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The Analysis of Supply Chain Management System Needs in Sales Transaction Business of PT Digital Satu Media Indonesia

Reonaldy Berikang[1], Yuliana Mose[2], Dedi Sorongan[3]
[1,2,3]*Universitas Trinita, Manado, Indonesia*
naldyhasilg@trinita.ac.id, yulianamose@trinita.ac.id, sorongandedi@trinita.ac.id

Abstract

The planning process for building a system is very important because it is the architecture and the basis for building an information system. How an information system can run effectively and efficiently in it must have a business strategy for the distribution process that must be thought out carefully and follow a structured process to achieve success. Supply Chain Management has the right formula to do just that. The processes in Supply Chain Management are needed in the business processes run by PT Digital Media Satu Indonesia, in this case as a service provider for selling vegetable products which are supplied directly from the agricultural center in North Sulawesi, namely Modoinding District. Company policies and rules can be adopted from the existing concepts in the MRP. The planned system will be analyzed at an early stage, as well as an analysis of how the data flow will work on the system in question. In addition to carrying out systematic digital sales activities, this concept will also help farmers to get clearer directions and goals for their harvests, especially for regular consumers, which will automatically make these business activities and processes better and more perfect.This research was carried out using descriptive research methods, which will produce a product that runs the MRP concept in it.

Keywords
chain management;
planning;system analysis

I. Introduction

This article raises and examines the business in the Indonesian agricultural world, where at this time the business is very promising and has a great opportunity to have benefits for managers. North Sulawesi is a tropical area that has great potential for its people to carry out agricultural activities such as vegetable plantations which have been implemented for a long time, so that one of the areas in this province, more precisely in the southern Minahasa district, is famous for its vegetable plantation area in Modoinding District. Modoinding bedara at an altitude of 1000-2000 meters above sea level with an area of 6,640 ha (Salamba, Malia, and Ardan 2021). In 2018 the ability of this area to supply vegetables to surrounding cities and even outside the province of North Sulawesi was 1.28 million tons. This proves that modoinding is a very large area in terms of vegetable production and is a large vegetable center in Eastern Indonesia, so this area is dubbed the lung of North Sulawesi Province, because this area is dominated by vegetable farming areas, and The profession of the community in this area is as a farmer, due to the fact that a smooth agricultural business

process will guarantee the welfare of farmers (Wahyudi, 2012). This research was carried out because it is based on a very important problem that must be resolved in the sales transaction process between companies farmers and consumers at the research location in the modoinding sub-district. The problem is that the prices given by farmers are far from the shopping prices issued by consumers in traditional markets. This clearly illustrates that the number of illicit distributors must be cut down by implementing a digital information system, as well as implementing a structured product supply method. For this reason, a large farmer group or community is needed to carry out the sales process, and build community strength for the benefit of the farmer group (Suharyono et al, 2021).

The transaction activity of selling agricultural products is currently still carried out conventionally, where the farmer sells the harvest to the buyer who will later sell it back to the consumer who has usually become a third or fourth party. The effect of this conventional transaction makes the price to consumers very high because it has passed several distributors, who are none other than the local community. This has caused losses to farmers because the last distributor automatically gave a price that was many times the previous price, which resulted in high vegetable prices in the market, less demand for farmers and decreased purchases from farmers.

In this study, researchers focused on establishing supply chain management to the problems above. Through companies that have collaborated as partners, researchers will take advantage of elements that exist in the MRP Supply Chain Management concept, such as Production, Inventory, Location, Transportation, and Information so that some of these elements can be used as material for system design analysis in the hope of cutting costs. that must be issued to consumers and break the current long transaction process. According to Priansa in Nusjirwan (2020) "Implementation of communication activities to customers within the company is carried out formally, however, currently there are also companies that practice their communication activities to consumers in an informed manner so that they can explore in-depth information from customers". Regarding the background, this research considers the customer value as an important element for an industry, both in service and manufacture. Moreover, the maximum customer value can be made only if positive influence of marketing and individual environment association does exist (Kusumadewi, 2019). The quality of products that are in great demand by consumers can be seen from several factors including packaging, price, quality, and benefits obtained by consumers (Romdonny, 2019). PT Dmsi is engaged in digital trading that focuses on small farmers, where the current sales process has limitations. The limitations found here are, the product yields are abundant but the relationship to consumers is few, because the price offered to farmers by distributors is very small and not balanced with the capital that has been issued. From the consumer side, also through the analysis of system requirements that apply the MRP concept, they will get prices directly from farmers without going through several distribution processes carried out by other parties. The main element in the MRP that is used is transportation because this element will be regulated evenly through the system that will be used later. Although this concept is already considered good and has a positive effect on business processes, there are still challenges in the failure of MRP implementation due to the lack of skills of each and not complying with the rules that have been set in the MRP (Nyide, 2022).

