SUPPLY CHAIN PRODUCT DEVELOPMENT SYSTEM USING KEBAYA CLOTHING SUPPLY CHAIN MANAGEMENT IN CV. BIENTA GEMILANG

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ABSTRACT

CV. Bienta scintillating company that produces convection kebaya and a woman's dress. The strategy used is a make-to-order that their reservations before their production process. Difficult to handle in production management resulted in the production process does not work well and have an impact on the delivery of the difficulty in determining the product delivery time due to scheduling production parts that do not fit on the progress beginning to end. Customers will certainly make sure if the results of the products ordered in accordance with the estimated time that customers want.

Based on the problems that exist in the CV. Bienta Gemilang, we need a development system of supply chain products that can regulate the management of procurement of raw materials using Economic Order Quality (EOQ) and scheduling of delivery, and management of production planning to determine estimates of booking to allow time for the completion of the product to the customer approach supply Chain Management. EOQ (Economic Order Quantity) is a simple model that can be used to determine the size of the reservation economy. This model considers two inventory costs and expenses that the cost of the message store.

These information systems are built to facilitate the head of production in providing any stage of production, allowing the head of the warehouse in the purchase of raw materials and facilitate the delivery section scheduling deliveries to the expedition

Keywords : Supply chain management, EOQ, Products, Booking, Stages of Production

1. INTRODUCTION

CV. Bienta scintillating company that produces convection kebaya and a woman's dress. The categories such as kebaya robe, a variation kebaya lady, modern kebaya, Blous and wedding dresses. The process that occurs in the convection and checks include making kebaya design and dress, measuring body costumer with centimeters and peterban, make patterns, patterning fabric, make a mark (merader), the process of sewing, to put the application brocade, pairing the label, and then check the threads wasted, until a final check and dispatch fashion. Upstream activities conducted by CV. Bienta Gemilang with suppliers that the procurement of raw materials to the supplier, receiving raw materials from the suppliers, then perform the processing of raw materials into products. In addition to the activities in the downstream including receiving orders for products and make the process of delivery to the customer. The production stages for each employee with the number of employees 19 of them, one person at the manager, 1 administration, 1 person as designers, 6 sewing parts, 2 parts warehouse, 2 parts mounting sequins / beads, 2 parts of embroidery, and 4 parts delivery.

In interviews with the Manager CV. Bienta Gemilang namely Anastassya daughter Nabila, stating that the customer ordering process will be informed when a product that will finish the process and delivery time fashion products ordered to the customer's hands. But lately Mba Nabila often get customers who complain will be the processing time of orders that do not match the product completion time. Difficult to handle in production management resulted in the production process does not work well and have an

impact on the delivery of the difficulty in determining the product delivery time due to scheduling production parts that do not fit on the progress beginning to end. Customers will certainly make sure if the results of the products ordered in accordance with the estimated time that customers want.

Based on an interview with Mr. Nuhhardanto as part cellarer, ordering raw materials is done by the Warehouse to see the availability of raw materials needed to manufacture new products. The strategy used in the production process is the strategy make-to-order that their reservations before their production process. In ordering raw materials occur several processes such as purchasing time period was done three days before the material in question runs. When the high level product orders which supplies depleted, then the ordering of raw materials do when you receive such high booking. This can be a problem when demand is high booking shortage of raw materials in the warehouse because of the length of ordering raw materials which can result in impaired production process.

For product delivery, is done directly by the expedition based on booking data that is given by the shipping department. CV. Bienta Gemilang using a third party in terms of delivery. Problems arising resulting from the production part that does not run smoothly in the production process so that in determining the time of delivery, part delivery difficulties in managing the delivery time is not appropriate. Therefore, when there is a delay in delivery due to the production process that does not run smoothly can be detrimental to the company.

Based on the problems that exist in the CV. Bienta Gemilang, we need a development system of supply chain products that can regulate the management of procurement of raw materials using Economic Order Quality (EOQ) and scheduling of delivery, and management of production planning to determine estimates of booking to allow time for the completion of the production to the customer approach supply Chain Management.

