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Proposed Acquisition System Design (Procurement) & Inventory-Based ERP With Soft Systems Methodology Method in the Manufacturing Industry Bags

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Abstract:- Market merchandise for very large bags in Indonesia. Increase business opportunities in the industry is very wide bag because the bag is a need for both male - male or female. Bags qualified and affordable prices are the main focus for the bag manufacturing industry. In September 2018, the bag manufacturing industry has the highest demand for a moment the bag because it coincided with the turn of a new school year for students. One of the factors supporting the achievement of a high demand is good integration between the components business processnya. One is the relationship between the parts procurement to inventory that should be well integrated. The bag manufacturing industry often have constraints on the procurement and inventory as there is a mismatch of recording proof of purchase by part by part accounting procurement and also there are delays in updating and distribution of goods to other units by inventory team. The purpose of this study is to propose the design of soft systems methodology in parts procurement and inventory-based ERP in the bag manufacturing industry. By using soft systems methodology based enterprise resource planning (ERP) that Industrial manufakutr bag has a solution in the form of software contained modules and facilitate parts procurement, inventory, accounting in completing its tasks.

Keywords:- *Bag Manufacturing, Procurement Section (Procurement), Parts Inventory, Accounting Section, Soft Systems Methodology, Enterprise Resource Planning (ERP).*

I. INTRODUCTION

Bag manufacturing industry (IMT) is a company engaged in the business of production of branded fashion merchandise such as clutches, backpack, foldable bag, pouch, toiletries, agenda, id cards, and others. The company uses a sales system that cooperate with state-owned companies such as Medco, Pertamina, Conoco Philips, ENI MuaraBakau, BNI Syariah, BNI 46, BRI Life, Shell and other state-owned companies are usually called corporate sales. Products The company also has its own brand to sell non corporate sales like Gurkha, Moshi Moshi, Luiperd, Mockup and others. The success of the business processes within the company is always involved parts procurement system (procurement) and inventory supporting factors smoothness of the production business.

In September 2018, the bag manufacturing industry has a history project that quite a lot of previous months because it coincides also with the moment towards the turn of the year so many requests that in order giftionary products from multiple client SOEs. The following graph bag manufacturing industry product sales in the month of September 2018.

