
Instant Noodle Production Information System Using The Method Supply Chain Management To Overcome Targets Not Achieved

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ABSTRACT

Improvement This research aims to analyze and implement an instant noodle production information system using the Supply Chain Management (SCM) method to overcome the inability to achieve predetermined production targets. In this study, an analysis was carried out on the entire supply chain in the production of instant noodles, which includes raw material suppliers, production processes, distribution and sales. The research method used is a qualitative method. The subjects of this study were instant noodle company employees. The results showed that the application of a production information system using the SCM method could help companies increase the efficiency of instant noodle production. With an integrated information system, companies can gain better visibility on consumer demand, raw material inventory, and production status. This allows companies to carry out more accurate production planning, accelerate production cycle times, and optimize resource use

Keywords: Production information system, Supply Chain Management, Production

INTRODUCTION

In the current era of globalization, competition in world industry and business is becoming increasingly stringent and growing. One way to increase the competitiveness of companies is by increase production efficiency. However, increasing production efficiency does not only cover increased efficiency within the plant alone (Faisal, & Andah, 2019).

But it must also cover the entire process from planning to product distribution. With the development of information technology, then requires that business actors implement and carry out business strategies that will implemented in order to be at the forefront of the business competition. Not only from results production that is produced but also how to apply the results of production to consumers well received, fast and satisfied with the product purchased (Roman, & Andah, 2020).

Currently, many production companies are experiencing problems in the production department where their monthly production results do not reach the predetermined target standards. These constraints are very detrimental both in terms of raw materials, production quality and even labor. For 1 ton of raw materials in the form of wheat flour, tapioca flour and alkaline water must be mixed to produce 1000 cartons of delicious noodles, but they don't produce the production they should. The company previously set a delicious variant of onion chicken noodles for the next 1 month it will produce a target of 1000 boxes. This variant will produce production that is only able to produce 92% or 920 boxes. Therefore it is very detrimental, especially for companies whose production results do not reach the target due to the lack of implementation of a good system and recording of incoming and outgoing raw materials and products so that sometimes errors occur in data input which causes loss of inaccurate data by the company.

Any company can be successful only if there is consistent organizational data management with efficient information systems. An effective information system can provide companies with better planning, decision making, and desired results. By changing customer preferences, business organizations that can come up with new methods and innovative techniques can survive in the market and still respond to customer demands. the application of information systems can provide many benefits in business and assist in controlling internal and external processes. Where this system will make it easy for staff to manage supply chain and production so that production results reach the target according to predetermined standards (Andi, Ansari, & Pandhu, 2020).

Based on these problems, the use of the Supply Chain Management method will help companies overcome production targets that are not achieved. This Supply Chain Management method makes it easier for companies to

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identify and overcome problems that can hinder production by analyzing the underlying causes of the inability to achieve production targets, after that ensuring the availability of adequate raw materials for production, evaluating the current production plan and ensuring that the planning system has been implemented. , then forge strong relationships with supply chain partners and implement effective inventory management strategies to avoid shortages or oversupply. So that production can improve product quality by ensuring that all raw materials and production processes meet predetermined quality standards (Kusuma, & Mahendra, 2018).

Based on the background and problems that have been described, the authors hope to assist the company in overcoming unachieved production targets, besides that it can produce an instant noodle production information system that is precise, effective, efficient, and makes it easier for company staff to manage raw materials and production targets. So the author is interested in taking the title "Instant Noodle Production Information System Using the Supply Chain Management Method to Overcome Unreached Targets".

LITERATURE REVIEW

The information system is a set of components that are interconnected and have a function to solve problems and make decisions called Information Systems. Information systems are used to perform the process of collecting, storing and distributing data or information with the aim of supporting decision making and control within the organization. There is also an alda opinion regarding information systems, which is a combination composed of people, hardware, software, communication networks and data resources that are capable of modifying, collecting and also disseminating information within a group/organization (Alda, 2020).

