INFORMATION SYSTEM DEVELOPMENT SUPPLY CHAIN MANAGEMENT (SCM) IN SEVTI TRANSFOMER (TRAFO)

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ABSTRACT

Sevti Transfomer (Trafo) is one of the companies engaged in the industry for a variety of special work items made of email Wire, koker, kern. Main merchandise / service consisting of electrical equipment that is transformer type kva, ampere, phasa, and other products terafo products. Sevti Transfomer uses the make-to-order strategy that is the process of purchasing raw materials from the supplier and the production process is done if there is order from the consumer. The company will only perform the production process if there has been order from the consumer. The company has difficulty when the customer has made the order and production schedule has to be made but the delivery of raw materials takes a long time which is a day or two days. The Length of waiting time resulted in the inhibition of the production process. The company also does not yet have a proper count to determine the date of completion at the time of the customer's order.

Supply Chain strategy used is pull supply chain, because the ordering of raw materials and production will be done after the request of the consumer and based on consumer demand or can be called make to order. The method used is Just In Time due to facilitate the company to determine the amount of raw materials that must be provided for the production process can run smoothly and when production process can maximize productivity for raw materials purchased from suppliers can be used all and no residual at the time of completion of production .

Based on the test results can be concluded that this system has helped to manage the list of product orders from consumers, assist in estimating the number of ordering of raw materials to suppliers and assist in determining the delivery schedule and the type of delivery used.

Keywords: *supply chain management, pull supply chain, make-to-order, Just In Time.*

1. INTRODUCTION

Sevti Transfomer is a company engaged in the service industry transformer for various jobs connected with electric current. Goods / services trade consists mainly of the terafo range of capacity KVA, Amper and phase motors ranging from sizes (1, 2, 3, 4 to a maximum of 35 KVA) or maximum weight 300 Kg. This company has been serving customers individual and corporated. Sevti Transfomer using strategy make to order the purchasing process of materials from suppliers and the production process is carried out if there are any reservations from customers. Activities in down stream received the order and the confirmation of the delivery from the customers, while activities in the upstream, name procurement of raw material to the supplier, the reception of raw materials from suppliers, management ofraw materials into products. Pengirirman for the finished product to the customer there are three ways customers take it directly to the company, the company doing the delivery to the customer or the company performs shipments using shipping services.

Based on observations and interview conducted at Sevti Transfomer to Mr. Ozat as the head of the procurement of goods/General, stating that the Sevti Transfomer does not keep a stock of raw materials in warehouses, due to the capital for the purchase of raw materials is quite large because Sevti Transfomer has limited capital to purchase raw materials. The problem arises when the customer booking and production schedule must be specified and the process of procurement of raw materials from the company to the supplier requires wait. In the procurement of raw materials from suppliers to the raw materials received by the company require a waiting time of about one to two days. The length of waiting time resulted in delay the production process so that the delivery of the product to customers on time and did not result in the production process. The delay in production processes will affect the distribution of the product. Naturally it will cause losses andwaste of time, and resulted in the withdrawal of production schedule.

Based on interviews done to Mr.Tete as part of delivery, observation Activities were in hilir

product receives a request from a customer and product delivery to the customer. Customers can order products by phone or come directly to the Office at work. In submitting a product, the company has two car units pick up in his delivery with maximum haulage capacity three quintals. Product delivery to the customer has three types of shipping with delivery service, taken by customer and delivered by the company. Sending to customers also still experiencing difficulties due to the time of making the products in different messages pending on the capacity of the product, Because the first order could have been longer than the second level of complexity appropriate customer and what products are ordered.

Based on problems that have been there at the moment, it is in a required construction of the Transfomer Sevti information systems that can regulate the managementof procurement of raw materials production and management monitoring the delivery of the finished product then need an information system construction of information system in Supply Chain Management (SCM) in Sevti Transfomer.

