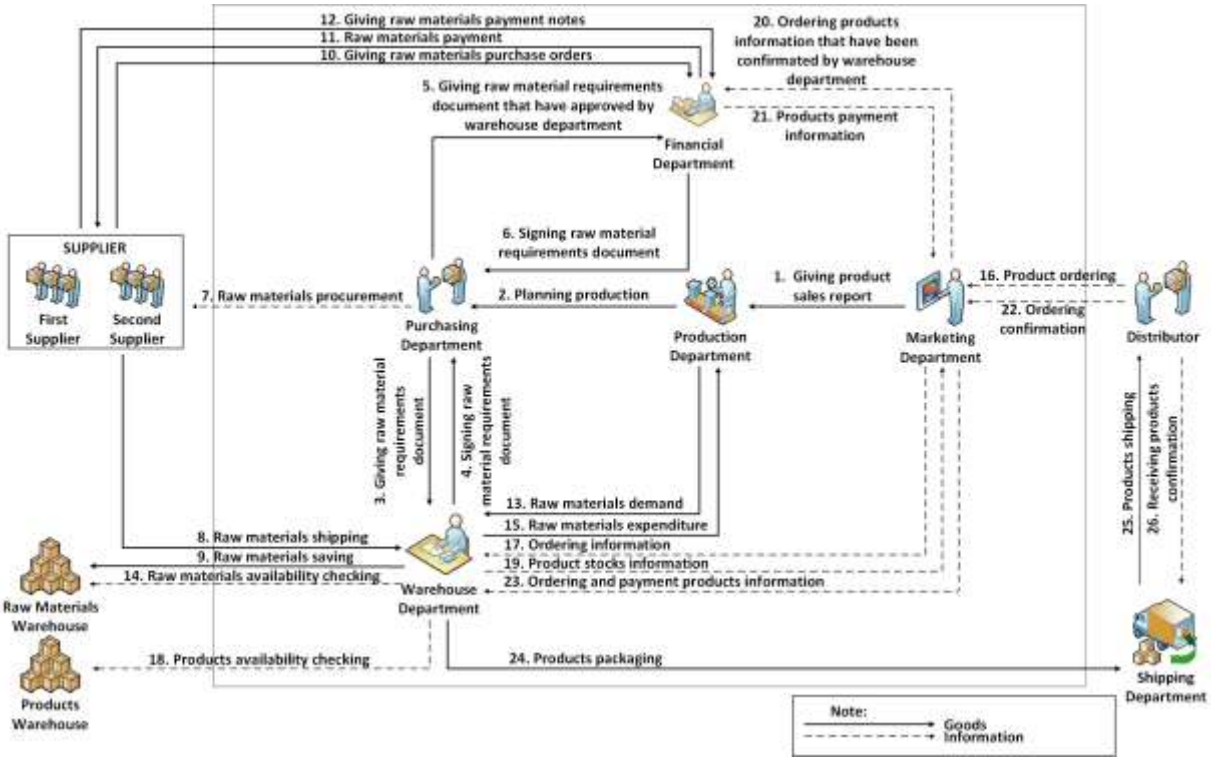


Figure 1. Supply chain management model at PQR's company

Supply Chain Analysis at PQR's Company

Supply chain analysis was done to describe information system of supply chain management that will be built at the PQR's company. Steps of supply chain analysis that will be doing are:

a. The amount of raw materials order analysis.
b. Inventory (monitoring) analysis.
c. Production analysis.
d. Procurement of raw materials analysis.
e. Shipping products analysis.

a. The Amount of Raw Materials Order Analysis

The determining the number of raw materials that must be ordered to a supplier, at the first step is purchasing department must be forecasting of product sales. Then the result of it will be used to forecasting the number of raw material requirements to be knowing the number of raw materials that must be ordered to a supplier. So, when the distributor has ordered, the amount of product that has ordered by the distributor can be completed because there were doing certain determine the number of raw materials in a procurement process.

Forecast method that used is a quantitative forecast method with time series model analysis. It was chosen based on histories data and projecting it to the future [3]. Forecast method that is used a single moving average based on comparison with single exponential smoothing and weighted moving average method. And the sample data were used is raw lidi noodles because it was the best seller in February until July 2017 than another product. Table 1 is a sales data of raw lidi noodles. The detail description can be seen in table 1.