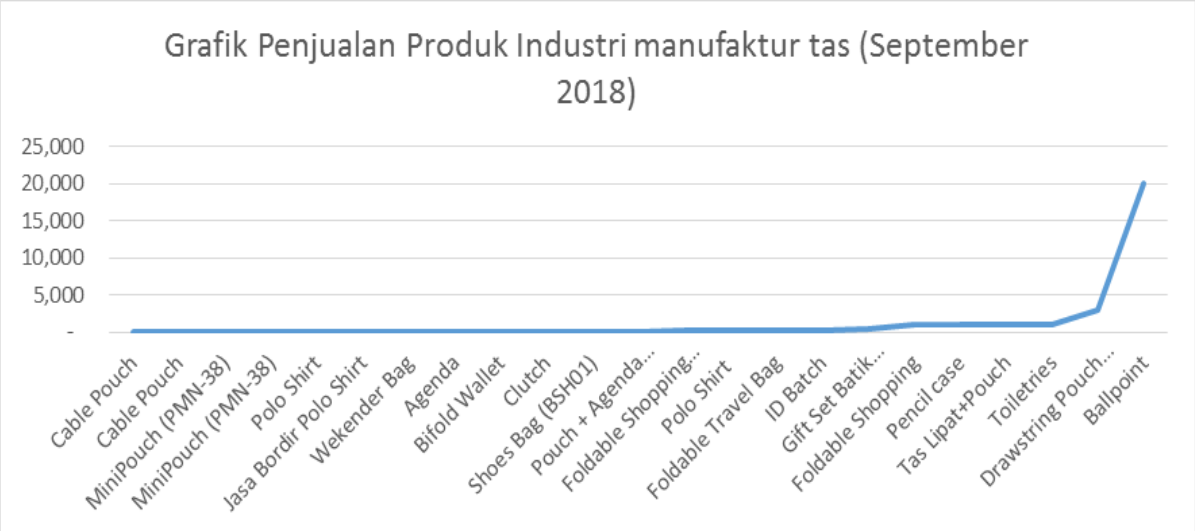

Fig 1:- Graph bag manufacturing Industrial Products Sales

Based on Figure 1 that the bag manufacturing industry has a history of high demand so the need for procurement and inventory system strong. In accordance with the theory according to Turban (2010) that procurement or procurement refers to all activities that melibatan process of getting goods from suppliers that include purchasing and logistics activities such as incoming goods and storage in warehouses sbeelum goods are used. From theory can be seen that for a good business processes of procurement and inventory system requires strong because the procurement system is related to all the activities as an example to make a product clutch,

In the bag manufacturing industry there is often a mismatch of recording proof of purchase by the procurement (procurement team) with the journaling and management accounting in the inventory is still quite complicated because it is not supported by a structured management system and integrated. It causes frequent repetitive recording in the process of receiving proof of purchase and registration on journaling by accountants. The impact is difficult to manage incoming requests for quotations, invoices, purchase orders, and proof of purchase are integrated with the accounting system and also frequent delays updating and distribution of goods to other units. Based on the above issues will require a procurement and inventory system design to help procurement team,

According Hardjosoekarto (2012) that the soft system methodology (SSM) is a methodology based systems thinking and system concept dealing only with human activity systems (all systems of human activity). By using the SSM can illustrate that the manufacturing industry is the bag as a unity problem that differ from each other with different solutions and is also expected by using SSM can help procurement teams and inventory analyst in the procurement system which is also supported by the ERP system that is OpenERP as it relates to integration module procurement team with the accounting and finance and help the flow of goods data collection process contained in the warehouse.

II. LITERATURE REVIEW

A. Definition of Procurement (Procurement)

According to Kotler, et.al (2005) that in the business process include matters relating to the procurement process that starts from ihtisiar of manufacturers are trying to meet consumer demand and then begins with the production process continued with the introduction of goods to the consumer by establishing brand awareness. Brand awareness is a very important process for forming the target consumer awareness of the products offered will facilitate the marketing and sale of the goods. After that stage, the manufacturers will involve other parties known to the supplier or vendor. Supplier or vendor is responsible for providing and distributing goods to the seller or directly to consumers.

B. Understanding Inventory

*Inventory*is inventory. Inventories related to the term warehouse. Warehouse is part of the logistics system of the Company as a place to store the goods (raw materials, parts, semi-finished goods and finished goods) between the point of origin and destination that provides information to management about the status, condition and disposition of goods being stored. Warehouse or barn is needed in the process of coordinating the distribution of goods that arise as a result of imbalance of supply and perminaan process. That prompted the emergence of stock (inventory) which require space as a temporary storage area.

C. Definition of Soft Systems Methodology (SSM)

SSM (Soft Systems Methodology) is a method or strategy development and system development that focuses on solving the problem based on the interest of researchers. SSM (Soft Systems Methodology) looking at a problem is a unit that has a branch of different problems.

D. Enterprise Resource Planning (Erp)

ERP according to O'Brien (2006) is a cross-functional enterprise backbone that integrate and automate many internal processes and information systems in terms of the functions of production, logistics, distribution, accounting, finance and human resources at the company.

E. Openerp

OpenERP is a business application with modules complete of sales, CRM, project management, warehouse management, manufacturing, financial management, and human resources, as well as many supporting modules. Purchase management module to integrate OpenERP with the vendor company and also at financial companies in the procurement of goods and is also associated with the warehouse company so that it can more easily record dating and necessary items. In this way the procurement committee can manage data vendor suppliers, to plan the procurement of goods, and can create reports in accordance with the supplier invoices are automatically tersimpat on the database for purchase management module.

