

## The Analysis and Evaluation on the Supplying Goods Controlling System

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**Abstract:** One of the important activities in a company is controlling the procurement of goods, since it involves several components in the company and engages customers as it happens in PT. Elektra Daya Integra (Elkadaya) the authorized company distributor that engages in safety equipment, testing equipment and maintenance of the device. The process of goods procurement from every part of the companies is still involved. The process of goods procurement that occurs in Elkadaya involves several sections. They are sales, warehouse, accounting as well as import and order processing. In addition, it also involves its consumers, president director and producer. So, there are many errors in the information among the sections in the company. The collection data in this study uses observation and interviews as well as the approach method which is structured approach method. And as a tool for analysis and design that will be used are flow map, context diagram and Data Flow Diagrams (DFD). The results of this study are the improvements to the process of goods procurement control in PT Elkadaya.

**Key words:** Control of goods procurement, structured method, flowmap, testing equipment, observation and interviews

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### INTRODUCTION

**Background:** The current development of information technology is very rapidly, it causes the information technology enormous impact on human life. Almost all activities which are performed by humans have used information technology as it will be easier and faster (Jimmy and Gaol, 2005; Mustakini, 2005). It is similar that happens in business world. Almost all companies have used information technology to support its business activities (McLeod and Schell, 2001; Yakub, 2012). It is done no other to provide services to its customers.

One of the activities that are very important in a company is controlling the procurement of goods, because it involves many parts of the company. As it is the case in PT. Elektra Daya Integra. In the procurement of goods, it involves the sections (Assaur, 2001). They are sales, warehouse, accounting as well as import and order processing. If there are errors in the information in one section, it will influence the information on the other section. Since, the ultimate aim of the goods procurement is service to consumers, the error that occurs will also influence the service to consumers.

#### Research objectives:

- Conducting an analysis of the procurement control process in PT. Elkada
- Evaluating the procurement control process in PT. Elkadaya

### Literature review

**Inventory:** Some definitions of inventory are as follows (Yudiatna, 2010), Starr and Miller explain that inventory is theory hardly inquires education and inventory immediately brings to minds a stock of some kind of a physical commodity. Rangkuti states that inventories are materials, supplied parts and materials in the process which are contained in company for production process and finished goods or products which are supplied to meet demand from consumers or customers any time. Baroto states that inventories are raw materials, work in process, finished goods, auxiliary materials, supplementary materials, components which are stored in anticipation of the request fulfillment. From the above definition, it can be concluded that inventory is material in the form of raw materials, semi-finished goods or finished goods that are stored in a place or warehouse where the goods are waiting to be processed or produced more.

**Inventory functions:** In principle, inventory facilitates or expedites the operation of companies/factories that should be done consecutively to produce goods and to deliver it to customers or consumers. The functions of inventory by a company/factory are as follows.

**Decoupling function:** It is the inventory that allows company to meet customer demand without depending on supplier. Inventories of raw materials are held so that

company will not be entirely dependent on procurement in terms of quantity and delivery time. In-progress inventories are held so that departments and processes of companies individual have their “freedom”. Inventories of finished goods are required to meet product demand which is uncertain from its customers. Inventories which are held to deal with fluctuations in consumer demand that can not be predicted or foreseen are called fluctuation stock.

**Economic lot sizing functions:** Inventory of lot size is necessary to consider savings or cuts its purchasing, transportation costs per unit to be cheaper and so on. It is because company makes purchases in larger quantities than the incurred costs due to the inventory amount (cost of warehouse rental, investment, risk and so on).

**Anticipation functions:** It is when company faces fluctuations in demand that can be estimated and predicted based on the past experience or data, namely the seasonal demand. In this case, company can enter seasonal inventory (seasonal inventories).

