

# WAREHOUSE MANAGEMENT INFORMATION SYSTEM USING ECONOMIC ORDER QUANTITY IN CV CIHANJUANG CORE ENGINEERING

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## ABSTRACT

CV Cihanjuang Core Engineering is a company engaged in the field of traditional food and beverage. One product of CV Cihanjuang core technique is a traditional drink that is typical of West Java and bajigur bandrek Cihanjuang Road, Cimahi, Bandung, West Java. CV Cihanjuang Core Mechanical problems found in warehouse management so that there is a vacuum supply of raw materials and happen reservations over the limit specified date. Therefore we need an information management system of warehousing can help the head of the warehouse in CV Cihanjuang Core Techniques in determining the number of bookings optimal and assist in determining when it is appropriate to melakukan orders to suppliers in order to avoid gaps supplies and can meet the maximum limit supplies , By using the method of analysis ABC / the analysis of Pareto grouping data, the method Economic Order Quantity (EOQ) is used to determine the optimal number of bookings related to the Maximum Inventory and Reorder Point method (ROP) is used to determine the return booking. So that the information systems in the wake can complete permasalahan CV Cihanjuang inventory management at Core Engineering

**Keywords:** Warehousing, Information Systems  
Warehouse Management, ABC  
Analysis, Economic Order  
Quantity (EOQ), Reorder Point  
(ROP)

## 1. INTRODUCTION

CV Cihanjuang Core Engineering is a company engaged in the traditional beverages or soft drinks where CV. Cihanjuang Core Techniques (CinTek) produce or make a traditional beverage from West Java or commonly called the archipelago drinks Bandrek, Bajigur, Skoteng, beas cikur and variations of bandrek and variations of

bajigur. Viriasi bandrek and bajigur including bandrek coffee, tea en bandrek, bandrek chocolate, ginger drink specials, and coffee bajigur.

The results of the interview with Ms. Sapuroh as the Head of Warehouse CV Cihanjuang Core Engineering, stated that the warehouse had difficulty in determining the number of bookings or purchases of raw materials is optimal because the process is now carried out to determine the number of orders based solely on intuition alone so Sapuroh not know the number of bookings Must be fulfilled. It is influenced as yet it determines the maximum limit for each product. So the head of the warehouse do not know whether the number of orders placed was nearing the maximum limit as necessary or not. The maximum limit in question is the extent to which stock the warehouse must be met (maximum inventory). Maximum inventory of raw materials and products is very important to implement,

Besides the head of the warehouse had difficulty in deciding when to book back to the supplier of raw materials because during this time the reservation is made when the supply of raw materials has been exhausted, it is caused yet-determined point determination ordering raw materials back to the supplier by the company. It also resulted in the booking time is erratic and often occur outside the schedule time of reservation, while the company determined that the time of reservation should only be done in the range of 1 to 15 each month

Based on the background of the problems described, it is a problem that occurs in CV Cihanjuang Core Engineering, the formulation of the problem underlying the preparation of this thesis are:

1. Helping head warehouse in CV Cihanjuang Core Techniques in determining the number of bookings or purchases so there is no vacancy optimal raw material inventory.
2. Helping head warehouse in CV Cihanjuang Core Techniques in determining when time

the right to make a reservation back to the supplier so as not overextending the specified date

## 2 RESEARCH

### 2.1 Management information System

Definition of a Management Information System (MIS), according to some experts. According to Joseph F.Kelly in his book "Computerized Management Information System" defines SIM is a combination of human resources and computer-based resources and produce a collection of storage, communications, and the use of data for purposes of efficient operations management and business planning. [1] .Drs. Soetodjo Moeljodihardjo in his book "Management Information System" defines SIM is a method for generating accurate information for management of the environment outside the organization and operations within the organization, the goal is to support the decision-making process as well as improve the planning and supervision [2]. SIM is basically `the process of communication in which the input information (input) are stored, and processed to produce an output (output) in the form of a decision on the planning, operation, and supervision [2]. SIM is an information system that is used to present information that is used to support the operation, management, and decision making in an organization [3].