According to Amalia, a website can be defined as a set of multiple pages, where each page contains digital data in the form of information displayed in the form of text, audio, images, video and similar animations. The website can be accessed via an internet connection (Amalia & Huda, 2020). In Adelheid's opinion, a website is an information page provided via the internet, so that it can be accessed anywhere as long as it is connected to an internet network. Website is a collection of components consisting of text, images, sounds, animations, so it is more of an interesting information medium to visit (Rochman, Hanafri & Wandira, 2020).

Supply chain management is a series of approaches used to effectively integrate suppliers, manufacturers, warehouses and stores so that inventory can be produced and distributed in the right quantities, to the right locations, and at the right time so that the overall cost of the system can be minimized with the goal to satisfy needs and services (Radhi & Hariningsih, 2019).

With the Supply Chain Management method, it makes it easier for companies to overcome problems that can hinder production by analyzing the underlying causes of the inability to achieve production targets, after that ensuring the availability of adequate raw materials for production, evaluating the current production plan and ensuring that the planning system has been implemented. then forge strong relationships with supply chain partners and implement effective inventory management strategies to avoid shortages or excess supply (Kusuma, & Mahendra, 2018).

The quality of finished goods is determined not only by the production process of the goods, but also by the quality of the raw materials and the quality of the safety of the sender. This quality assurance is also a series of long chains that must be managed properly

METHOD

The research method used in this research is Supply Chain Management. This Supply Chain Management method makes it possible to identify and overcome problems that can hinder production so that it can assist in inventory management by optimizing the supply of raw materials and finished products (Kusuma, & Mahendra, 2018).

The research method in collecting data is carried out qualitatively through stages, namely (Suendri, 2019) :

Research Stages

System research stage

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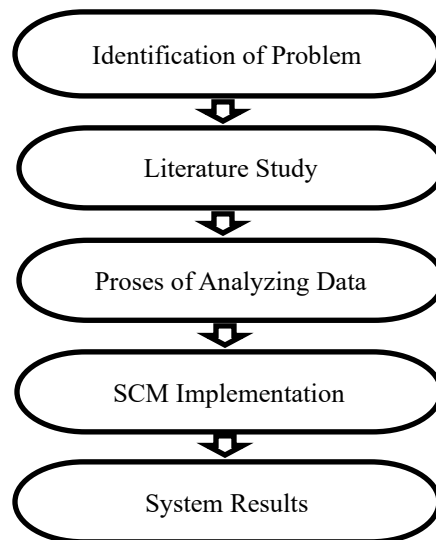


Fig. 1 Research Stages

Identification of Problem

The problem identified in this research is in the production section where monthly production results do not reach the target set by the company so that it is very detrimental to the company both in raw materials, production quality and even labor.

Literature Study

Literature studies, it is carried out by looking for various written sources in the form of archives, journals, and relevant documents per the topic of discussion to be discussed (Ikhwan & Aslami, 2022).

Data Collection Techniques

Several data collection techniques:

Observation

Observation is making direct observations of the problems investigated. At this stage the researcher made field observations by looking directly at the situation and production conditions in the company. Researchers collect the necessary data in accordance with the subject matter discussed by visiting directly the head and employees in the company.

Interview

Interviews are questions and answers orally between two or more people directly with a specific purpose. At this stage the interview researcher was conducted directly (face to face) with the head and production employees with an unspecified number of meetings, depending on the information needed.

System Development Techniques

System development is carried out by means of Waterfall :

Requirements Analysis

This stage is the stage of analyzing the data requirements needed in the process of designing an instant noodle production information system. The required input documents are admin data, monthly production data for all variants of instant noodles and availability of raw materials. Admin data consists of username/id and password, while the interface that will be created is the main page with the admin login menu, then the home page, production target page, raw material page, production page, and production reports.

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Design

After completing the system requirements analysis stage, the researcher designed the system design by applying a use case diagram

Implementation

At this stage after finishing designing, the program is translated into a programming language. The programming languages used are PHP, MySQL, and Visual Code. Then the implementation phase is the result of designing a system that has been designed previously which will be used as a web program.