**Inventory control:** Inventory control is the determination of an ordering policy in the queue when the material is booked and how many are booked optimally to meet the demand or in other words, inventory control is an operation or activity to determine the optimal level with minimum inventory costs so that company can run smoothly (Rangkuti, 2004; Ozyurek and Uluturk, 2016; Kurniawati and MeilianaIntani, 2016). The problem of determining the inventory amount is an important issue for the company because inventory has a direct effect on company profits. Too large raw material inventories which are compared to the needs of company will increase interest expenses, storage costs and maintenance in warehouse as well as the possibility of depreciation and quality that can not be maintained so that it will reduce company profits. Otherwise too small inventory will cause congestion in the production so company will suffer losses as well.

If the inventory material is too large or the misdetermination of inventory levels can be bad and cause company are caused by:

- Accumulation of inventories cause capital is invested too big
- The decision to order or purchase goods repeatedly in small quantities causes great booking fee
- A shortage of inventory causes inhibition of production activities
- The cost of inventories
- The risk of material damage

Otherwise, if materials inventory is too small, it will result in losses for company, among others are caused by:

- Congestion in production
- The cost of the booking
- The cost of inventory shortages

Factors that influence the raw materials inventory are:

- The usage estimation
- The price of raw materials
- The costs of inventory which includes booking fees and storage costs
- The use of actual means that real consumption in accordance with company data
- The waiting time (lead time), it is the time which is needed to order the goods until it comes. The lead time is not always constant. It tends to vary because it depends on the goods amount that is ordered and the reservation time

## MATERIALS AND METHODS

**Research design:** The research design is included in a descriptive research, it is the research that aims to obtain a variable in which the research results is to gain an overview of the application program performance that is designed and implemented to the user with a case study approach at PT. Elektra Daya Integra.

**Approach method:** Systems approach method is a method that will be used in conducting information system design. In the making of information systems, it is necessary to use a methodology that can be used as guidelines for how and what should be done during the system making, i.e., systems approach and system development method. In this study, the systems approach is structured approach and to develop the information systems it is used waterfall development method.

**Analysis tools:** In designing a system, it is required some tools, this is chart reference that will make it easier to describe the components which present in the process and make proposals to problem solving logically and the tools are: flowmap, context diagram, Data Flow Diagram (DFD).

## RESULTS AND DISCUSSION

### Analysis and evaluation

**Ongoing procedure analysis:** Ongoing procedures in the warehouse of PT. Elektra Daya Integra are as follows. The procedures of ongoing goods procurement are:

- Sales receive a Pre Order (PO) from customers
- Sales make a Sales Order (SO) to warehouse section
- Warehouse section verifies sales order and the goods availability to the data items which are available on the computer
- Warehouse section forwards the list of goods submission that is not available in warehouse to make provision through accounting section
- Accounting section requests this goods order to Import and order processing section
- Import and order processing section publishes PO (Purchase Order) to verify and confirm to the previous president director
- Import and order processing section makes goods purchases to manufacturer
- Manufacturer sends goods by bringing the transaction proof (invoice)
- The invoice is delivered to warehouse section. It is archived
- The goods are received by warehouse section. Warehouse section makes the invoice of 2 copies and 1 copy it is archived
- Warehouse section reports procurement which contains invoice of goods purchases and goods acceptance. The procurement report was given to president directors (each month)

Procedures of ongoing goods sales are:

- Warehouse section receives sales orders from existing sales in procurement flowmap
- Warehouse section makes list of goods availability
- Warehouse section provides sales order and list of goods availability into accounting section
- Accounting section creates list of goods submission and list of archived goods availability. Warehouse section provides sales order and list of goods submission to finance section
- Finance section conducts data checking and creates billing documents to the customer. Customer receives billing data then the customer provides payment data which has already paid to finance section
- Finance section verifies payment data and then sales order, list of goods sales, payment data is given to accounting section
- Accounting section records payment data and list of goods sales on a computer. Sales order and payment data are archived and list of goods sales is given to warehouse
- Warehouse section prepares the goods that will be sold and makes delivery orders as many as 3 copies