III. METHOD

➢ *Stages of Soft Systems Methodology (SSM)*

The following stages of soft systems methodology (SSM) is as follows:

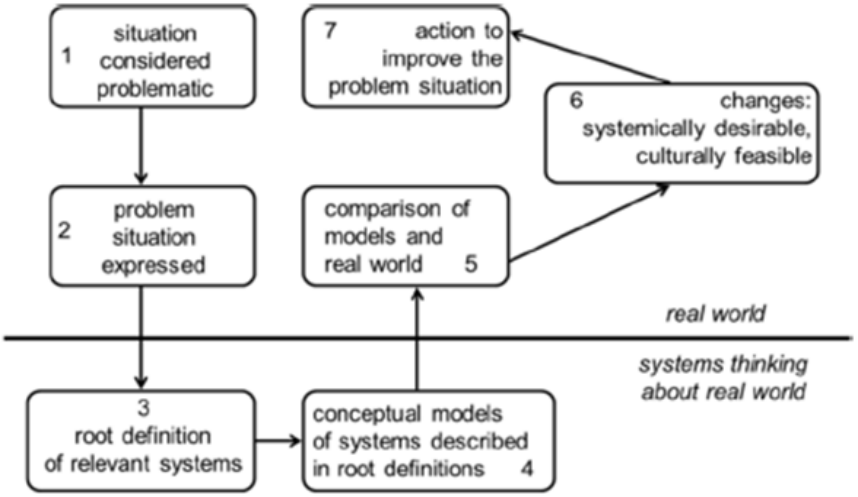

Fig 2:- Stages of Soft Systems Methodology

The following stages of soft systems methodology (SSM) is as follows:

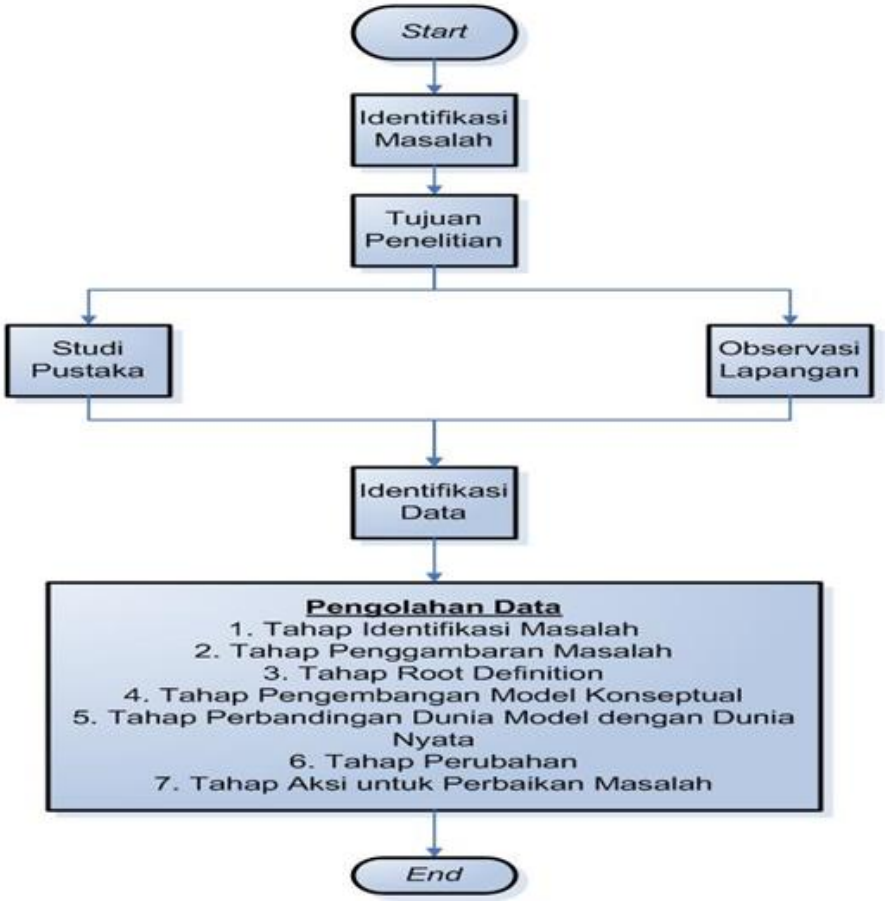

Fig 3:- Stages of Implementation Flow Chart

IV. DISCUSSION

❖ *Stages of Soft Systems Methodology (SSM) Based Enterprise Resource Planning (ERP)*