### 2.2 Warehousing

Warehouse is a temporary storage area and taking inventory for operations support for the next operation, to the distribution location or to the final consumer. Warehouse sebagaiberikut function [7]:

- a. Store for a while and wait for their turn in the process.
- b. Monitor the movement and status of goods
- c. Minimizing the cost of movement of goods
- d. Point of balancer flow of goods inventory and warehouse for inventory their advantage is to provide the place for put and protect (of rain), providing timely bespoke (guaranteeing service level), monitor status, as a means of communication with consumers and reduce transportation costs. If the forecast consumer demand will increase dramatically in the period ahead and the limited production capacity of 25, the company can begin to increase production at some previous period and excess inventory or finished goods or raw materials temporarily placed in storage. It required knowledge of warehouse management. Although inventory sufficient, but if without a good warehouse management inventory movement to the next production process

can be inhibited even at the risk can not be used [7].

### 2.3 Warehouse management

Warehousing management goal is to optimize the use of space in the warehouse, streamlining the work of employees and equipment warehouse, providing access to the best inventory for the warehouse employees, and ensure the effectiveness of the movement of inventory / goods in the warehouse [7]. Warehousing management services provided within an operational or production activities, namely [7]:

- a. Facilitate the movement of goods since the arrival of the supplier until the delivery with transport leaving the company to the next process.
- b. Reduce transportation costs through the process of break-bulk, consolidation, cross docking. If the company serves many customers at distant locations, the company could use to transport also delivers to every consumer. To reduce costs, the company can send the finished goods warehouse located close to all the consumers that far.
- c. Facilitate the efficient delivery of goods to consumers, as well as providing security for handling the inventory itself. [7]

### 2.4 Activities Warehouse

Here are some of the activities of the warehouse that [7]:

1. *Receiving*  
(Receiving Goods) activity consisting of the decline in goods from a delivery vehicle, the opening of the package material, examination of the suitability of the material with a list of shipment (packing list), checks the quality of goods, decide the quality of the goods (accepted, rejected, or accepted with the proviso), as well as handling of goods to be stored in the warehouse. The important factor to be considered in the process of receipt of goods which are:
  - a. The number, size, shape, weight, physical nature, timing, and frequency.
  - b. Equipment and facilities
  - c. Person
2. *Pult-away*  
an activity the receipt of goods from the receiving location to the location where the placement of goods. This activity can be done manually by humans themselves or with the help of machines.

3. *storage*  
(Storage) The purpose of storage of goods is to ensure:
  - a. Sufficient capacity and efficiency of space usage storage
  - b. Control of the quality and quantity of material during storage (audit)
  - c. Supply needs for user number
  - d. Neatness and maintenance of premises and storage tool
  - e. Safety of people and the environment around the storage
4. *picking*  
(Intake) These activities include the receipt and processing, locate the placement of goods, putting goods on in storage, taking goods ordered, checking the physical condition and quantity of goods, until the transfer of goods to the shipping department.
5. *Shipping*  
(Packing, Packaging) These activities include packing after being taken in the packing process, after which the goods are delivered to a transport vehicle, consolidation of shipments and goods - goods that would otherwise be sent to the destination), until the delivery documentation preparation activities. [8]

### 2.5 Model Economic Order Quantity

EOQ model is a calculation model to obtain the optimal order quality value of a company. Assuming the value of the demand for a product, the cost of booking, the purchase price per unit is a constant value [8].