- The delivery orders of 3 copies are given to customer and customer signs it then two copies that are signed by customer are given back to warehouse and 1 copy is kept by customer
- Warehouse section gives 1 copy of delivery order to accounting section and it is archived
- Warehouse section makes sales report that lists goods sales and delivery orders. After that they are archived
- Warehouse section provides sales reports to president director

Procedures of ongoing goods control are:

- Warehouse section is to process and print data items on the computer then organized goods are given to the technical support assistant manager. Assistant manager of technical support section is to do inspection and sorting data items and goods. Once it has been inspected and selected, the data items according to the procedure are given to warehouse
- Warehouse section is to make updates to current data items on the computer including the archived receipt items
- Warehouse section is to print data updates to as many as 2 copies and the data updates are given to the accounting sections and import and order processing sections
- Warehouse section is to data items report and it is given to president director (every month)

**Flow map of ongoing system:** Flow map is a mixture of maps and flow charts that show the movement of objects from one location to another such as the number of people in migration. Flow map helps analysis and programmers to solve the problem into segments that are smaller and helps in analyzing other alternatives in operating. Briefly, flow map is a graphical depiction of the steps and document sequence of a system (Fig. 1-4).

**The overview on flow map of ongoing procurement is as follows:**

- Goods pre order
- Making a sales order
- Verification of sales order and the availability of goods
- Available
- Goods available
- Making goods submission
- List of unavailable goods