1.1. Formulation of the problem

Based on the background issues that are raised, then the problems occurred in the Sevti Transfomer (Trafo) is how to build information systems by using Supply Chain Management approach in Sevti Transfomer (Trafo).

1.2. Purpose and objectives

As for the intent of this research is to build an information system by using Supply Chain Management (SCM) in Sevti Transfomer. As for the goal that will be achieved in this research are:

1. *Facilitate the procurement section in procurement of raw materials that will be needed to the supplier so that the production process of the product is not hampered and running smoothly.*
2. *Facilitate the delivery of the delivery process by scheduling the delivery of the product to every customer who has made the order to be on time.*

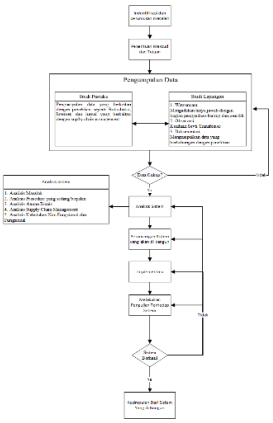
1.3 Scope of problem

The problem limits in the construction of this information system to be more focused and achieve the objectives that have been determined are as follows:

1. *The strategy used is pull supply chain (make to order), because Sevti Transfomer will produce the product if there is order from customer.*
2. *Supply Chain Management information system is website-based.*
3. *Managed data include:*
   a. *Data order*
   b. *Data Supplier*
   c. *Data material*
   d. *Data buy material*
   e. *Data remaining material*
   f. *Data Transaction*
   g. *Data delivery produc*
   h. *Data transportasi*
4. *The system will manage raw material purchases from supplier data and raw material order data*
5. *Type of processed product that is 1 KVA Trafo due to the number of product demand more.*
6. *Raw materials used are kawat Email, Koker, kern, lake, cable, resin, catalyst, and paint, while raw materials that can be added such as box or casing*
7. *Business processes contained in this system are:*
   A. Order acceptance
   B. Procurement of raw materials
   C. Acceptance of orders from customers
   D. Acceptance of raw materials from suppliers
   E. Delivery of product
8. *The software analysis model used is structured analysis modeling and tools / tools used are Business Process Modeling Notation (BPMN), Entity Relationship Diagram (ERD) and Data Flow Diagram (DFD).*
9. *DBMS (Database Management System) used is Mysql.*

1.4 Research methods

Research methodology is a process Stages used to solve a logical problem, requires data to support the implementation of a study. The research methodology used in this research using descriptive analysis method, is a method that describes facts and information in the current situation or event systematically, factually and accurately.
The steps undertaken in this study into a groove as can be seen in Figure 1.1



Here is a description of the research stages in Figure 1 above:

1. *Indetification and Problem Formulati on This stage is an early stage in the research process, where this stage is done by seeking input to the problems in the observation through. Research performs the formulation of problems related to the Information System to be built. Researchers formulate*

the problem based on the parts that exist in the company.Merumuskan Maksud dan Tujuan