Table 1. Sales data raw lidi noodles

No	Period	Product Sales Data Raw Lidi Noodles
1	February	3.032 packs
2	March	2.286 packs
3	April	3.010 packs
4	May	2.112 packs
5	June	2.356 packs
6	July	2.365 packs

From the data in table 1, it can be made a graphic to determining method will be used on forecasting with the pattern of data. Figure 2 is a graphic of sales data raw lidi noodles. The detail description can be seen in figure 2.

Figure 2. Product sales data raw lidi noodles

Based on the pattern of data above, so the next step was forecasting with single moving average method. The period of moving average value used is 3 monthly and 5 monthly period because in the third and fifth months there is considerable fluctuation. The calculation of forecasting is as follows.

Calculation for n = 3

The forecast result for n = 3 is obtained by entering Xt 3 months before the month to know the forecast result. Here are the calculations to determine to forecast in August 2017.

$$St_{August} = \frac{Xt_{May} + Xt_{June} + Xt_{July}}{n}$$
$$= \frac{2112 + 2356 + 2365}{3}$$
$$= 2278 \text{ (Rounding results)}$$

Calculation for n = 5

The forecast result for n = 5 is obtained by entering Xt 5 months before the month you want to know the forecast result. Here are the calculations to determine to forecast in August 2017.

$$St_{August} = \frac{Xt_{March} + Xt_{April} + Xt_{May} + Xt_{June} + Xt_{July}}{n}$$
$$= \frac{2286 + 3010 + 2112 + 2356 + 2365}{5}$$
$$= 2426 \text{ (Rounding results)}$$

Based on the results of the previous calculation, all the forecasting results with the method of single moving average can be seen in table 2.

Forecasting used can be measured accuracy in predicting it by calculating the accuracy of the error rate, one of them with the MSE (Mean Square Error) method. Table 3 is the calculation of the mean square forecasting error. A more detailed explanation can be seen in table 3.

Table 3. Sales forecast result raw lidi noodles

Period	Sales Data	3 month	5 month
February	3.032	-	-
March	2.286	-	-
April	3.010	-	-
May	2.112	2.776	-
June	2.356	3.704	-
July	2.365	2.493	2.559
Forecast Result on August		2.278	2.426

Based on the calculation in table 3, then obtained the smallest MSE from forecasting results period 5 monthly with a value of 37636. Then it can be concluded that for the month of August 2017, the company recommended to procuring raw materials for raw noodle products as much as 2426 packs.

The next step is to calculate the number of raw materials to be ordered based on forecasting results by multiplying the forecast results for a 5 monthly period with the amount of composition of each raw material. Table 4 is the raw material composition of crude noodle noodles. A more detailed explanation can be seen in table 4.

Table 4. Raw material composition raw lidi noodles

Product	Raw Materials	The Number of Raw Materials
Raw lidi noodles	Wheat	1 kg
	Cooking Oil	100 gram
	Salt	40 gram
	Food Coloring	4 ml
	Red Onion	0,048 kg
	White Onion	0,032 kg

Table 2. Calculation mean square forecasting error

Period	Sales Data	3 Monthly			5 Monthly		
		Forecast Data	Error	Quadratic Error	Forecast Data	Error	Quadratic Error
February	3.032	-	-	-	-	-	-
March	2.286	-	-	-	-	-	-
April	3.010	-	-	-	-	-	-
May	2.112	2.776	664	440.896	-	-	-
June	2.356	3.704	1.348	1.817.104	-	-	-
July	2.365	2.493	1.28	16.299	2.559	194	37.636
MSE		**758.100**			**37.636**		

Having known the composition of each raw material, it can be seen the calculation of the number of raw materials that must be ordered by the company in accordance with forecasting results period of 5 months. Table 5 is the amount of raw material to be ordered. A more detailed explanation can be seen in table 5.