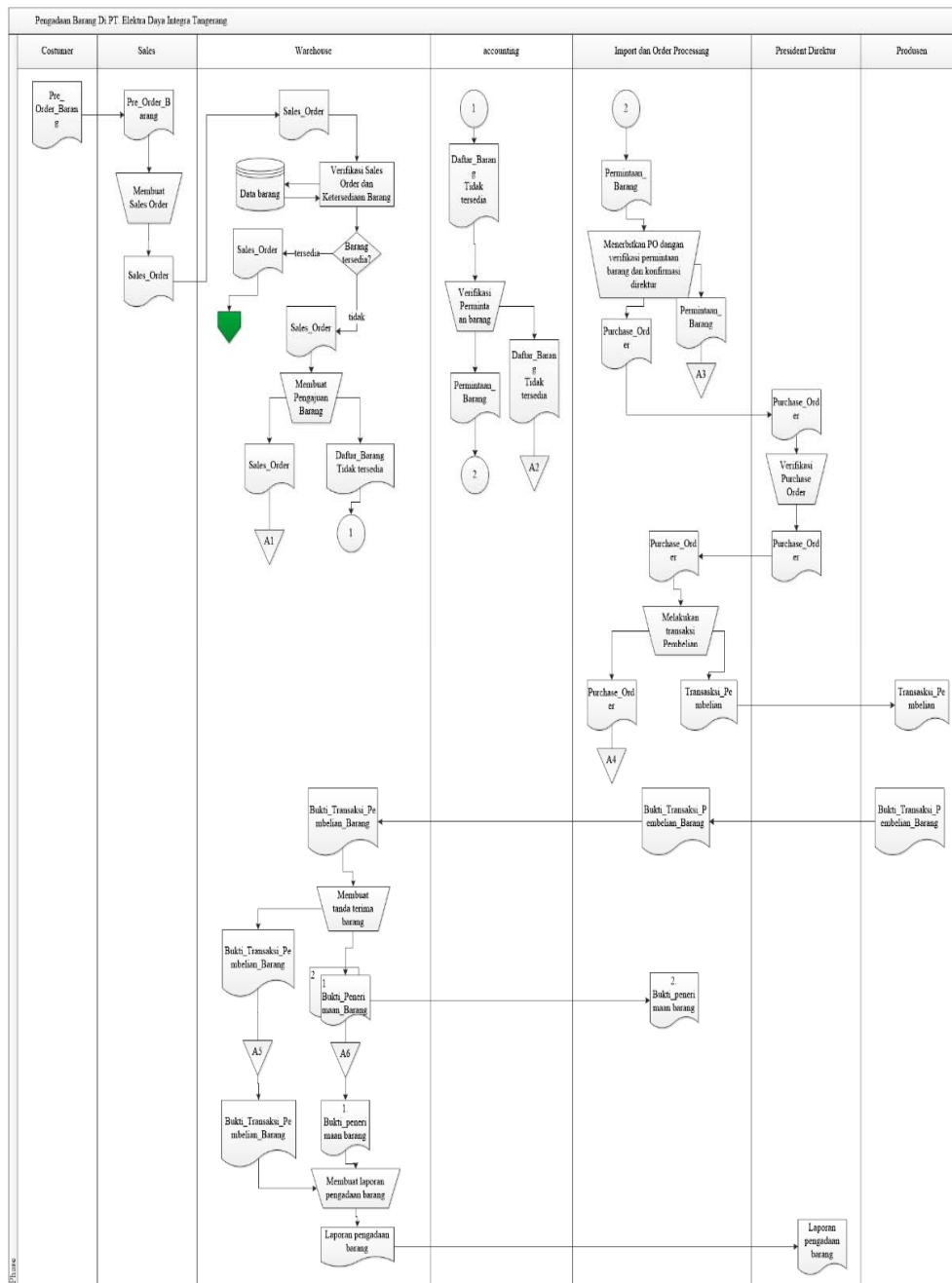


Fig. 1: Flow map of ongoing procurement

- Proof of goods purchases
- Making goods receipt
- Goods receipt
- Making procurement reports
- Inventory
- Make a list of goods availability
- List of goods availability
- List of goods sale
- Preparing items to be sold
- Making delivery orders
- Delivery orders
- Making sales report
- Sales report
- Make a list of sales
- Payment list
- Sale of goods