The following stages are as follows:

A. Phase Identification of Problems

At this stage, identification of issues contained in the bag manufacturing industry. Especially in the procurement and the inventory. It is intended to determine the mapping issues contained therein. In the procurement system (procurement) there is a problem that is not their ingerasi between procurement team with the accounting team which led to repeated recording and data discrepancies between invoices with journaling is performed by the accounting. In addition, there is also a problem in the system the inventory that is recording the data in the warehouse is still done manually, managing warehouse is not well integrated with the parts procurement, accounting and parts of other public as well as the distribution of the movement of goods that are not up to date so that there was an error recording the statements goods.

B. Phase Depiction Problem

Here's existing business processes in industry manufacture bags, are as follows:

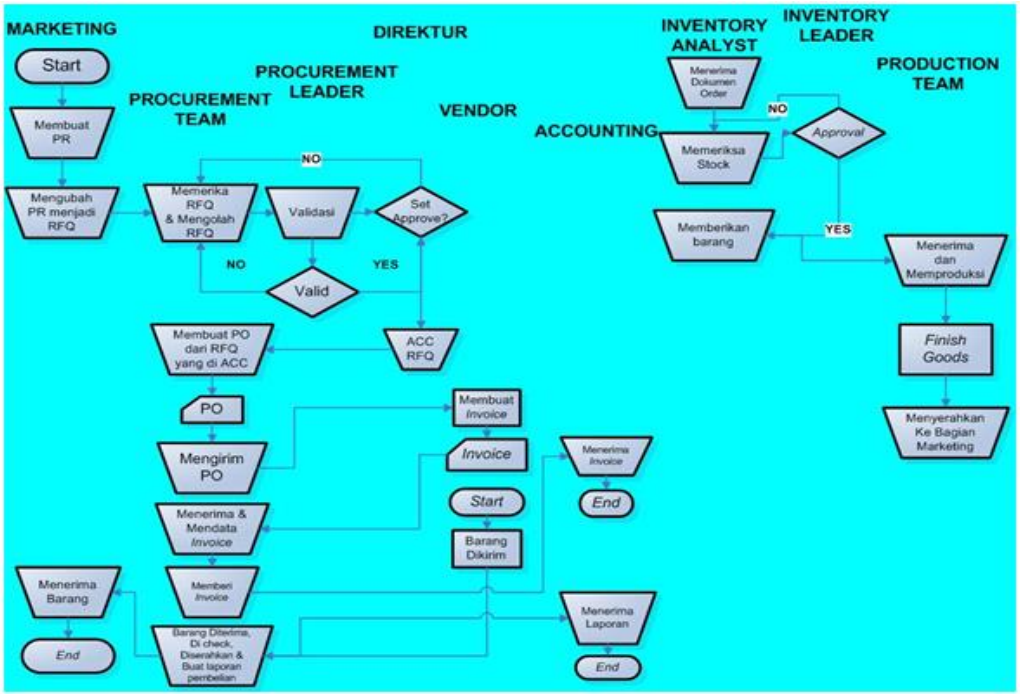

Fig 4:- Business Process Existing PT. MPP

The following diagram picture rich in the procurement system in the bag manufacturing industry, is as follows:

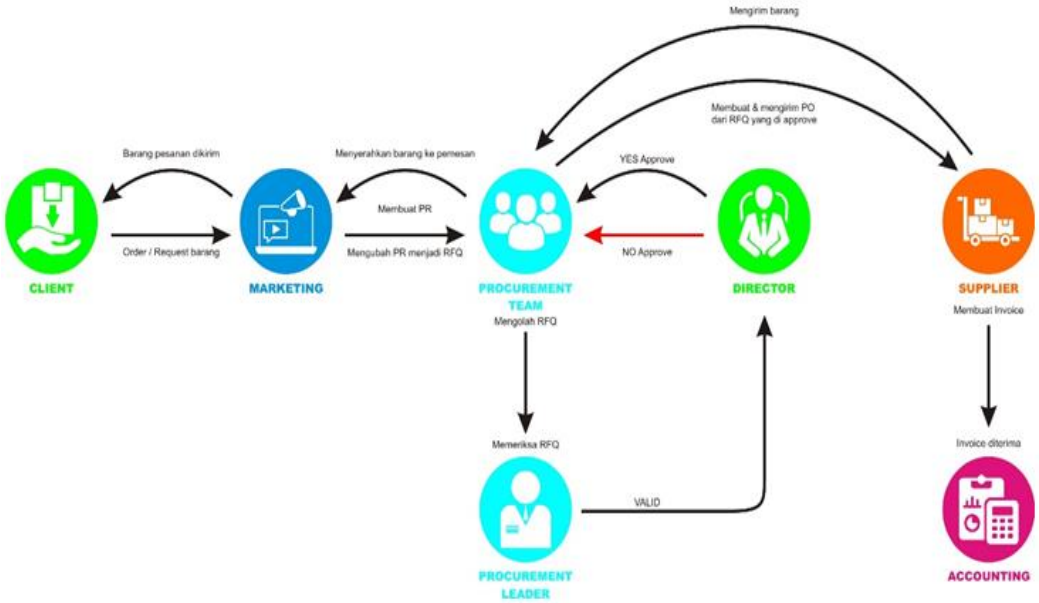

Fig 5:- Rich Picture Procurement System Diagram in the bag manufacturing industry

The following diagram picture rich in inventory systems in the bag manufacturing industry, is as follows:

Fig 6:- Rich Picture Diagram Inventory System In PT. MPP

C. Definition Phase Root

The following analysis by CATWOE the procurement system (procurement) in the bag manufacturing industry,

Transformation	***worldview***	***Actor***	***Customer***	***Owner***	***environment***
Integration between procurement team with the accounting	Assist in the management of the PO and the invoice so that it can assist in problem repeatedly recording the invoice that did not fit	Party ERP and Researcher	Manufacturing of industrial bags, especially procurement team, accounting team	Manufacturing Industry bags	*procurement team* within the scope of transaction records, and acceptance.

Table 1:- CATWOE Procurement System (Procurement)

The following analysis of CATWOE the inventory system in the Manufacturing Industry bag.

Holon	*Transformation*	*worldview*	*Owner*	*Customer*	*Actor*	*environment*	*possible System*
Documenting goods	Documenting information about goods into the system	Documenting goods less update and complete	*inventory Leader*	*inventory Analyst*	*inventory Analyst*	Data of each item incomplete	The system will store the data in detail
Ordering goods to the Procurement Team	Making the reservation into the system	Provide information to the procurement team on the items to be in the message	*inventory Leader*	*procurement Team*	*inventory Leader*	Data ordering goods incomplete	The system will create a document that contains the complete request
Holon	*Transformation*	*worldview*	*Owner*	*Customer*	*Actor*	*environment*	*possible System*
recording reservation	Recording ordering goods	Knowing the number of orders	*inventory Leader*	*procurement Team*	*inventory Leader*	Recording recurring reservations	The system will store data ordering goods
Check availability of goods	Knowing the availability of goods with the system	Incompatibility of existing data items with goods to be distributed	*inventory Analyst*	Division requiring	*inventory Analyst*	The process of availability of goods report incomplete	The system will automatically display the goods available
distribution of goods	The system will display information destination and distribution of goods	Provide information to divisions that require & inventory analyst on the distribution of goods	*inventory leader*	Division requiring	*inventory Analyst*	The distribution is quite long and the information is incomplete	The system will perform data collection items and other information included in the distribution of goods

Table 2:- CATWOE Inventory Systems

D. Conceptual Model Development Phase

The following picture conceptual model which is prepared and contains aktivias that occur in the real world and system thinking and designing a system that is applied to the real world activity.