2. *This stage is done to setya intent and some goals to focus the problem with the final result. The purpose and purpose of the study based on the results of the formulation of the problem. So this goal can be useful for Sevti Transfomer (transformer).*
3. *Data collection*
   Data collection is done by doing direct research into the field to get the data needed for research. The data collection techniques used in this study are as follows:
   a. *interviwe*
      The researcher interviewed the parties involved in the research. The interview was conducted to Mrs. Elis as Finance Department handling the ordering from customer, Mr. Ozat as part of raw material procurement, and Mr. Tete as the delivery department. The researcher conducted a discussion with the owner and Employees who are in Sevti Transfomer to know the problems that exist.
   b. *Observation*
      Collecting data by conducting research and direct observation to the field (Observation) located at Sevti Transfomer Jl.Cikutra Gg Sejepondok 2 RW 10 / RT03 No 284 / 138A Bandung.
   c. *data collection*
      Collecting data and reviewing sources related to the research.Melakukan studi literatur
4. *to support research data relating to the problem under study. Sources used for literature study materials include:*
   a. *Jurnal Ilmiah*
   b. *Buku teks*
   c. *internet*
5. *Designing the system to be built*
   The next stage information system is to design information systems that will be built from the design of software programming, sematik network, software architecture, interface representation (user interface) .
6. *Implementasi*
   This implementation stage is the stage that is done after the design process has been completed. The process that occurs at this stage is to apply the design into the form of source code. Systems created using PHP language which is a scripting language that can be embedded or inserted into HTML, and for the use of database data on the system is using MySQL. Software tools used in the system development process is Macromedia Dreamweaver 8.
7. *Development of information systems with supply chain management approach*
   Information Systems to be built web-based. At this stage the researcher translates the results of analysis and design that have been made into the PHP programming language.
8. *Conducting testing system that has been built*
   a. *Testing Alpha*
      Researchers in doing alpha testing is done by using black box testing method. Black box testing focuses on the functional requirements of the software to be presented in the table.
   b. *testing Beta*
      Researchers in performing beta testing, conducted direct testing at the research site by using interview techniques. This test is performed in Sevti Transfomer.Kesimpulan dari sistem yang dibangun
9. *The last stage of research conducted is to draw conclusions on the system that has been built based on the initial purpose of research. Research is deemed successful if the conclusions are formulated accordingly and meet the initial objectives of the study.*

2. *RESEARCH CONTENTS*

2.1.1. Theoretical basis

Theoretical basis aims to provide an overview of the sources and studies of theories related to development. The theoretical basis to be discussed is the theories of information systems, Supply Chain, Supply Chain Management, and distribution, entity relationship diagrams, Data Flow diagrams, JIT and System Testing

2.1.2. *Sistem Informasi*

Defining the system there are two groups of systems approach, the system is more emphasis on procedures and elements. The procedure is defined as a precise sequence of the instruction steps that explain what to do, who does it, when it is done and how to do it. Based on the elemental approach is the system as interrelated parts that operate together to achieve multiple goals or purposes [1]

2.1.3. *Supply Chain Management*

a. *Supply Chain Management is an integrative method or approach to managing an integrated flow of products, information, and money involving parties from upstream to downstream consisting of suppliers, factories, distribution networks and logistics services [2]*
b. *Supply Chain is a network of companies that work together to create and deliver a product into the hands of the end user. These companies usually include suppliers, manufacturers, distributors, stores or retailers while Supply Chain Management is a method, tool or management approach that is not only oriented to the company's internal affairs, but also*

external affairs involving relationships with partner companies [2]

Based on the above opinion it can be concluded that important principles in SCM is the transparency of information and collaboration between internal functions of the company and with parties in the company along the supply chain

1. *First is the flow barag that flows from upstream (downstream) to downstream (downstream).*
2. *The second is the flow of money and the like that flows from downstream to upstream*
3. *Third is the flow of information that can occur from upstream to downstream or vice versa.*

2.1.4. Just In time (JIT)

Just In Time is a philosophy of solving problems strictly and continuously to eliminate unexpected wastes and deviations. JIT itself is a production philosophy developed by Toyota Motor, which managed to make the Japanese automotive and electronics industry into an industry that is able to work efficiently with good output quality. Japan's industry is able to shift by taking the market share of automotive and electronics that has been dominated by European countries and the United States. According to Yamit, "Just In Time" is an attempt to eliminate waste in all areas of production, so as to produce and deliver the final product on time for sale. [4] Meanwhile, according to Heizer and Render, "Just In Time" is a sustainable and compelling problem-solving philosophy that supports lean products. Lean production (lean production) supplies customers exactly as customers want when customers want it, without wastage, through continuous improvement.