2. CONTENTS OF RESEARCH

2.1 Stages of Supply Chain Management at PT. Dual Aria Primary

As for supply chain management in the CV. Bienta Gemilang can be seen in Figure 1.

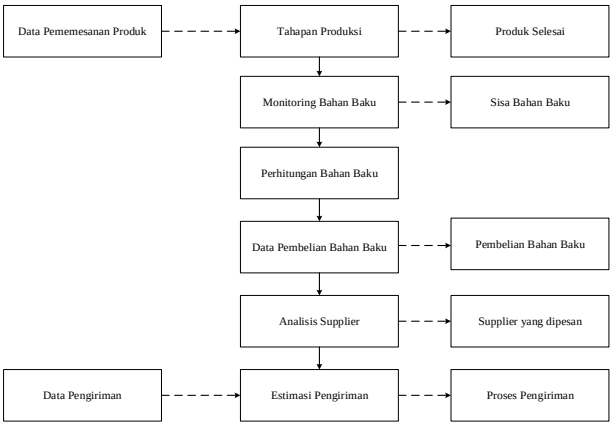


Figure 1 Stages *SCM*CV. Bienta Gemilang

On System Information *supply Chain Management*(SCM) in the CV. Bienta Gemilang to be built, then the stages as follows:

1. Data Product Order

In the product order offenders whose role is a customer who is already registering a product and make a purchase by ordering products

2. stages of Production

There are several actors involved at this stage of production is the company's internal parts such as Head of Production. Head of Production will determine the stages which will be in production.

3. Finished products

Among the results of the production phase is the completion of the products manufactured by section Head of Production

4. Monitoring Raw Materials

Monitoring of raw materials contained in the raw material is needed, the rest of the raw materials and raw materials that will be purchased.

5. The rest of Raw Materials

Results from the use of raw materials from raw materials obtained monitoring results of the raw materials that will be used in the upcoming months. consumer..

6. Calculation of Raw Materials

Actors involved include bgaian cellarer duty to pass the calculation of purchase of raw materials to be used.

7. Raw Material Purchasing Data

Performers who play a role in the purchasing process of raw materials is the cellarer in charge of making purchases after performing calculations in advance.

8. Supplier Analysis

In the analysis of supplier offender whose role is Head Gudan and the supplier-related suppliers in the ordering of the necessary raw materials

9. Estimated Shipping

Actors who play a role in making the delivery schedule is part Delivery charge for scheduling delivery

2.2 Stages of Production

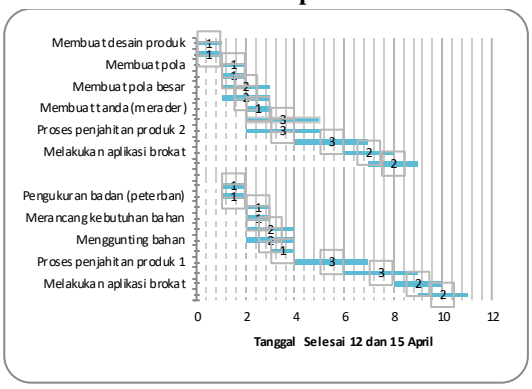
Production stage is controlling the various activities that cultivate various types of resources to make certain goods or services, CV. Bienta Gemilang had some production processes at every stage of production. To perform the data required production phases of customer orders, the first data taken from the order data will show the number of products ordered, to estimate the length of the production of clothing products from start to finish can be obtained from the stage production based on customer orders the following dates:

Table 1. Stages On 3 and 4 April 2018

No	TAHAP PRODUKSI	TANGGAL MULAI	TANGGAL AKHIR	MULAI HARI	DURASI KERJA	PEGAWAI
Pemesanan pelanggan Anna Salon tgl 3 April 2018						
1	Membuat desain produk	4/4	4/4	0	1	Siti Nurusnaeroh
2	Pengukuran badan (peterban)	4/4	4/4	0	1	Nurdin Ahmad
3	Membuat pola	4/5	4/5	1	1	Ajad Nurrahman
4	Merancang kebutuhan bahan	4/5	4/5	1	1	Siti Nurusnaeroh
5	Membuat pola besar	4/5	4/6	1	2	Ajad Nurrahman
6	Menggunting bahan	4/5	4/6	1	2	Nurdin Ahmad
7	Membuat tanda (merader)	4/6	4/6	2	1	Gina Khaerunisa
8	Proses penjahitan produk 1	4/6	4/8	2	3	Restu Dwi P
	Proses penjahitan produk 2	4/6	4/8	2	3	Sri Dewi L
9	Melakukan bordir	4/8	4/10	4	3	Annisa Nur Afifah
10	Melakukan aplikasi brokat	4/10	4/11	6	2	Marrisa Rahmawati
11	Pengecekan dan Pengemasan produk	4/11	4/12	7	2	M Nurman Permana
Pemesanan pelanggan Trisea tgl 4 April 2018						
1	Membuat desain produk	4/5	4/5	1	1	Siti Nurusnaeroh
2	Pengukuran badan (peterban)	4/5	4/5	1	1	Nurdin Ahmad
3	Membuat pola	4/6	4/6	2	1	Ajad Nurrahman
4	Merancang kebutuhan bahan	4/6	4/6	2	1	Siti Nurusnaeroh
5	Membuat pola besar	4/6	4/7	2	2	Ajad Nurrahman
6	Menggunting bahan	4/6	4/7	2	2	Nurdin Ahmad
7	Membuat tanda (merader)	4/7	4/7	3	1	Gina Khaerunisa
8	Proses penjahitan produk 1	4/8	4/10	4	3	Riska M
9	Melakukan bordir	4/10	4/12	6	3	Annisa Nur Afifah
10	Melakukan aplikasi brokat	4/12	4/13	8	2	Marrisa Rahmawati
11	Pengecekan dan Pengemasan produk	4/13	4/14	9	2	Kresna sakti

Based on Table 3.1 production stages 3 and 4 april 2018 production estimates show the detailed data at each stage. At the production stage have data start date, end date data, the data from today, the data duration of employment, employee data process stages of production and percentage completed in stages of production. After that it will generate estimation data available on Gantt chart. Here is a table of the Gantt Chart 3.2:

Table 2. Estimated Production Date Gantt Charts 3 and 4 April 2018



From the Gantt chart above there are 12 stages of production on 2 products ordered customers to the 3rd of April, has been working on for eight days of work, starting from a product design until the end of the process of packaging the product. In addition the 4th of april has 11 production steps in one product with a long process of over 9 days.

2.3Monitoring Raw Materials

Stages monitoring of raw materials is the stage of monitoring raw materials to be processed when the procurement of raw materials as a target to achieve materials that must be purchased, thus minimizing the weaknesses and strengths of raw materials in the warehouse and can facilitate the collection of raw materials stored. Thus it can be easier for the head of the warehouse to determine the use of raw materials that will be used in the months to come.