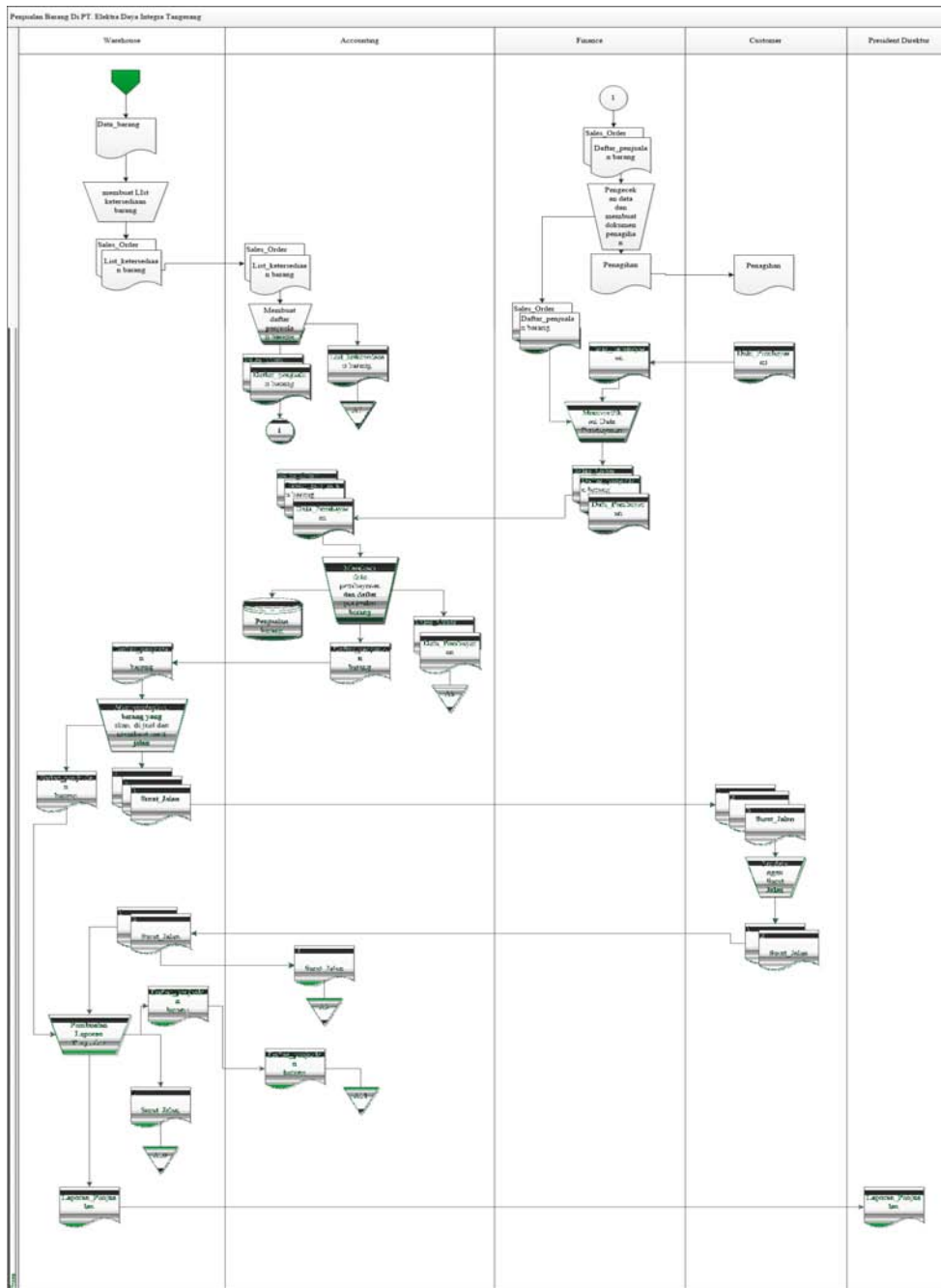


Fig. 2: Flow map of ongoing procurement

- Recording the payment data
- Checking data
- Making billing documents
- Billing
- Payment data
- Verification of payment data
- List of goods sale

**Procedure of procurement**  
**Procedure of goods sales**  
**Procedure of goods control:**

- Data items
- Making up date on real quantity of goods
- Goods receipt
- Printing update on data items