2.1.5. The purpose of implementing Just In time

JIT system is a system used to achieve perfection by eliminating all waste by making continuous improvements to get the best results.
The main objectives of JIT implementation in general are as follows:Zero Defects (meniadakan produk cacat)

1. Zero Inventories (meniadakan persediaan dalam pabrik)
2. Zero Setup Time (meniadakan waktu persiapan)
3. Zero Handling (meniadakan penanganan bahan)
4. Zero Queues (meniadakan antrian)
5. Zero Breakdowns (meniadakan kerusakan mesin)
6. Zero Lead Time (meniadakan waktu tunggu)
7. Zero Lot Excesses (meniadakan kelebihan lot)
8. Zero Schedule Interuptions (meniadakan gangguan pada jadwal produksi)

2.1.6. Differences Methods Just In Time and Traditional

What is the difference between the manufacturing of Just In Time with the traditional inventory according to Supriyono is as follows:[5]

Faktor Pembeda	Just In Time	Tradisional
Karakteristik	Pull-through system	Puss-through system
Kuantitas persediaan	Sedikit	Banyak
Struktur manufaktur	Sel manufatur	Struktur Departemen
Kualifikasi tenaga kerja	Multidisiplin	Spesialis
Kebijakan kualitas	Pengendalian mutu	Toleransi produk cacat
Fasilitas jasa	Tersebar	terpusat

Table 1. Differences of Just In Time and Traditional methods

2.1.7. The concept of Just In Time

In the concept of Just In Time, Simamora states there are four fundamental aspects in the concept of Just In Time, namely: [6]

1. *Eliminate any activities that do not add value to all products or services. In this case includes all activities or resources subject to reduction or omission.*
2. *A high commitment to quality doing things right from the start is essential when there is no time to rework. Companies need to have a commitment to achieve and maintain a high level of quality in all aspects of corporate activities*
3. *Emphasis on simplification and increased visibility of value-added activities, it helps to identify activities that do not add value.*

2.1.8. Definisi Sistem Pembelian Just in Time (Just In Time Purchasing)

The concept of purchasing JIT (Just In Time Purchasing) which requires suppliers to ship parts and raw materials just in time for production. The Just In Time (JIT) purchasing system is a very critical part of the entire Just In Time (JIT) system because it involves outsiders, suppliers. Just In Time (JIT) purchases can reduce the time and costs associated with purchasing activities in the following ways: [6]

2.1.9. Penentuan Kebutuhan Bahan Baku

Determination of raw material need to determine the amount of raw materials that will be used for production process in accordance with the number of product orders from customers.

The determination of the need for each feedstock for all products in Sevti Transfomer can be calculated by the formula in the equation (2.1).

- *Amount requitment material=*

$$= {}_{N}Amount \; x \; AmountOrder \quad (2.1)$$

Information:
$_N$Amount = The amount of need for each raw material required in units
Amount = Number of orders to make.

2.1.10. Determination of Product Delivery Schedule

Determination of product delivery schedule is used to calculate when the product can be sent by the company to the customer. The calculation formula can be seen in equation (2.3) to equation (2.5)

$$\frac{\text{Amount product}}{\text{jam}} = \text{jumlah produksi}_{\text{perjam}} \text{ x banyak mesin} \quad (2.3)$$

$$\frac{\text{jumlah produksi}}{\text{Hari}} = \text{jumlah produksi / jam X (T/jumlah produksi}_{\text{ per jam}}) \quad (2.4)$$

$$\text{Tanggal selesai} = T_{p.Produk} + \text{Jumlah Produksi/hari} + L \quad (2.5)$$

Tanggal kirim = Tanggal selesai + 1

Keterangan :

T_{kirim} = tanggal pengiriman produk
$T_{p.produk}$ = tanggal pemesanan produk
T = lama produksi dalam sehari (8 jam)
L =Waktu pengiriman bahan baku dari supplier (Life time)