Table 3. Monitoring Raw Materials Month March 2018

No	Nama Barang	Satuan	Warna	Stok Masuk 5/3/2018	Stok Awal	Stok Keluar	Stok Akhir	Jumlah	Indikator
1	Kain Taffeta	Meter	Merah	13	3	13	3	27	Aman
		Meter	Putih	23	5	22	6		
		Meter	Coklat	19	4	22	1		
		Meter	Kuning	14	2	12	4		
		Meter	Pink	16	8	16	8		
		Meter	Hijau	13	6	14	5		
2	Kain Organdi	Meter	Merah	9	5	13	1	21	Tidak Aman
		Meter	Putih	28	4	28	4		
		Meter	Coklat	25	2	23	4		
		Meter	Kuning	18	1	12	7		
		Meter	Biru	16	9	16	9		
		Meter	Hijau	20	3	22	1		
3	Kain Trikot	Meter	Merah	9	3	12	0	14	Tidak Aman
		Meter	Putih	14	4	17	1		
		Meter	Coklat	19	4	23	0		
		Meter	Kuning	18	9	18	9		
		Meter	Pink	15	6	13	2		
		Meter	Hijau	9	5	12	2		
4	Kain Brokat	Meter	Merah	7	4	10	1	38	Aman
		Meter	Putih	20	2	22	0		
		Meter	Coklat	18	7	21	4		
		Meter	Kuning	20	2	14	8		
		Meter	Pink	13	6	14	5		
		Meter	Hijau	13	6	16	3		
5	Kain Roberto	Meter	Merah	17	7	16	8	29	Aman
		Meter	Putih	22	2	19	5		
		Meter	Coklat	26	3	22	7		
		Meter	Kuning	15	7	21	1		
		Meter	Pink	23	2	24	1		
		Meter	Hijau	13	5	11	7		
6	Kain Organza	Meter	Merah	13	1	10	4	17	Tidak Aman
		Meter	Putih	22	4	24	2		
		Meter	Coklat	17	7	21	3		
		Meter	Kuning	12	2	12	2		
		Meter	Pink	16	4	16	4		
		Meter	Hijau	14	8	20	2		
7	Tila Shining	Meter	Putih	19	4	21	4	9	Aman
		Meter	Hitam	20	5	20	5		
8	Tile Embrowery	Meter	Putih	13	1	15	1	8	Aman
		Meter	Hitam	22	5	20	7		
9	Kancing Shanghai Warna	Gros	Campur	25	5	28	2	2	Aman
10	A P Bordir	Lusin	-	18	4	15	7	7	Aman
11	Aplikasi kerah	Lusin	-	13	4	17	0	0	Aman
12	Cup BH biasa 32	Lusin	Putih	17	5	16	3	7	Aman
		Lusin	Hitam	22	5	23	4		Aman
13	Rit comicol 35	Lusin	-	10	0	7	3	3	Aman
14	P. Pning LP	Lusin	-	12	7	14	5	5	Aman
15	Balon	Roll	-	9	5	9	5	5	Aman
16	3D	Buah	-	13	8	13	8	6	Aman

Data on the use of raw materials is the month of March 2018, due to meet the use of raw materials in

April 2018. In Table 3.4 looks to have indicators of a flaw in the fabric taffeta, organdy, trikot, brocade and cloth respectively roberto is in stock end. At the organza fabric there are raw materials that have excess stock. It is necessary to perform the monitoring process raw materials that will positively impact the shortage of raw materials and excess raw materials.
for material required raw can be seen in Table 3.5

2.4 Analysis of Raw Material Purchasing

Analysis determines the purchase of raw materials such as raw material inventories will be used by calculating the amount of use of raw materials that exist for the use of raw materials according to the number of orders booked.

Among the raw material requirements during the month of April 2018.

Table 4. Raw Material Needs Month April 2018

Jenis Kain	Warna	Bulan	Penggunaan (m)	Stok Sisa
Taffeta	Merah		0	**3**
	Putih		0	6
	Hitam		0	1
	Kuning		9	4
	Pink		0	8
	Hijau		0	5
	Merah		4	3
	Putih		0	4
	Hitam		0	4

After analyzing the purchase of raw materials, and obtained the appropriate amount has been determined. Then the next stage determines the BOM (bill of material).

2.5 BOM

BOM (Bill of materials) will contain the amount of material and their number on the manufacture of one product. In the BOM has a material components, parts or assemblies. Among the BOM of the CV product manufacture. Bienta Gemilang as follows.

Table 5. BOM

No.	Jenis Produk	Nama Bahan Baku	Kebutuhan	Satuan	Stok	Kelebihan Bahan
1.	Gaun Pengantin	Kain Taffeta	2 x 3	meter	27 (semua warna)	50cm (sesuai pemakaian)
		Tile Shining (putih)	2	meter	18	1
		Tile Embrowery (putih)	1	meter	18	-
		Kancin Shanghai warna	7	pcs (disesuaikan)	7	3
		Aplikasi Kerah	1	pcs	7	-
		Cup BH	1	pcs	15	-
		Bordir	2	meter(disesuaikan)	14	1
2.	Kebaya	Kain Trikot	2 x 2	meter	26 (semua warna)	0,7
		Tile Shining (putih)	1	meter	18	20cm (sesuai pemakaian)
		Kancin Shanghai warna	7	pcs (disesuaikan)	7	2
		Cup BH	1	pcs	15	-
		Bordir	2	meter(disesuaikan)	14	60cm (sesuai pemakaian)

After performing stages BOM, then will proceed to the analysis stage of the purchase.