Table 5. The amount of raw materials must be ordered

Raw Material	Calculation	The Number of Raw Materials	The Number of Raw Materials Must be Ordered
Wheat	2.426 x 1	2.426 kg	97 sacks
Cooking Oil	2.426 x 100		242.600 gr
Salt	2.426 x 40	97.040 gr	388 packs
Food Coloring	2.426 x 4	9.704 ml	10 bottles
Red Onion	2.426 x 0,048	116 kg	116 kg
White Onion	2.426 x 0,032	78 kg	78 kg

b. Inventory Monitoring Analysis

After determining the number of raw materials will be ordered, the next step is doing inventory monitoring of raw materials and products with using safety stock method.

Inventory monitoring is used to determining safety limit inventory of raw materials and products that must available at the warehouse. The example of calculation raw materials inventory based on products inventory.

Safety Stock Calculation

Forecasting amount of August 2017 = 2426 packs
The number of working days in a month = 26 days
Lead Time procurement to supplier (l) = 5 days
Average monthly procurement (d)
= 2426/26 = 93.31
Standard Lead Time Deviation (sl) = 0.5
Standard Deviation Booking (sd) = 2.6
Service Level 95% (Z) = 1.64
Safety Stock = Z x Sdl
Sdl = $\sqrt{(d^2 \times sl^2 + l \times sd^2)}$
Sdl = $\sqrt{93.31^2 \times 0.5^2 + 5 \times 2.6^2}$
Sdl = $\sqrt{2210.5}$
Sdl = 47.01
Safety Stock = 1.64 x 47.01
Safety Stock = 77.1
Safety Stock = 77 (rounding)

Based on the calculation of safety stock, the company must provide raw material stock in accordance with the safety stock of raw noodle products, which are 77 packs for each raw material. Table 6 is the raw material stock of raw lidi noodles. A more detailed explanation can be found in table 6.

Table 6. Safety stock of raw materials lidi noodles

Raw Materials	Calculation	Result	*Safety Stock*
Wheat	77 x 1	77 kg	77 kg
Cooking Oil	77 x 100	7.700 gram	10 liter
Salt	77 x 40	3.080 gram	3 kg
Food Coloring	77 x 4	308 ml	308 ml
Red Onion	77 x 0,048	4 kg	4 kg
White Onion	77 x 0,032	3 kg	3 kg

After doing inventory monitoring of product. The next step is a doing inventory monitoring of product. Table 7 is an example inventory monitoring of raw materials. The detail description can be seen in table 7.

Table 7. Product inventory monitoring

Product	Stock	*Safety Stock*	Status
Raw lidi noodles	1.080	77 packs	Safety

After monitoring the product inventory, then it will be monitored raw material inventory. Table 8 is an example of monitoring raw material inventory. A more detailed explanation can be seen in table 8.

Table 8. Raw materials inventory monitoring

Raw Materials	Stock	*Safety Stock*	Status
Wheat	150 kg	77 kg	Safety
Cooking Oil	125 lt	10 lt	Safety
Salt	50 kg	3 kg	Safety
Food Coloring	289 ml	308 ml	Not Safety
Red Onion	2 kg	4 kg	Not Safety
White Onion	4 kg	3 kg	Safety

c. Production Analysis

In this step, production department does planning production process to determining the amount of product that will be produced every day based on the result of forecasting calculation divided with the amount of the workday on month.

d. Procurement of Raw Materials Analysis

Procurement of raw materials is used by purchasing department to suppliers than it has ordered will be sent by suppliers and it was received by warehouse department when it arrived at the company. Based on an inventory of raw materials, when raw materials stocks have not safety status, so the company must do procurement with the number of raw materials that be ordered based on the forecasting result plus safety stock than reduced warehouse stock. The procurement process is doing to suppliers that have relation with a company in the form of investment. For the first supplier with the amount of highest investment have a percentage of purchases raw materials at about 70%. However, 30% purchases raw materials will be completed by the second supplier.

e. Shipping Products Analysis

Shipping products analysis has proposed to determining the amount of transportation capacity on shipping product and it will be doing monitoring process while shipping happened. So, the company can be knowing a product that is ordered by distributor have arrived or not to them.

C. Data Flow Diagram

DFD level 1 in information system with using supply chain management approach at the PQR's company describes on general about all process that is happened on the system. Figure 3 is a DFD Level 1 information system supply chain management at PQR's company. A more explanation can be seen in figure 3.