2.1.11. Model Supply Chain Management In Septi Transformer (Trafo)

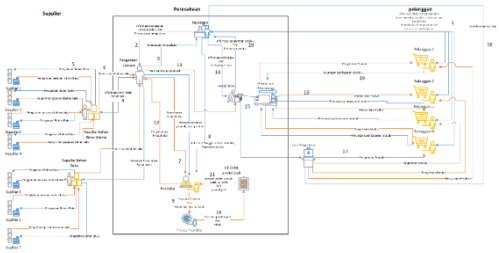


Figure 2.Model Supply Chain Management in Septi Transformer (Transformer)

Description of Supply Chain perpetrators shown in Figure 2 Model of Supply Chain Management in Sevti Transfomer is as follows:
Sevti Transfomer has 2 streams of information, the first of which is the flow of information in the form of ordering products from customers to Sevti Transfomer companies and the flow of product delivery information to customers who have ordered products made via telephone or face-to-face to the Sevti Transfomer office. Next is the flow of information that occurs is the information procurement of raw materials from Sevti Transfomer to suppliers and raw material information received from Supplier made via telephone and face to face / andtang directly to the supplier.
Sevti Transfomer has a raw material supplier for its production activities.

2.2. The stage of supply chain management in sevti transfomer

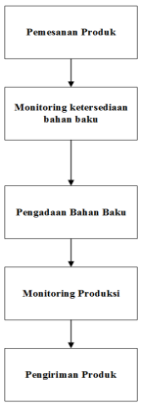


Figure 3.Stitch of Supply Chain Management in Septi Transformer (Transformer)

Sevti Transfomer uses the make-to-order strategy that is the production process and the process of purchasing some of the raw materials is done if there is an order from the customer. In the Supply Chain Management Strategy Information System (SCM) in Sevti Transfomer to be built, the following stages are implemented :

2.3. Analysis of demand

There are product demand from customers in July to August 2016 that is Terafo 1KVA product. Demand data is used as a reference for the production process and raw material procurement can be seen in Table 4

No	Periodes	Requitment
1	Juli 2016	0
2	Agustus 2016	46
3	September	45
4	Oktober	0
5	November	50
6	Desember	55

Tabel 4.Rekapitulasi reques produk Trafo 1KVA

Example Calculation of reservations in August
Known in table 5 the demand for transformer products of 46 units with different time as an example will take order from PT.elkanusa

Nama Pelanggan	Tanggal Pesan	Nama produk	Jumlah	Alamat
PT.Elkanusa	23 Agustus 2016	Trafo 1KVA	40	Jl.Paseban RayaNo.53A RT02/RW02, Paseban, Senen Kota jakarta
Pak Deni	26 Agustus 2016	Trafo 1KVA	6	Jl.Sekepanjang 3 no 22 bandung

Tabel 5. product demand in August

2.4. Calculation of the amount of raw materials

Based on the first booking data of PT.Elkanusa then the company will produce the first ordering order in Table 3.5 dive two different customers who order 1KVA Trafo. By looking at the need for raw materials based on bill of materials (BOM), the raw materials used to produce 1KVA transformers. Using equation (2.1), here is the calculation of raw material requirement to produce 1KVA transformer for orderPT.Elkanusa

material	Qty BOM	Qty order	Requritment material
	A	B	A X B
Koker	1	40 unit	40 unit
Kawat Email	7,2 Kg		288kg
kern	1,5 Kg		60 kg
Baud	6 unit		1 dus
Kabel	1		40M
Cat	5ml		4kaleng
Catalis	1/3kg		1kg
Resin	1/3kg		1kg
Terminal	1		40
Kertas minyak (Isolator)	25 cm		1000 cm

Tabel 6. Need of raw materials of 1KVA Trafo

Then the next step is to check availability in the previous production of raw materials warehouse. Based on the existing business rules in Sevti Transfomer (Trafo), not all have the rest of the raw materials. A list of the remaining raw materials in the warehouse is described in Table 3.7.