Testing

At this stage, the system will be integrated and tested as a complete program to ensure that the program meets the existing requirements (Rahmawati, 2021)

Maintenance

This stage is the last process, if the previous stage of the system is feasible to use, then the system installation is carried out. This stage is also interpreted as a form of responsibility to ensure whether the system can run smoothly and also improve system capabilities. (Khairina & Irawan, 2022)

RESULT

Data In this discussion will explain about system design and system implementation. System design is an activity in which the system is built. At this stage an overview is made that aims to approach the interaction between actors and users (Hamizan et al., 2020). Researchers use UML as a reference in designing the system to be made. There are Usecase diagrams, Activity diagrams, and Sequence diagrams which are part of the UML in system design.

Use case diagram is a series in describing the process of the relationship between actors, namely admin and users on the system. Use Case diagrams can be seen in Figure 2.

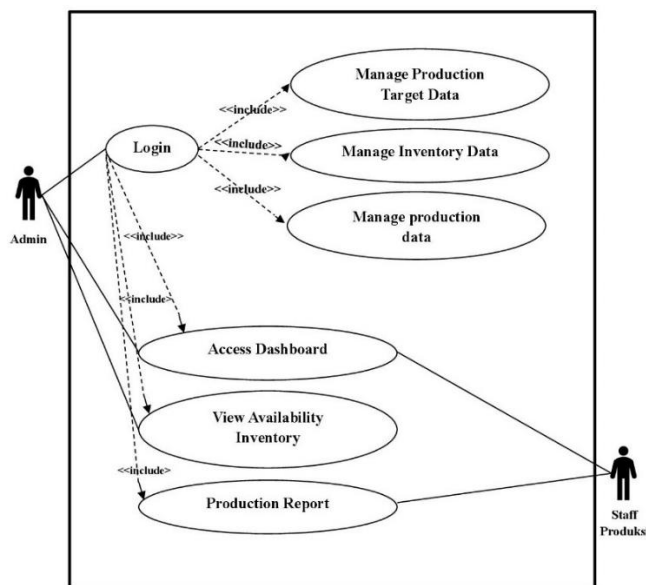


Fig. 2 Use Case

Activity Diagram is a series of activities that users can perform on the system so that the system process as a whole can be understood (Aryati et al., 2022). Here are a few Activity Diagram on system design in this study.

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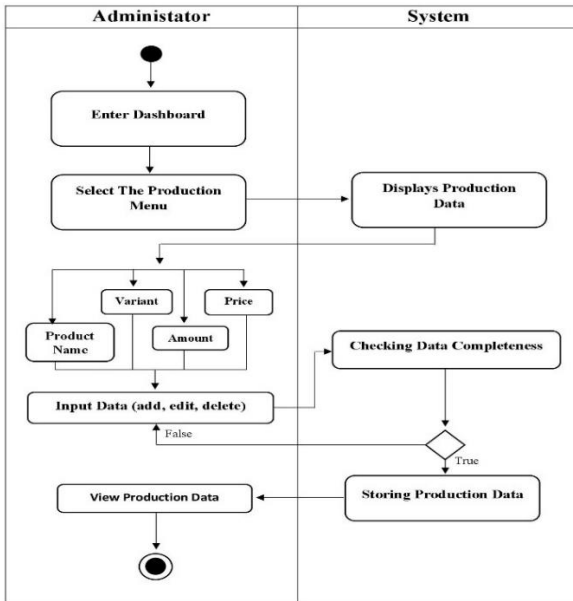