One model supplies the most widely used model is the economic order quantity (Economic Order Quantity). EOQ method strive toward minimum inventory levels, lower costs and better quality. Inventory planning EOQ method in a company will be able to reduce the occurrence of out of stock so it will not interfere in the production process within the company and be able to save costs in the company's raw material inventory. With the implementation of the EOQ method is expected to reduce storage costs, saving space, both warehouse and workspace, resolve the problems arising from the many supplies that accumulate thereby reducing the risk that can arise because of excessive inventory in storage or warehouse space. If EOQ models answered questions how many reservations were optimal, then the reorder point (ROP) answered the question when to start holding orders. Bida ROP occurs when the amount of inventory contained in the stock reduced

continue in terms of the production process continues to run, so we have to determine how much the bare minimum inventory level that should be considered so as to avoid shortages. So in other words, the decision when to order is generally expressed in terms of a reorder point (reorder point ROP) inventory level where reservations must be made. The equation for the ROP assume that the demand for and lead time itself is stable. And if you do not like it then required additional inventory that can be called safety stock (safety stock).

## 2.6 Ongoing Analysis System

### 2.6.1 Procedures provision of Raw Materials

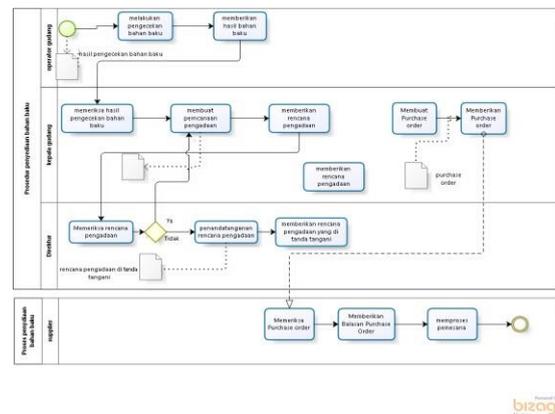


Figure 1 Procedure Provision of Raw Materials

### 2.6.2 Acceptance Procedure Raw Materials

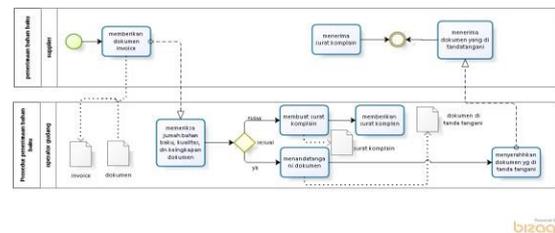


Figure 2 Raw Material Acceptance Procedures

### 2.6.3 Procedures for Removal of Raw Materials

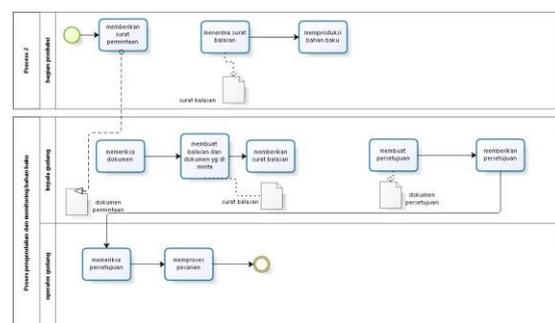


Figure 3 Expenditure Raw Materials



10	Black Tea Latte Bag (8x5) 24 gr	3320	pcs
11	Chocolate Bandrek Bag (8x5) 25 gr	3120	pcs
12	Chocolate Bandrek Plastics (8x5) 25 gr	240	pcs
13	Chocolate Bandrek renteng (12x10) 25 gr	6240	pcs
14	creamer repacking	1760	sachet
15	Bandrek Iced Tea Bags (8x5) 25 gr	4760	pcs
16	Ice Tea Bandrek Plastics (8x5) 25 gr	1040	pcs
17	Sugar White Repacking 8 gr	5400	pcs
18	Green Tea Bags Hanjuang	80	Box
19	Green Tea Latte Bags (8x5) 25 gr	1480	pcs
20	Green Tea Latte Renceng (8x5) 25 gr	3270	sachet
21	Green Tea + Sugar Renceng	2800	sachet
22	Coffee Bandrek Bag (8x5) 31 gr	2360	pcs
22	Coffee Bandrek Plastics (8x5) 31 gr	240	pcs
23	Coffee bajigur Bag (8x5) 31 gr	4040	pcs
24	Coffee bajigur Plastik (8x5) 31 gr	320	pcs
25	Coffee Powder Priangan (1x200) gr	18	Pack
26	Coffee Powder Priangan Renceng 30 g	32 680	pcs