No	Name material	Qty	PCS
1	Koker	50	Unit
2	Kawat Email	20	Kg
3	kern	2	kg
4	Baud	5	Dus
5	Kabel	6	Meter
6	Cat	2	kaleng
7	Catalis	2	Pelastik
8	Resin	1	Kaleng

Tabel 7. the remaining raw materials for the 1KVA Trafo

based on the calculation of raw material requirement for the order of 1KVA Transformer product, then Sevti Transfomer need raw material for production can be seen in Table 6 in Just In Time system, company need to order raw material to supplier based on Table 6 However, Which defects production due to errors of the manufacturing process or at the time of product assembly. By using the system of Just In Time the company needs to improve the source of the problem either in the quality of labor, especially the production or even from the state of the machine. Workforce in Just In Time is trained to be double-skilled, so that experts in production. In the Just In Time system too, the problem will fail the product then overcome it by overestimating the ordering of raw materials, it is advisable not to do it anymore because by overpaying the ordering of raw materials, it will incur larger inventory or ordering costs.

2.5. Control system

Control System aims to determine the quantity of inventory in the warehouse. Inventory quantity is one of the influence of Just In Time system for the company that is reducing the quantity of inventory significantly. Although Sevti Transfomer uses a pull supply chain system, a minimal amount of inventory can be retained by the company. So the quantity of supplies in Just In Time persists but in minimal quantities or in very small quantities. If the JIT system is running well, then the minimum inventory can be up to 0 or no more inventory in the warehouse that causes no need to spend on storage costs. The company's policy in ordering raw materials is to add 5% of the total order. It can be used as a minimum inventory for raw material inventory. If the company has made improvements such as explanation in the previous stage so that the possibility of no more incidents of product defects, then the inventory of raw materials in the warehouse can be reduced back to a minimum so that the cost of inventory can be smaller. In the built system, the system will recommend whether the company needs to add 5% of raw

materials when ordering or unnecessary (following JIT system). Based on the case of product ordering in Table 5, the system may recommend for ordering of 5% more. This is because at this time, the company has not implemented the JIT system and also the status of the warehouse is empty. Therefore, the excess of raw materials will be used as the minimum inventory limit as per company policy. Using equation (2.2), the following is the calculation for the raw material ordering case by adding 5% of the total raw material requirement.

material	*Qty*	*Qty order*	*Requitment material*	*adidtion 5% to material*
	A	B	A X B	(AXB)X 5%
Koker	1	40	40 unit	42unit
Kawat Email	7,2kg		288kg	303kg
kern	1,5 kg		60 kg	63 kg
Baud	1 dus = 300 buah		1 dus	1 dus
Kabel	1M		40M	45M
Cat	5ml		4kaleng	4 kaleng
Catalis	1/3		1kg	1,5 kg
Resin	1/3		1kg	1,5 kg
Terminal	1		40	42 unit
Isolator (kertas miyak)	25 cm		1000 cm	1 roll

Tabel 8. Procurement of raw materials for 1KVA Trafo

2.6. Analysis of Production Monitoring

Production monitoring analysis will be applied to the production process as production targets that must be completed in an order product, so that the order is finished on time, according to the predicted level of difficulty of workmanship and can facilitate data collection of any finished products or semi-finished products Which is stored in the Warehouse with the name of the buyer.

Thus it can facilitate the head of production to determine the product that is ready to be sent to the consumer according to the old level of production and the level of product kesuliatan in the message by consumers.

2.7. Determination of Product Delivery

On the date of delivery will be applied to the ordering process as the determination of the date of delivery based on the date of payment already made customer. In the previous stages have been calculated for the length of production. Therefore, the calculation for the determination of delivery date can be directly used equation formula (2.3). Here's an example of calculating delivery date based on product order from PT.Elkanusa.