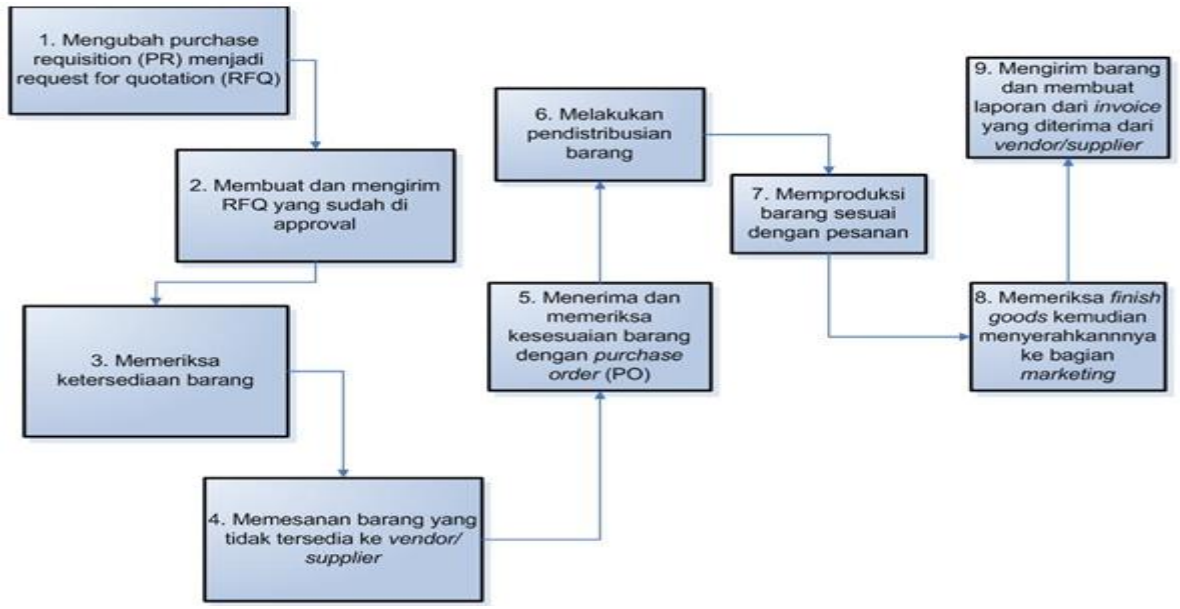

Fig 7:- Conceptual Model

The result of the conceptual model design can be considered valid if it meets the criteria 3E (Efficacy, Efficiency and Effectiveness), including the following:

- *Efficacy (E1):*

By designing OpenERP system which has an integrated module capable of reducing the occurrence of repeated recording and miss data between teams procurement, inventory analyst with part accuounting& finance / other.

- *Efficiency (E2):*

Efficiency can be achieved because it involves actors involved in the supply chain in PT MPP and capable of identifying the need for all actors. As he proposed a system that integrates all modules in the supply chain in order to streamline the time.

- *Effectiveness (E3):*

To fulfill the demand of the client so that it does not require additional time to complete a product.

E. Phase Comparison of the World Models with Real World

Comparisons were made to find a mismatch between the state of the running with the desired model and get the possibility of change,

Activity	Conditions in the Real World	Reflection with Purpose
Make a Request For Quotation (RFQ)	Making process is still manual RFQ	Make a list RFQ by inputting the necessary items to be filled by each division in need.
Make a purchase order (PO)	The process of creating PO still manually with Excel	Make PO sufficient proceeding from the RFQ that has been made.
Request approval from the director on PO	Approval process is long enough	Creating a system that is connected to the director for approval soon
PO sent to vendor / supplier & Receiving Invoice	The process to send PO manually (inter via courier)	PO sent to vendor / supplier & Receiving invoices through modules that directly connect to the email
Noting goods data	Goods data recording process performed by dokumenn excel	Create a form on OpenERP software for inputting data items
Noting ordering goods	The booking process to procurement team directly or no written evidence	Make a request order form for the procurement process
Doing distribution of goods	The process of distribution of goods and data collection is still recorded in specific documents.	Create a form of transfer orders to the distribution process as well as for the collection of goods distributed.