27	Coffee + Sugar Priangan Bags (12x15) 25 gr	657	sachet
28	Coffee + Sugar Priangan Renceng (12x15) 25 gr	640	sachet
29	Hanjuang Pack 12 Plastic flavor	360	pcs
30	Hanjuang Package 9 Rasa Box (9x1) 264 gr	12689	pcs
31	Hanjuang Package 9 Plastic flavor	13840	pcs

32	Packages By - By 9 Taste Bags (9x5)	7320	pcs
33	Sakoteng Bags GR (8x5) 30 gr	9840	pcs
34	Sakoteng Bags (8x5) 30 gr	28 680	pcs
35	Sakoteng Plastic (8x5) 30 gr	16080	pcs
36	Bandrek Special GR bag (8x5) 31 gr	18 768	pcs
37	Bandrek Special Bag (8x5) 31 gr	22 160	pcs
38	Bandrek Special Plastics (8x5) 31 gr	4800	pcs
39	Sari Lemongrass & Ginger (12x10) 20 gr	14400	sachet

The procurement process begins with the purchase of planning activities which determine the class of goods based on expenditures by using ABC analysis. The steps in determining grade goods with ABC analysis is as follows:

1. Calculating the amount of expenditure per year for each unit of the product.
2. Make a list price of each product.
3. Multiplying the number of dispensing with the price to get the value of the investment can be seen in the investment field.
4. Sort the investment value from largest to smallest.
5. Calculating the value of the cumulative investment can be seen in the cumulative investment column.
6. Calculating the percentage of cumulative investment value.
7. Classifying the goods based on the percentage of the cumulative value of the investment can be seen in the class column.
8. If the value of the cumulative frequency from 0 to 80% then it is classified as A. If the range between 80-95% will be classified as B, and when the range between 95-100% will be classified as C.

## 2.8 Functional Needs Analysis

Analysis of functional requirements is an analysis of the functional needs of both the flow of data and information. Functional analysis described in a structured analysis that will be discussed as follows

### 2.8.1 Analysis Database

Analysis of the data base on warehouse management information system using Entity Relationship Diagram (ERD). ERD designed can be seen in Figure 5



## 2.11 Menu Structure Design Head Warehouse

The menu structure of the head warehouse in CV Cihanjuang Core Techniques are the menus that exist at the time of entry into the warehouse management information system. Here can be seen in

Figure 10

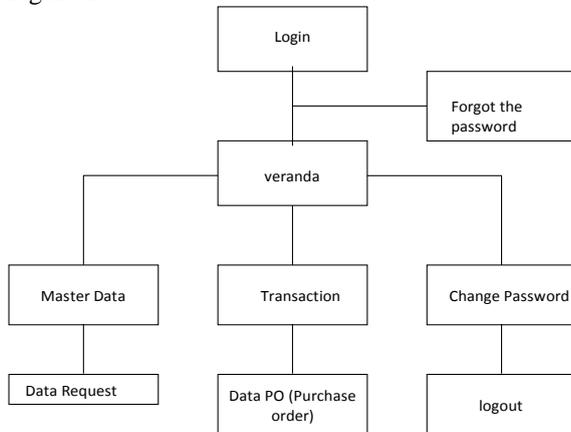


Figure 10 Menu Structure Design Head Warehouse

## 2.12 interface

The design interface is made to describe the look of the program that will be used by the user to interact with the system to be built. The design is based on the interface display both input and output to be generated when the application is implemented