Tp = Order + (long ordering of raw materials + old production)

= 23 agustus 2016 + (2 day + 4 day)
= 23 agustus 2016 + 6 day
= 29 agustus 2016

Example of calculation of production duration based on product order from PT.Elkanusa

$$\frac{\text{jumlah pemesanan produk}}{Jumlah\ produksi/hari} \quad (2.4)$$

Old production = $\frac{40}{11}$ = 3,63≈ 4 hari

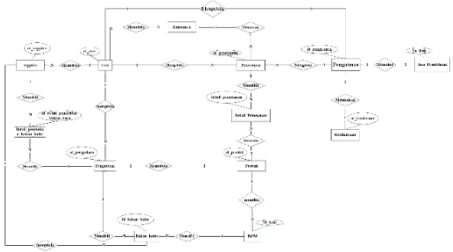
so for ordering 40 units of 1KVA transformer for PT.Elkanusa takes 6 working days at the time of ordering of raw material until finished product.

2.8. Sending Analysis

In the supply chain there are product delivery activities. Coverage in the delivery activities include monitoring of ready-to-ship products, monitoring delivery status, shipping scheduling and vehicles to be used in shipping products to customers. Monitoring of delivery is done so that the product reaches the end user at the right time and place, monitoring the delivery status is done to know the delivery status whether the product has reached the customer's place or still in the shipping process. Scheduling activities on delivery are made to customers on an agreed schedule, scheduling can be determined by looking at which product order has been completed and is ready to be shipped, then the company determines the vehicle used to deliver the product tailored to the vehicle on when shipping.

2.9. Analysis basis data

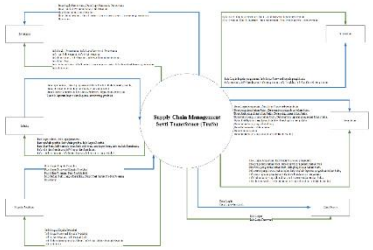
Database analysis on the information system to be built using ERD. ERD is a data model that uses several notations to describe data in the entity context and the relationships described by the data. The diagram is illustrated in Figure 4



Gambar 4.Diagram ERD

2.10. Diagram Konteks

Context diagram is a model to explain globally how data is used and transformed to process or describe the flow of data into and out sistem. Diagram konteks pada sistem ini dapat dilihat pada Gambar 5



Gambar 5 Diagram Konteks

2.11. Data Flow Diagram (DFD)

Data flow diagram shows how the data flow and describe the processes that occur in the system until the process more detail. Processes that occur in the system until the process is more detailed. In the context diagram of information systems such as Figure 5 can be decomposed into several DFD. DFD will be explained starting from Level 1 DFD

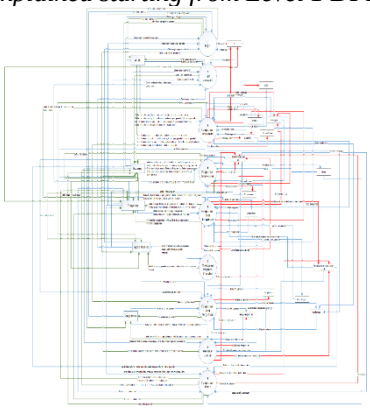


Figure 6.DFD Level 1

2.12. **Designing the login page interface**

The design of the login interface is used by the admin, finance, production head, procurement, delivery at the time will enter the system, user interface login design can be seen in Figure 7.