Table 3:- Comparison of the World Models with Real World

F. Phase Change

At this stage to explain the changes that may occur if the recommendation is implemented. The following possible system in the ERP system.

No.	*possible System*	Module	OpenERP features
1	Making the request for quotation	*procurement*	Inputting a request list of goods
2	Making the purchase order	*procurement*	Make a purchase order on the purchase module
3	Delivery PO and Invoice Receipt	*procurement*	Send purchase orders and receive invoices
4	Recording data items	*warehouse*	Creating a Product Data Product Data Menggadakan See Product Data Data Editing Products Deleting Data products
5	The system does the demand for goods to purchase modules	*warehouse*	Make Procurements Data Products Procurements Data Checking Products Procurements Data Wiping Products Doubling Procurements Data Products
6 6	The system will distribute and record the distribution to each section	*warehouse*	Creating a Data Transfers Editing Data Transfers Viewing Data Transfers Distributing Data Transfers Deleting Data Transfers

Table 4:- Possible System and Feature in Enterprise Resource Planning

G. Phase Action to Repair Problems

At this stage contains action to repair the problem. The final solution is to design a system of soft system methodology berbasikOpenERP. This solution can be seen in the use case diagram. Use case diagrams are diagrams that show relationships and aktivias performed each user.In use case, there are two actors namely Procurement / Inventory Leader & Procurement / Inventory Team. Use case diagrams can be seen in Figure.

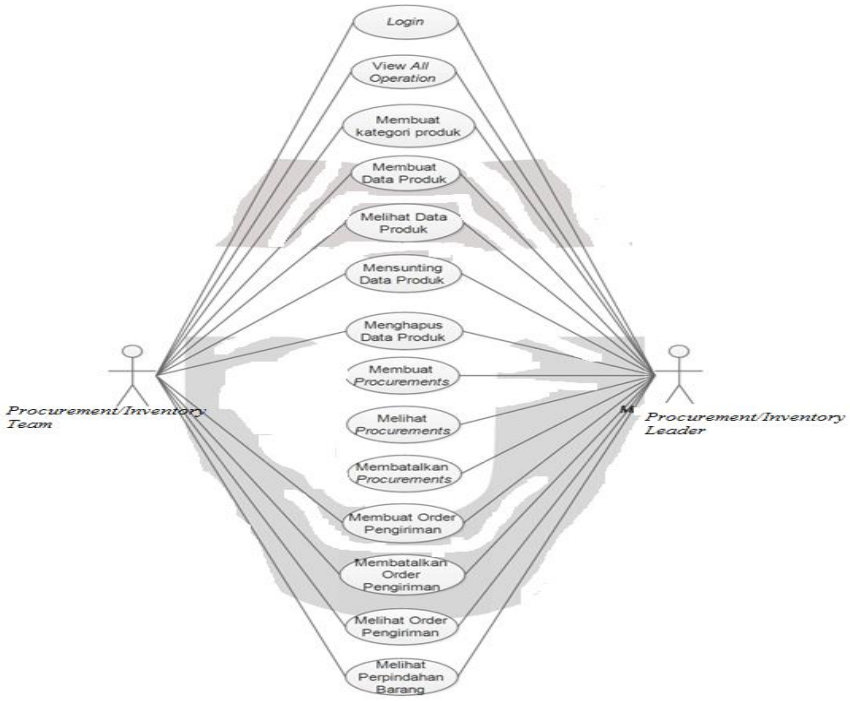

Fig 8:- Use Case Diagram

V. CONCLUSION

Based on the above objectives, it can be concluded that:

1. Using soft system design methodology makes it easy to map out a problem to be solved. From 9 activity in this SSM can be identified by designing a solution that is based ERP system.
2. By using OpenERP design helps procurement and inventory teams to improve performance and effectiveness in ordering goods, distribution of goods and store of the modules contained therein.

SUGGESTION

Suggestions for further research is to reduce the scope of the problem to be solved by better and more detailed / mandalam.

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