The information system that is analyzed and used in the supply chain process in this study will be in the form of front end and backend where the users are farmers as supporters of the production element, suppliers as supporting elements of transportation and society as supporting elements of consumers, these three main elements will play an important role in the transaction process which is run digitally, it requires a thorough analysis of system requirements starting from an analysis of database requirements, information system design

flows, and clear system outputs so that they can explain good and efficient business transaction processes towards the planned system design objectives.Effective and perfect Supply Chain Management must be developed that is adapted to the latest conditions, including the application of Information Technology to manage business processes and expedite the expected activity processes (Sumarauw et all, 2015).

Implementing the right supply chain management for companies is a good step to be competitive because social media is currently opening up widely the quality of company or organization services to the community, so that people can see the work performance of each company and make it possible to work with companies that have good quality among them. other companyHsu (2021). The new effects of implementing supply chain management today are not only limited to the progress of business processes but also have an impact on the Triple Bottom Line, namely People, Planet and Profit. The current research is still closely related between the environment, humans and profit, so the application of SCM in this study will have a very influential effect on the intended TBL/3BL.

II. Research Methods

The research method used in this study is a descriptive method, this method is used because it is considered appropriate and can be used as a tool to solve problems as raised at this time. In accordance with the definition, the descriptive method works on the principle of being able to complete describing the object of research objectively, so that the problem of conventional sales transactions when converted to digital can be classified as describing problems to be solved with one object of research output in the form of information technology. According to Nurmalasari (2020) there are three main steps in completing research using descriptive methods, the first is data reduction, the second data display and the third is drawing conclusions. In addition, the use of this method is considered important because this method, if used as best as possible, will produce the widest possible information (Zellatifanny, 2018).

The research carried out is a direct approach to farmers and consumers so that from this approach researchers hear directly every complaint and what needs are needed by farmers and communities who are stakeholders, in solving problems obtained. Provide solutions for the application of information technology, and build the right information system regarding the concept of Supply Chain Management. The research was carried out in Modoinding District as the location for the Farmer Community and Together with Partners who will help solve problems through a digital platform that will be carried out. All aspects of work including data requirements are analyzed as well as possible to get results that can be fully used to solve problems.

Data analysis methods are needed to support the research process. The analysis will use the elements in the concept of Supply Chain Management, these elements will be utilized, but the activity process of each of these elements will be adjusted to the problems found at the research location so that the plan to build the system in question has a clear job map and the method can be used to the process in question.

The elements used in the utilization of this MRP concept are production, inventory, location, transportation and information. Researchers have planned how these elements will be utilized for the realization of the existing Supply Chain concept between farmers and consumers through information technology.

2.1 Production

Modoinding sub-district is a government area with the main regional product being vegetable farming with a total income of 1.28 million tons per year. This is a very large

income generated in this area, especially in the North Sulawesi region. Currently, several communities have been formed in the area. The community's goal is to obtain market price information so that every farmer has the same basic price in it. At first, these farmers only used conventional sales techniques, where the sales process only waited for the first buyer to come and provide a low subscription price, while the seller sold to relatives at a high price, while the price given by the farmer was low.

2.2 Inventory

In this study, the inventory category is the storage of goods to be distributed. Shelters have been provided at each sales location. One of the point of sale locations is located in the city of Manado, where the need for these goods is very high, and orders for production materials to date have greatly increased. So that partners provide guarantees to consumers by means of the availability of goods at any time so that they will not interfere with the supply chain process which is the main factor in the service process. The inventory contained in the partner warehouse can be used by the closest transportation element service provider and can carry out a fast service process. This inventory element is closely related to the information element that has been prepared, because in general the information on this service is managed completely by the information system that was formed, so sales transactions made at any time will affect the amount of stock available. This concept is generally the same as other sales concepts, only in this case study the researcher cuts the lengthy distribution process, which affects the sales process.