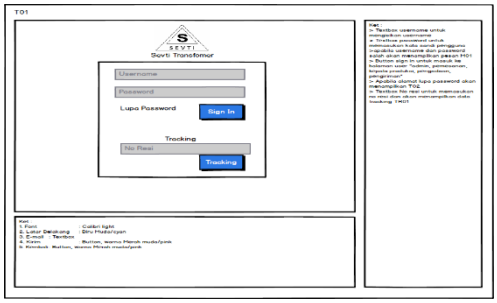
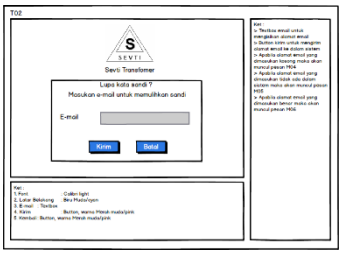
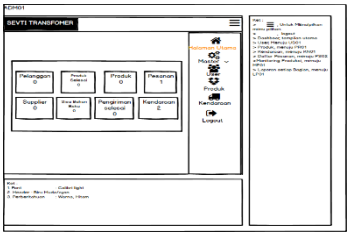


Figure 7.Perancangan login interface



Gambar8.erancangan antarmuka lupa password



Gambar 9. Perancangan antarmuka pemesanan

2.13. **Implementasi Antarmuka Halaman Login**

The design of the login interface is used by the admin, finance, production head, procurement, delivery at the time of going into the system, designing user login interface can be seen in Figure10.

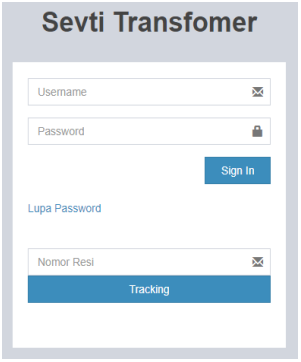


Figure 10.implememtasi halaman login

2.14. Inplementasi antarmuka lupa password

Implementation forgot password interface describes if it can not enter into the system due to forgotten password then it can go directly to the forgot password design that can be seen in Figure 11.

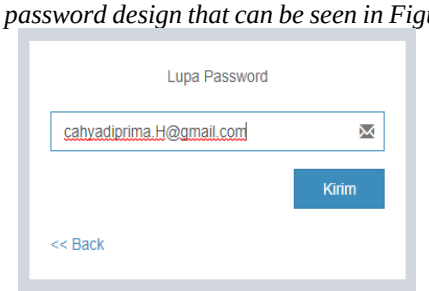


Figure 11. implememtasi forget password

2.15. Implementasi main page admin

Implementation of admin interface is used by employees who have the right level as an administrator in charge of managing master data ie

user data. The design of the admin interface can be seen in Figure 13.

2.16. Testing conclution blackbox

Based on the results of testing the system that has been done as a whole can be concluded that the application process Information System Supply Chain Managemnet is enough and the system functionality has been able to produce the expected output.Based on the results of system testing that has been done as a whole can be drawn the conclusion that the system application process Supply Chain Managemnet information is sufficient and system functionality is able to produce expected output

2.17. Testing conclution beta

1. *This built information system can facilitate the administrative part of ordering in processing the process of ordering products from consumers*
2. *The information system built can facilitate the procurement in knowing the rest of the raw materials in the warehouse.*
3. *Information system built this can facilitate the procurement in determining the amount of procurement of raw materials as needed.*
4. *This built information system allows bagina delivery in determining which order products should be sent.*

3. Closing

3.1. conclution

Based on the results obtained in the writing of this thesis, it can be concluded as follows:

1. *This supply chain managemet information system can assist the procurement department in terms of determining the amount of raw materials required. Thus the production stage and delivery stages run well and on time in the delivery of products according to a predetermined length of production.*
2. *Supply chain management information system can assist the delivery department in determining the delivery schedule of products that must be sent and can see the delivery status of the sender's products by using the delivery service or third party, delivery is done when the product has been completed produced by the duration of a product ordered by customer.*

3.2. sugestion

Suggestions for the development of this information system there are several suggestions that can be done, among others:

1. *Make it look more interesting because the display is still used now simple, And need the development and better maintenance of the system that has been built, so the system can be used in accordance with the needs in the future.*
2. *Further research is expected that the system built to manage and details in taking into account the cost for the purchase of raw materials to the Supplier.*

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