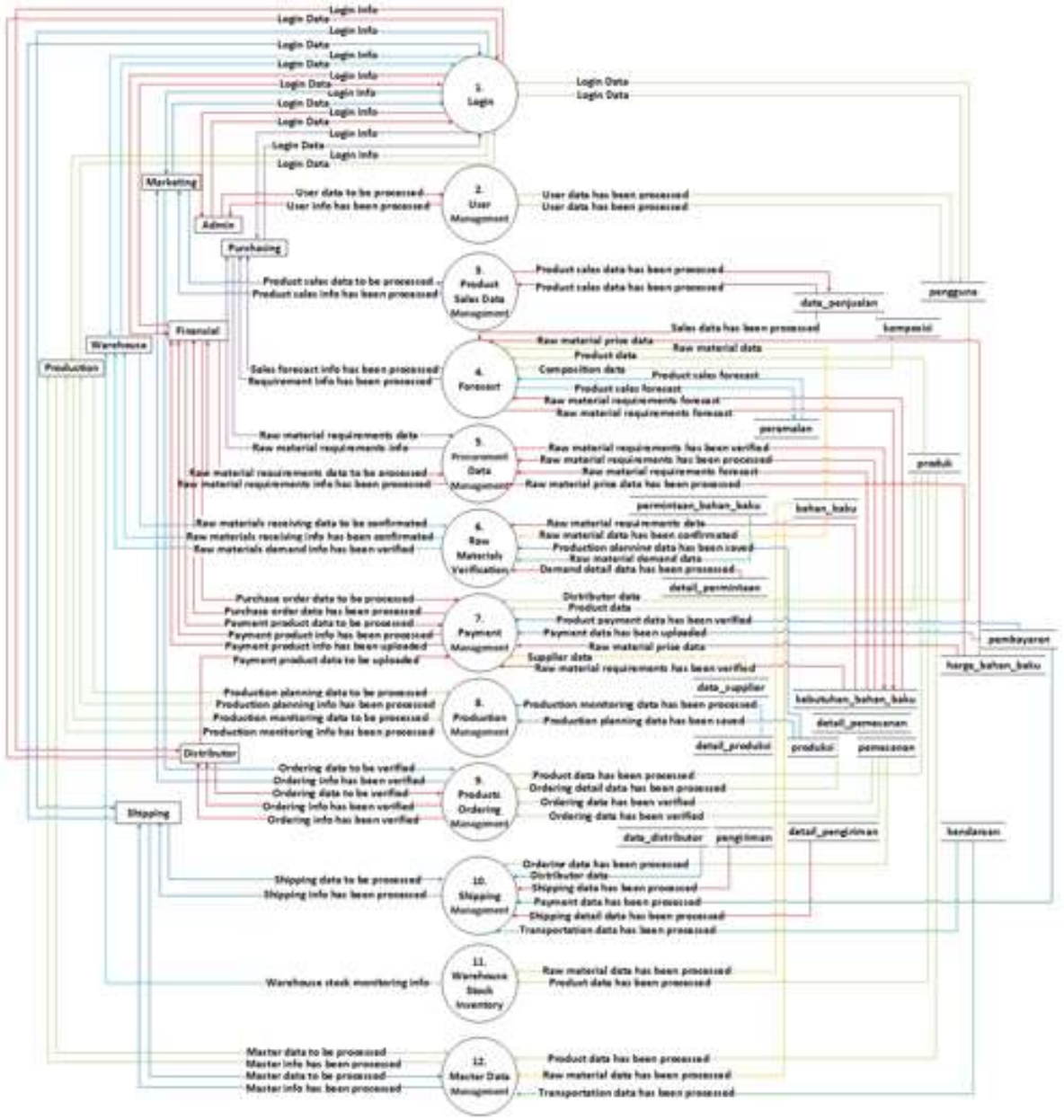


Figure 3. DFD Level 1 Supply Chain Management Information System

D. System Implementation

System implementation is a step to apply the results analysis and designing system. This step aims to do confirmation design. So, a user on the system can give suggestions for developing the system.