### 1. Login Interface Design

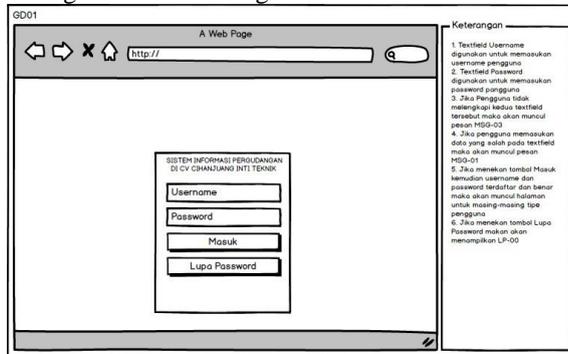
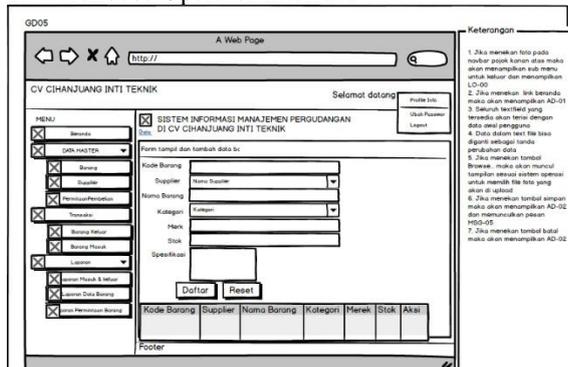


Figure 11 Interface Login

### 2. Warehouse Operator Interface



## Operator Interface Figure 12 Warehouse

### 2.11 testing Systems

Testing the system aims to find errors or deficiencies in the software being tested. Tests conducted to determine the system to be built whether it is feasible to use it or not. Tests performed include yard work Admin, Operator Warehouse, Warehouse Chief, and Director of using a testing strategy blacbox

### 2.12 conclusion UAT

Based on the results of user acceptance testing end user acceptance test has been done by the warehouse operator to the management information system of warehousing CV Cihanjuang core technique, it can be concluded that all processes are running and the system has been accepted by users in CV Cihanjuang Core Techniques such as admin, head warehouse, warehouse operators, and directors. Then the system can proceed to the next stage

### 2.13 Beta testing

Beta testing is testing conducted objectively where tested directly into the field, a company related to the user's satisfaction with the content of the points is the fulfillment of the original purpose of the development of management information systems warehousing CV Cihanjuang Core Techniques and interface of the management information system of warehousing CV Cihanjuang Core such techniques. Researchers perform data retrieval using interview techniques. From the results of these interviews it can be concluded whether the software has been built in accordance with the purpose or not.

Interviews were conducted in accordance with the user in the system, namely the interview to the admin, warehouse operators, warehouse chief, and director. The test is performed on a CV Cihanjuang Core Techniques in order to determine the extent to which the system is built to be a solution and solving problems previously described information

## 3. COVER

### 3.1 Conclusion

Based on test results obtained from studies conducted in the preparation of this thesis as well as referring to the purpose of the study that has been created, it can be concluded that:

1. Inventory management information system that is built has been able to assist the head of the warehouse in CV Cihanjuang Core Techniques in determining the number of bookings or purchases optimal.

2. Inventory management information system that is built has been able to assist the head of the warehouse in CV Cihanjuang Core Techniques in determining when it is appropriate to make a reservation back to the supplier.

### 3.2 Suggestion

Based on the results that have been achieved in building the system InformasiManajemen Pegudangan CV Inti Cihanjuang This technique still has shortcomings, therefore it is advisable to add things that can complement the future that is necessary the further development of this management information system implementation, especially in terms back-up automatically show the overall report for the data, and print reports, so as to reduce the possibility of undesirable things such as data loss due to damage to the computer and so lain.sebagainya

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