2.3 Location

The location of the agricultural center is only focused on Modoinding District, because this area is the largest agricultural asset in North Sulawesi but its management is still conventional, so it involves distributors who are layered and have not used information technology as a sales business tool used in this sales process. . There are two important locations in carrying out the MRP concept in this study, namely the Production Location and the Warehouse Location. Both have different locations but the number of items in this location is one, which is centralized in the database information system. The location element in the supply chain is fully utilized to drive service processes and run businesses that utilize this information technology. The location of the goods storage center is chosen in a strategic place,

2.4 Transportation

In the digital era, transportation services have increased so rapidly, so that transportation technology has become more effective and efficient. The concept of transportation services currently planned is location-based services or Located Base Service, which already exists in transportation services. The delivery service uses two four-wheeled or two-wheeled vehicle facilities, where the driver who brings the order via the application will follow the point according to the digital map service that has been prepared. To take advantage of location-based services, this research utilizes premium Google maps used by the library so that it runs a one-to-one process between providers and consumers. Each courier will have information that is centralized in the service information system.

2.5 Information

To produce precise and accurate information, the information will be managed in digital form through the application of information systems. To run the MRP process supported by a digital system, an information system consisting of two platforms is needed, namely frontend and backend. The front end in question is a mobile-based system that is

integrated with a database, where this system will fully be used by three important stakeholders in this system, namely, consumers as application users and users of goods, drivers as delivery services that act on responses from consumers, and the farming community which provides goods as supporting elements of production. All will communicate with each other, send data for the ordering process, for this front end application to run more practically and efficiently, it would be better to provide it in the form of a mobile application, which is installed on every mobile device used by each stakeholder. Furthermore, the back end system, this system is used by information system managers whose purpose is to control all activities of all who use the system. The activities monitored are within the scope of the MRP elements starting from production, inventory, transportation, information and location. All these aspects will be fully controlled by the backend. This backend system model is a web-based system, which has a database. The database used is the same as the database used in the frontend application, the number of entities, data type attributes and even frontend and backend data relations work in the same database, because the goal is to run business information in it. This banckend application will be held by the system service provider and the access rights have levels, such as user, admin and super admin.

This study makes full use of the concept of Supply Chain Management, but does not completely abandon the process of the role of Information Technology which is dominated in this research. So that researchers have prepared a database needs analysis which will later be applied to the application. And this analysis is the main basis for designing information systems. The tables in the database in question are as follows:

1. Login Table

Table 1. Login Table

Field	data types	Length
ID	int	11
Username	Varchar	25
Password	Varchar	25
Level	Varchar	25

2. Item Data Table

Table 2. Item Data Table

Field	data types	Length
ID	int	11
Item code	Varchar	25
Name of goods	Varchar	25
Unit	Varchar	25
Stock	Varchar	25

3. Driver or Courier Registration Table

Table 3. Driver or Courier Registration Table

Field	data types	Length
ID	int	11
Name	Varchar	25
Address	Varchar	25

E-mail	Varchar	25
Birthdate	date	8
j_kel	Varchar	25
Province	Varchar	25
County town	Varchar	50
districts	Varchar	25
Ward	Varchar	25
environment	Varchar	25
Username	Varchar	25
Pass	Varchar	25
Status	Varchar	25
Code_referral	Varchar	25

4. Farmer/Community Registration Table

Table 4. Farmer/Community Registration Table

Field	data types	Length
ID	int	11
Name	Varchar	25
Address	Varchar	25
E-mail	Varchar	25
Birthdate	date	8
j_kel	Varchar	25
Province	Varchar	25
County town	Varchar	50
districts	Varchar	25
Ward	Varchar	25
environment	Varchar	25
Username	Varchar	25
Pass	Varchar	25
Status	Varchar	25
Community Name	Varchar	25

These tables will be related to each other, each table has different fields according to data needs and these tables can be used for the data transfer process.

2.6 Use Case Diagram of System Usage

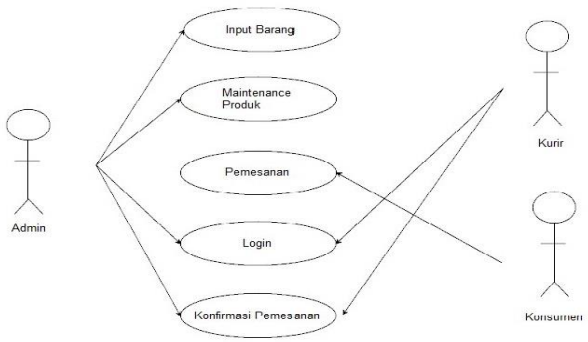

Figure 1. *Diagram of System Usage*

2.7 System Usage Level Drawing

The use case diagram above provides an explanation that there are limitations to the planned use of the system, the planned system is an online system so that the ordering process can be done online, the ordering system can be done online and all transactions can be done online. For the payment process, the system cooperates with banks, so that payments can be made digitally and carried out in digital form.