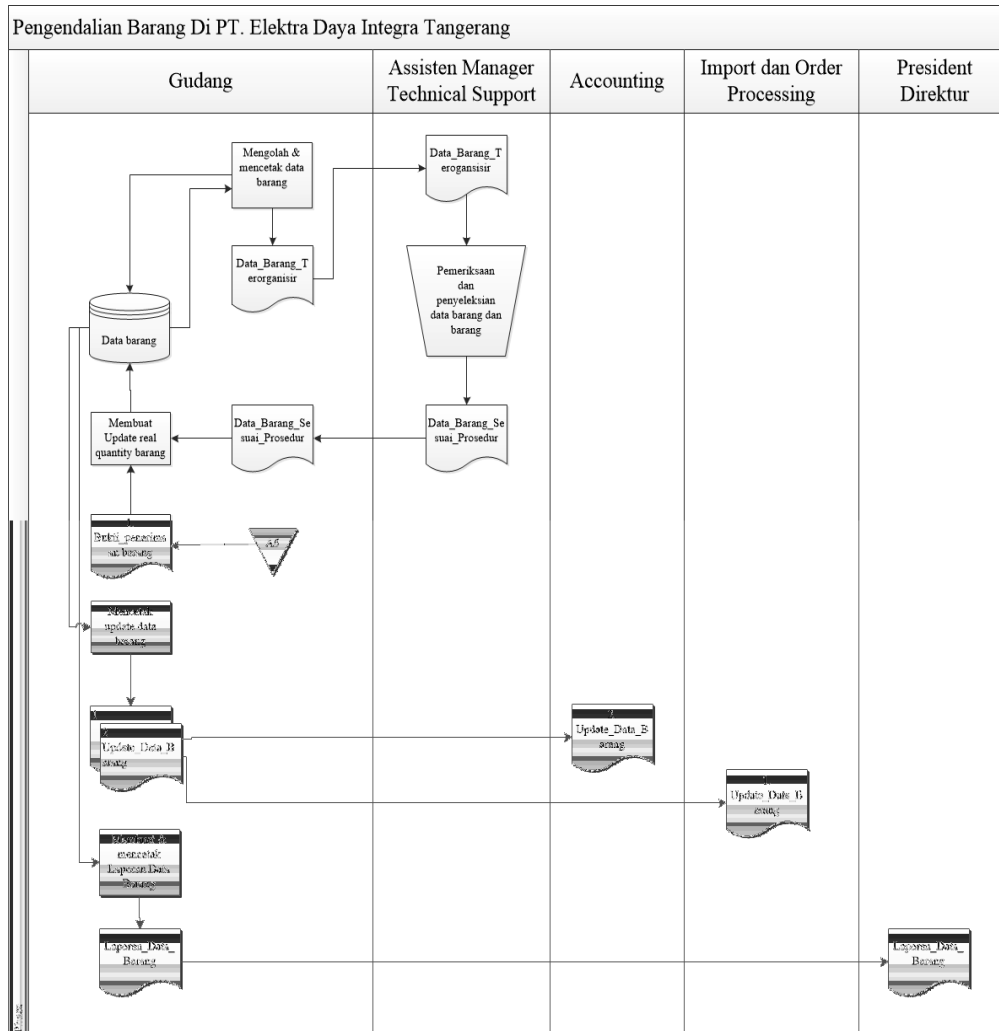


Fig. 3: Flow map of ongoing goods controls

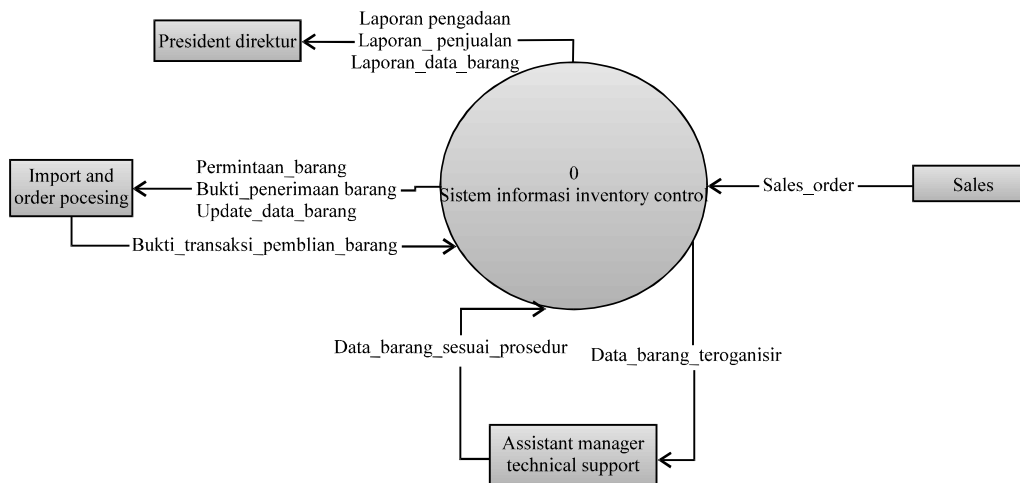


Fig. 4: The ongoing diagram context

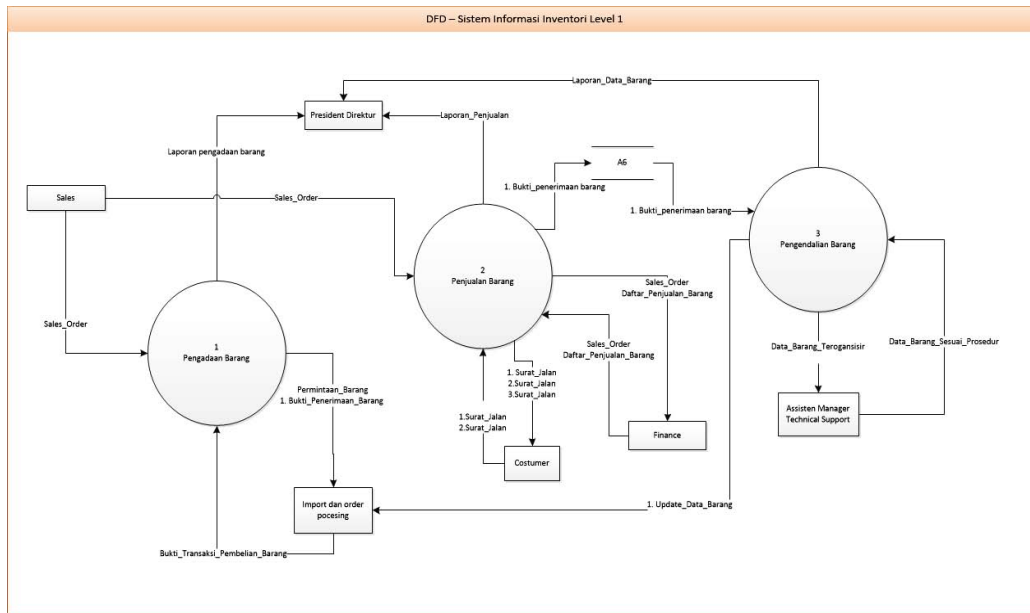


Fig. 5: The ongoing data flow diagram

- Up date data items
- Making and printing reports of data items
- Data items report
- Processing and printing data items
- Data items organized
- Data items according to the procedure
- Examination and completion of the data items and goods

**Context diagram:** Context diagram is a diagram that consists of a process and describes the scope of a system that includes all the data input into the system and the data output of the system. The following is a context diagram of inventory control information system that is ongoing on PT. Elektra Daya Integra (Fig. 4):

- Goods demand
- Goods receipt
- Goods up date
- Proof of goods purchases
- inventory control of information system
- Data items according to procedure
- Data items organized
- Technical support assistant manager
- Reports of goods procurement
- Goods procurement
- Proof of goods purchases
- Goods demand
- Goods receipt
- President director

- Sales report
- Sale of goods
- Delivery orders
- Goods data report
- List of goods sale
- Goods control

**Data flow diagram:** Data flow diagram is used to describe the system as a network of processes is functionally connected with each other by the data flow. The following is a data flow diagram of inventory control information system at PT. Elektra Daya Integra (Fig. 5).

**Evaluation of the current system:** After conducting an analysis of inventory control information system which is running, there are some problems in the system as follows:

- There is no categorization of items that causes difficulty in classifying goods and in the process of storage in a warehouse
- Part of the process which is performed on the inventory system is still manually, this causes the inventory data control become disorganized and it is often to duplicate the goods name which is caused by the absence of coding on each item
- Non-compliance of inventory data with the inventory purchases occur because the inventory data is vague and inaccurate

## CONCLUSION

From the description and the problems that exist in PT Elkadaya we can suggest to the management to improve the procurement control system of the company. The submissions are the conclusions from this study in which PT Elkadaya needs to do the following: designing a procurement control information system by creating categorization of goods so that the grouping of items can be organized and in warehouse storage can be arranged well and can be facilitated for searching items data. Designing a procurement control information system by creating an items master so it will only enter the data and will simplify the process and the data items to be organized. Designing a procurement control information system by creating the inventory data in order to control goods inventory to be clear and accurate so that the inventory data are suitable to purchasing data.

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