2.6 Purchase Analysis Method Using Economic Order Quantity

Analysis purchases economic order quantity (EOQ) in the procurement of raw materials should be in accordance with the terms that have been determined as the purchase price of raw materials per unit of constant availability of goods in the market and demand for raw materials is relatively stable throughout the year. From these requirements, the type of raw materials, including clothing fabric to use the economic order quantity.

The purpose of the EOQ model is to minimize the total cost of inventory. Important cost is the cost of the booking, the cost of placing the order, and the cost of carrying or holding units of inventory in stock. Here recapitulation ordering raw materials clothing fabrics and production reports using economic order quantity is the formula:

$$EOQ = \sqrt{\frac{2\,SD}{H}}$$

Information :

EOQ = Quantity optimal purchase
S = The booking fee each time a message
D = Use of feedstock per year
H = Cost per uni storage**t**

A. Booking Fees

The booking fee is composed of transportation costs, telephone costs, administrative costs and inspection costs. More details, booking cost data are presented in Table 5.

Table 6. Booking Fee Taffeta Fabric Red, White, Brown, Pink, Yellow, Green 2018

No	Jenis Biaya	Biaya (Rp)
1	Biaya administrasi	5000
2	Biaya pemeriksaan	10000
3	Biaya transportasi	20000
Jumlah		35000

B. Cost of Storage

Storage costs are costs associated with the process material storage raw in the warehouse. Price per meter affects the amount of storage costs, due to the difference in the price of each type of product that will affect the way care and storage. Among consist of the maintenance costs, the cost of the damage, and the cost of capital. Calculation results can be seen in Table 5 below:

Table 7. Red Taffeta Fabric Storage Cost 2018

No	Jenis Biaya	Biaya (Rp)
1	Biaya pemeliharaan	30000
2	Biaya kerusakan	80000
3	Perawatan gudang	500000
Jumlah		610000
Rata-rata per unit		3446

C. Calculation of Purchase with EOQ

Total use of raw materials of cloth, fabric raw material price per meter, the amount of fees each time a message and storage costs per unit on the CV. Bienta Gemilang during the period of the year 2018 can be seen in Table 32.

From Table 32 above optimal purchase quantities can be calculated:

Table 8. Calculation of EOQ Red Taffeta Fabric 2018

No	Jenis Biaya	2018
1	Kuantitas (m) -> D	177
2	Harga (Rp/m)	50000
3	Biaya Total	8850000
4	Biaya pemesanan (Rp/pesanan) -> S	35000
5	Biaya penyimpanan (Rp/unit) -> H	3446

$$EOQ = \sqrt{\frac{(2)(35000)(177)}{3446}}$$

$$= \frac{12390000}{3446}$$

$$= 3595.131$$

$$= 59.95941 m$$

Total purchases of raw materials that optimally every time a message of 59,96m with a frequency of purchase:

$$= \frac{177}{59.9594127}$$

$$= 2.95$$

Rounded to three, the number of purchases of raw materials optimum every time a message in 2018 amounted to 59.96 meters with the necessary raw purchase frequency CV.Bienta Gemilang ie: 3

From the calculation of the amount of booking 6 kinds of cloth CV. Bienta Gemilang in 2018 over the year is as much as 3 times the message in any kind of fabric, then after doing the calculations and reservations will be the total cost of EOQ data obtained as follows:

Table 9. Total Cost EOQ 2018

No	Nama Bahan Baku	Warna	Total biaya	Total Bahan Baku
1	Kain Taffeta	Merah	6.850.000	59,95 m
		Putih	10.750.000	97,9 m
		Coklat	10.700.000	72,49 m
		Kuning	6.750.000	45,73 m
		Pink	7.850.000	53,2 m
		Hijau	7.850.000	45,71 m
2	Kain Organdi	Merah	2.898.000	59,96 m
		Putih	4.807.000	94,51 m
		Coklat	5.129.000	75,54 m
		Kuning	2.622.000	38,61 m
		Biru	3.979.000	58,60 m
		Hijau	3.082.000	45,40 m
3	Kain Trikot	Merah	2.430.000	59,95 m
		Putih	3.834.000	94,51 m
		Coklat	4.050.000	76,21 m
		Kuning	2.358.000	44,38 m
		Pink	3.168.000	59,62 m
		Hijau	2.016.000	37,94 m
4	Kain Brokat	Merah	2.006.000	59,95 m
		Putih	3.638.000	94,51 m
		Coklat	3.485.000	69,44 m
		Kuning	2.669.000	53,19 m
		Pink	2.771.000	55,21 m
		Hijau	1.819.000	36,24 m
5	Kain Roberto	Merah	3.836.000	59,95 m
		Putih	5.992.000	94,51 m
		Coklat	6.160.000	74,52 m
		Kuning	3.892.000	47,08 m
		Pink	4.592.000	55,55 m
		Hijau	2.996.000	36,25 m
6	Kain Organza	Merah	2.783.000	59,95 m
		Putih	4.945.000	94,51 m
		Coklat	4.830.000	71,13 m
		Kuning	2.668.000	39,30 m
		Pink	3.588.000	52,84 m
		Hijau	2.967.000	43,70 m

Based on the description of the results of the total cost of the above in mind that the company can generate significant cost in brackets within one year. So the list of total cost of each type of material based on color will produce how many ingredients are purchased. The results of this EOQ calculation will become a benchmark in the purchase of raw material products for the coming year based on the number of orders in the message. Then the next step will be to calculate how much safety stock to be done.

D. Determination Inventory Safety (Safety Stock)

Safety stock (Safety Stock) are useful to protect the company from the risk of running out of raw materials (Stock Out) and delays in the receipt of raw

materials are ordered. With a look and consider the deviations - deviation occurs between the estimated user

In general, the tolerance limit used is 5% above the forecast and 5% below estimates with a value of 1.65 for standard deviation calculation can be seen in Table 32 below:

1) Safety Stock 3 Months

As for how to determine the amount of safety stock is as follows:

$$\sigma = \sqrt{\frac{345}{12}}$$

$$= \sqrt{28{,}75}$$

$$= 5{,}361$$

$$= 6\,m$$

Safety Stock = Zσ Safety stock = 1.65 x 6 meter = 9.9 m supply security must be present on the upcoming 3 months is 9,9 m.

E. Booking Back (Reorder Point)

Then the next stage determine when reordering or Reorder Point. Specifies the number of ROP for raw materials taffeta cloth as follows:

ROP = (daily demand x LT) + SS (safety stock)

= (345 x 1) + 9.9 m

= 354, 9 m

Reorder point or reordering can be done in the amount of 354.9 m taffeta fabric raw materials.

F. Determining Maximum Inventory (MI)

On the raw material fabric Maximum Inventory taffeta obtained as follows:

MI = Q + SS

= 97, 22 + 9.9

= 107.12

Maximum inventory can be seen in the amount of 107.12 m taffeta fabric raw materials.

G. Determine the average inventory level (I)

On the raw material obtained taffeta fabric inventory levels as follows:

$I = SS + (Q \times \frac{1}{2})$

$= 9.9 + (97.22 \times \frac{1}{2})$

= 58.61 m

It is known to the average level of raw material inventory amounted to 58.61 m taffeta fabric.