This research is the initial planning process of system design, all the analysis process until there is testing and implementation of course must be done and in that process the researcher prioritizes one method to monitor the process of making and designing the system, the method that will be used is the waterfall method, the reason for choosing this method is because every sequence of work processes is good to follow to achieve optimal and useful information system results.

III. Discussion

Figure 2. *System Login Interface Tampilan*

The interface in the picture above is one of the parts on the backend, this section corresponds to the level of system use, only contains a username and password on the backend system information system running via an internet browser and requires an internet connection even though it is not too fast to access it. Internet speed capability in Indonesia is very adequate to run existing business processes such as the system planned in this system.

Core Supply Chain Management Business Process

a. Customer Relationship Management

In this process the service provider must seek and open cooperation with stakeholders, especially stakeholders who act as consumers. How the provider must set a standard stock of goods so that it is always available when needed by consumers, and set standard costs that will appear in every transaction process between the service provider and the production team or the service provider with the consumer team. So that it has consistent values, what needs to be developed must be known and mutually agreed upon so that the information provided to each stakeholder becomes valid and does not cause problems with the system used as a vital tool for the movement of business processes. This MRP concept has many developments that bring success because one of these MRP techniques is,Pedro (2012).

b. Customer Service Management

Customer service management is the sole provider of information to each stake holder, all information that will be conveyed to production parties or consumers only through customer service, for example the results of service provider meetings that have a relationship with product delivery policies or other examples such as price increases, so that all Complaints from each stakeholder who run this business process are reported back to CSM and made into the meeting agenda and considered if the complaint feels important to the business process in question. This service must also be able to provide a fast response if there is a problem with the features provided in the system, problematic features must be acted upon immediately so as not to hamper the main business processes run by the system.Sari (2019),therefore we need the right people to serve as customer service at the company.

c. Demand Management

In this process the service provider must be able to balance the needs of the product ordered by the consumer with the ability of the delivery service or the service provider of the goods or the production team. This balance is needed so that the stability of the business process is always maintained and there are no problems with shortages of goods when orders from consumers increase. To see opportunities for increased orders, you can look at the sales data recap that has been formed and carry out the analysis process so that it can predict when demand increases, before it happens, and what actions need to be taken to keep business processes stable from the process. storage of goods from the production team, suppliers and into the hands of consumers.

d. Customer Demand Fullfilment

This process is a step to maintain communication between admins as actors and controllers of Supply Chain Management activities, so one example of this process is knowing how many orders are made by consumers and minimizing the cost of delivery services or creating a discount program for each consumer who purchases a certain amount, with various steps of consideration. With this, a mature business process can be produced.

e. Manufacturing Full Management

This process is usually used in natural activities, natural here means that the product is supplied according to the production schedule, because it follows the supply schedule, while consumer needs are often different so that in order to achieve the distribution target the goods supplied are carried out without careful calculations and do not take into account consumer tastes, which in the end there are products that are not used or not purchased by consumers. This must be taken into account and analyzed as well as possible at this stage, because the products that are focused on in this research are consumables that cannot last long, because the product is in the form of vegetables.

f. Procurement

This stage is the stage that requires communication between the service provider and the production team, which is currently formed as a farmer community, so that the system that will be built later is in accordance with the conditions of the sales process, so that the system when completed is in accordance with the condition of the supplier team. In this important MRP process, regular communication with the Purcashing and Suppliers must be carried out. So that the system to be built is flexible and can adapt to the real needs needed to run business processes on the system in questionMohamed (2018).

g. Product Development and Commercialization

In one business process, there must be a smooth product, this product must be developed in terms of quantity or volume and maintain the stability of its production, so that it is maintained and able to compete with other service providers even though the opponent's business is still in the conventional process.

h. Return

In this process the service provider must make a feature that accepts the return of goods is managed as well as possible, and can be used as a good service standard, so that it becomes the basis for the day ahead to be more professional in responding to increased orders from the public or consumers.

The eight percent supporting successSupply Chain Management above is a step that must be considered by the company as a serious step to implement the concept of Supply Chain Management that will be carried out, if all processes run naturally and normally, then the success of this business will be seen clearly and will increase service professionalism, as well as great material advantages.

IV. Conclusion

Every business process that is carried out is definitely expected to make a big contribution to the management, to achieve this, the business process cannot be run only with simple concepts but must use good analysis and calculations. To achieve good information, it must also use scientific methods such as the sales process carried out by PT Digital One Media Indonesia which plans information systems and business processes in it are regulated by the concept of Supply Chain Management, so that every step in the sales process or business process in it runs according to Rules that exist in a predetermined concept.

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