Software Implementation

Software implementation describes the specification of software that will be used for information system implementation with using supply chain management approach at the PQR's company. Table 9 is a software implementation of information system supply chain management at PQR's company. A more explanation can be seen in table 9.

Table 9. Software implementation

No	Software	Specification
1	Operation System	Operation System Windows 8.1
2	Web Server	XAMPP Server
3	Web Browser	Google Chrome
4	Database Server	MySql
5	Code Editor	Sublime Text 3

Hardware Implementation

Hardware implementation describes the specification of hardware that will be used for information system implementation with using supply chain management approach at PQR's company. Table 10 is a hardware implementation of information

system supply chain management at PQR's company. A more explanation can be seen in table 10.

Table 10. Hardware implementation

No	Hardware	Specification
1	Processor	Intel Core 2 Duo 2-Ghz
2	Memory	2 Gb
3	Storage	250 Gb
4	VGA	Intel HD Graphic
5	Monitor	14"
6	Mouse	*Optical Mouse*
7	Keyboard	*Standard*

Interface Implementation

Interface implementation is a media for a user interaction with the system that will be built. Interface implementation from information system supply chain management at PQR's company are:

Marketing Department Interface

Marketing interface is used to do recapitulation of sales data as references to forecasting of sale product, forecasting of raw materials needed and for verification order from the distributor. Marketing interface implementation can be seen in figure 4.

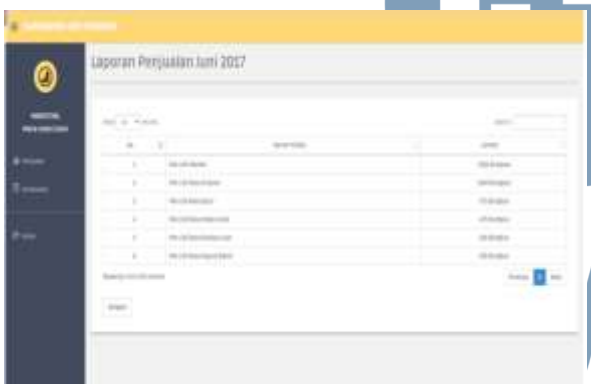


Figure 4. Marketing interface

Purchasing Department Interface

Purchasing interface is used to forecast of sale date, forecasting of raw materials needed, and verification procurement of raw materials from a supplier. Purchasing interface can be seen in figure 5 above.

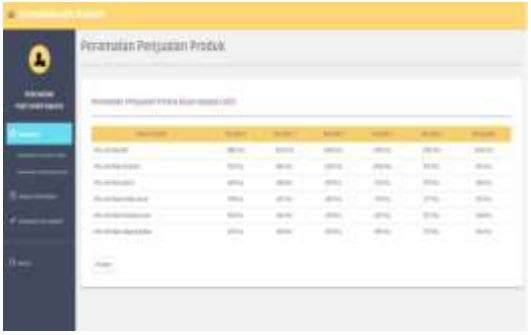


Figure 5. Purchasing interface

Shipping Department Interface

Shipping department interface is used to do shipping schedule, determining transportation capacity, and monitoring of shipping process. Shipping department interface can be seen in figure 6 above.

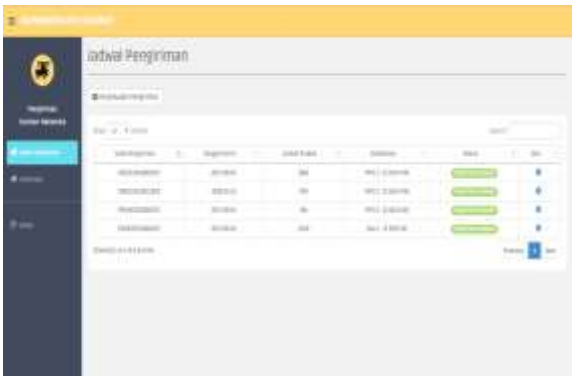


Figure 6. Shipping interface.

E. System Testing

System testing aims to found error or deficiency on an information system that will be tested. It is doing to know what does the development of this information system has completed a performance with the purpose of design or not.

The testing that used to test a system is black box testing method. Black box testing is focused on a functional requirements information system. Planning testing what will be doing is a test a system that will be built on black box and beta.