H. Determining Total Inventory Cost (TIC)

After knowing the average inventory, then the next stage can calculate the Total Inventory Cost (TIC) of the raw material taffeta cloth as follows:

$TIC = (D \times P) + () + (I \times H)\frac{D \times S}{Q}$

$= (287 \times 50000) + () + (58.61 \times 22)\frac{287 \times 35000}{97{,}22}$

= 14350000 + 103322.36 + 1289.42

= Rp 14,454,611.78

Here is the result of the calculation of Total Inventory Cost for raw materials taffeta fabric which can be seen in Table 3:39 paa

Table 10. TIC Taffeta Fabric

Raw Materials Taffeta Fabric
EOQ
USD 14,454,611.78

Based on the results of this calculation it can be stated that in accordance EOQ method, at least with what is expected. This can be seen in the cost of raw materials message taffeta fabric with ordering frequency for 3 times the total cost per perperiode USD 14,454,611.78. By using EOQ method can be obtained the most economic order quantity of raw materials amounting to 97.22 m taffeta fabrics. With the reorder point and the optimal safety stock is known, it can anticipate void if there is a delay of raw material feedstock.

2.7 Analysis of Supplier

The next stages of supplier selection, supplier selection is done when the list of suppliers selected by affordable prices according to the production needs of the production line. The following Table 4 lists the suppliers.

Table 11. Prices Suppliers Fabrics

No.	Bahan Baku	Jumlah Kebutuhan	Harga (m)	Pemilihan Suplier di Bulan April 2018				Total Biaya
				Lilaram Tekstile	You & Me	Pesona Tekstile	Vogue Tekstil	
1.	Kain Taffeta	9 m	± Rp.50.000,00	9 m	5 m	4m	7 m	450.000
2.	Kain Organdi	10 m	± Rp.23.000,00	5 m	7 m	0	15 m	230.000
3.	Kain Tricot	30 m	± Rp.18.000,00	4 m	0	22 m	35 m	540.000
4.	Kain Brokat	1 m	± Rp.17.000,00	0	0	0	4 m	17.000
5.	Kain Roberto	2 m	± Rp.28.000,00	2	0	0	5 m	56.000
6.	Kain Organza	0	± Rp.23.000,00	0	1 m	0	5 m	-

Information :

a. gray = fabric of suppliers selected

From the selection of stocks of materials provided to the supplier, to purchase fabric taffeta companies choose suppliers lilaram textiles, for fabrics organdy, linen trikot, brocade and cloth roberto companies choose suppliers vogue textiles as well as to the fabric organza do not make a purchase, because no booking product requiring organza fabric.

After the results of supplier selection, found the total cost of each respective fabric according to the unit price and the amount of fabric.

Table 12. Results of Purchase Supplier of Cain

No.	Bahan Baku	Harga (m)	Lilaram Tekstile	Vogue Tekstil	Total Biaya
1.	Kain Taffeta	± Rp.50.000,00	9 m	-	450.000
2.	Kain Organdi	± Rp.23.000,00	-	15 m	230.000
3.	Kain Tricot	± Rp.18.000,00	-	35 m	540.000
4.	Kain Brokat	± Rp.17.000,00	-	4 m	17.000
5.	Kain Roberto	± Rp.28.000,00	-	5 m	56.000
Jumlah					1.293.000

Based on the results of the purchase of the supplier, the total cost for all types of fabric for 1,293,000.00 rupiah.

2.8 Analysis of Delivery

This stage is the stage in the delivery process, delivery scheduling in shipping products to the last expedition ended dipelanggan. Estimated Delivery process is done so that the product is up to the customer at the right time and place and know the delivery status whether accepted or are in the process of delivery.

Table 13. Estimated Delivery April 2018

April 2018						
No. Pesanan	Tgl.Pemesanan	Pelanggan	Jenis Produk	Tgl Kirim	Tujuan	Qty
0162	3 April 2017	Anna Salon	Kebaya	7 April 2018	Jl.Cipto Mangungkusumo	2 pcs
0163	4 April 2017	Trisea	Kebaya	10 April 2018	Jl. Dr.Wahidin	1 pcs
0164	7 April 2017	Jay Agency	Kebaya	9 April 2018	Kuningan	5 pcs
0165	10 April 2017	Nani Salon	Kebaya Gamis	13 April 2018	Pilang Perdana	2 pcs
0166	10 April 2017	Laura Salon	Kebaya	15 April 2018	Jl.Dr.Cipto Mangungkusumo No.117	2 pcs
0167	15 April 2017	Eka	Kebaya	19 April 2018	Jl.Dr.Cipto Mangungkusumo No.61, Pekiringan	1 pcs
0168	19 April 2017	Moz5 Salon Muslimah Cirebon	Kebaya	23 April 2018	Jl.Pangeran Drajat No.101, Drajat	1 pcs
0169	25 April 2017	Anna Salon	Kebaya	1 Mei 2018	Tulungagung	3 pcs
0170	26 April 2017	Jay Agency	Gaun Pengantin	1 Mei 2018	Jl.Dr.Cipto Mangungkusumo No.61, Pekiringan	3 pcs
0171	26 April 2017	Laura Salon	Kebaya Gamis	29 April 2018	Jl.Dr.Cipto Mangungkusumo No.117	3 pcs

Information :

a. Estimated delivery starts from the start date sent.

b. For cardboard packaging is done by size 26x15x9 dimension.

c. Continued send from the delivery date for later in submit to the expedition.

2.9 Analysis of DATs Base

From the above analysis, there is data to be used in the manufacturing software supply chain management information system. The data obtained will be used to design a database along with the attributes of the entities. In designing a database, the data model that will use the Entity Relationship Diagram.

The following results of the analysis carried out are as follows:

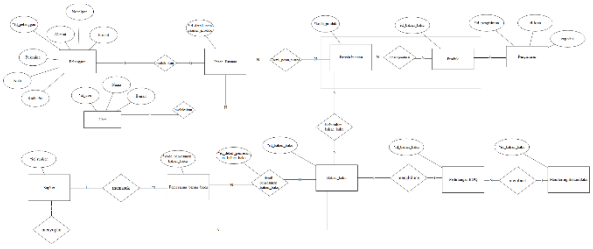


Figure 1. Entity Relationship Diagram

2:10 Entity Relationship Diagram Data Dictionary

ERD data dictionary function to describe the character of an existing entity in the ERD. Here are some of the attributes in the table.

Table 14. Data Dictionary Entity Relationship Diagram

No.	Entitas	Atribut
1.	Pelanggan	{id_pelanggan, nama_pelanggan, alamat, rekening, No_Hp, username, password, status}
2.	Supplier	{id_supplier, nama_supplier, alamat_supplier, no_bahan, tgl_minta, jml_bahan, username, password, status}
3.	User	{id_karyawan, jabatan, No_hp,tgl_bekerja, alamat, email, username, password, status}
4.	Pemesanan_bahan _baku	{id_bahan_baku, nama_bahan_baku, no_bahan_baku,Jenis_bahan, stok, satuan, hasil_perhitungan, status}
5.	Perhitungan_EOQ	{id_bahan_baku, stok_bahan, Pemesanan_bahan, status}
6.	Produk	(No_produk, Nama_produk, stok_produk, Harga_produk, gambar}
7.	Detail_pemesanan	{jumlah, jenis, ukuran}
8.	Pesan_busana	{id_detail_pemesanan_produk}
9.	Desain_busana	{kode_produk, nama_produk}
10.	Monitoring_bahan_baku	{id_bahan_baku}
11.	Pengiriman	{id_pengiriman, id_kota, id_expedisi}

3. CLOSING

3.1 Conclusion

After doing some analysis, design, and testing methods and beta black box, it can be concluded as follows:

1. These information systems are built to facilitate the head of production in providing any stage of production, the head production information system has the disadvantage that they can not display the Gantt chart diagram.

2. The information system built to facilitate head of the warehouse in the purchase of raw materials and production time of existing customer product orders. And can assist in providing information of the production stages of production for each order.

3. The information system that was built to facilitate the delivery part in scheduling deliveries to the expedition

3.2 advice

Suggestions for the development of supply chain management information systems, there are some suggestions that can be done, among others:

1. At the head of the system of production necessary to the development of the production phase diagram displaying Gantt chart, Gantt chart diagram because this time can only display a single stage of the production and the use of the model Gantt charts are easy to understand, to be used solely by the head of production.

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