Functional Testing

Black box testing is focused on functional requirement software will be built. After do testing to several samples, so it can take the conclusion that functional system has been shown the output which is expected.

User Acceptance Test (UAT) Testing

Testing User Acceptance Test (UAT) is to confirm that the system being tested can meet the needs and can work correctly before it is given to the end user. After testing User Acceptance Test (UAT) with some test sample case, it can be concluded that all the process can be run properly and can be used.

Beta Testing

Beta testing is done with the aim to know the extent to which the quality of software that has been built, whether it is in accordance with the goal or not. The test was conducted in January 2018 at PQR Company by using interview technique to 7 resource persons as a user of an information system are head of the department, head of purchasing, head of marketing, head of the production, head of the warehouse, and head of the shipment. Resource persons provide varied answers and after the beta

testing is done, it can be obtained conclusions for several things are as follows:

1. The system has facilitated the purchasing part in determining the amount of raw material procurement to the supplier because the information has been presented automatically in the system.
2. The system has facilitated the delivery part in monitoring during shipment.
3. This system has also helped admin, part production, warehouse, marketing, and finance in carrying out their respective jobs.
4. Information provided by the system is complete enough. However, it is still considered incomplete for some users.
5. The built system has a simple and easy to understand interface.

IV. CONCLUSION

The conclusions and suggestions obtained from the results of this study are:

A. Conclusion

Based on the results of testing the development of information systems with supply chain management approach, it can be concluded as follows:

1. Development of information systems using supply chain management approaches can facilitate the purchasing department to determine the amount of procurement of raw materials to suppliers because the determination of the amount of raw material procurement has been provided in the system automatically.
2. Development of information systems using supply chain management approaches can provide convenience to the delivery department to monitor during the delivery is in progress.

B. Suggestion

Based on the results of testing the development of information systems with supply chain management approach, it can be obtained suggestions for system development is the addition of password change function in the menu of each user to facilitate users to change the password.

REFERENCES

[1] C. Furqon, "Analisis Manajemen Dan Kinerja Rantai Pasokan Agribisnis Buah Stroberi Di Kabupaten Bandung," Image, vol. 3, no. 2, p. 109, 2014.

[2] E. B. Setiawan and A. Setiyadi, "Implementasi Supply Chain Management (SCM) Dalam Sistem Informasi Gudang Untuk Meningkatkan Efektifitas dan Efisiensi Proses Pergudangan," Semnasteknomedia, vol. 5, no. 1, pp. 1-2-19, 2017.

[3] H. Tanuwijaya, "Penerapan Metode Winter's Exponential Smoothing dan Single Moving Average Dalam Sistem Informasi Pengadaan Obat Rumah Sakit," in Prosiding Seminar Nasional Manajemen Teknologi XI ITS, Surabaya, 2010.

[4] R. Effendi, J. O. Ong and A. S. Gunawan, "Penerapan Sistem Klasifikasi SIS dan Kombinasi Forecasting Sebagai Pendukung Keputusan di Dalam Sistem Informasi Pengadaan Barang," Jurnal Telematika, vol. 7, no. 1, 2015.

[5] I. N. Pujawan and E. Mahendrawathi, Supply Chain Management Edisi Kedua, Surabaya: Guna Widya, 2010.

[6] T. S. Kaihatu, Manajemen Supply Chain Pada Industri Global, Surabaya: PT. Revka Petra Media, 2016.

[7] McDermott, P.L., Wikle, C.K. and Millspaugh, J, A hierarchical spatiotemporal analog forecasting model for count data. Ecology and evolution, 8(1), pp.790-800, 2018.

[8] Powers, J.G., Klemp, J.B., Skamarock, W.C., Davis, C.A., Dudhia, J., Gill, D.O., Coen, J.L., Gochis, D.J., Ahmadov, R., Peckham, S.E. and Grell, G.A. The Weather Research and Forecasting Model: Overview, System Efforts, and Future Directions. Bulletin of the American Meteorological Society, 98(8), pp.1717-1737, 2017.

[9] Tenti, P, Forecasting foreign exchange rates using recurrent neural networks. In Artificial Intelligence Applications on Wall Street (pp. 567-580). Routledge. 2017.