Fig. 3 Data Processing Activity Diagram

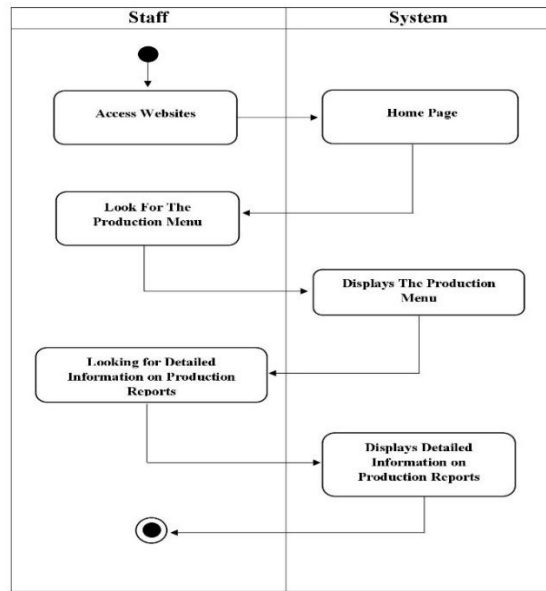


Fig. 4 Information Access Activity Diagram

Sequence Diagram is a representation that describes the relationship of objects in system so as to provide useful information to understand a program (Anjely et al., 2022). Figure 5 below is a sequence diagram.

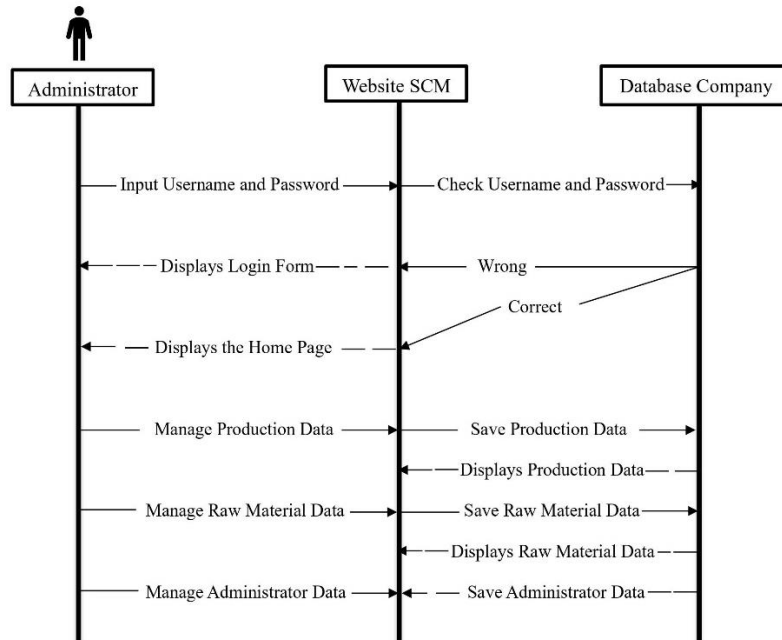


Fig. 5 Sequence Diagram

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Implementation

Table 1. Black Box Testing

No	Testing Section	Testing Skenario	Expected Results	Testing Results	Status
1	Login	Admin enter Username and Password	Main page appears	Main page appears	Success
2	Home Page	User select Home Page	Displays the latest production data	Home page appears	Success
3	Production Target Inputs	Admin select production target menu	Displays the production target menu	Production target input page appears	Success
4	Raw Materials Inputs	Admin select raw materials inputs menu	Raw material data stored	Raw material input page appears	Success
5	Production Inputs	Admin select production inputs menu	Data increase and raw material data is reduced	Production input page appears	Success
6	Report	Admin presses the print report button	System presents a print report	Report view	Print

In Table 1 above, at the end of testing the instant noodle production information system with a black box, no errors or bugs were found in each website application functional testing process. The instant noodle production information system can function properly and can be accessed in the form of a website.

DISCUSSIONS

This production information system will monitor the production progress and achievement of the instant noodle production targets every month. Where this system uses two users i.e. the administrator and production staff, the administrator will do. manage data on the system and production personnel can monitor production reports. In this system there are several features used such as the home page feature which will display the overall data report, the program feature which will display the production data, the raw material inventory feature which will display the incoming raw material flow and output, as well as the production target characteristic that the production process will run after determining how much production it will run each month. The production results will subsequently show the type of instant noodle variant and the number of products that have been produced. In this study, the data required by the system was obtained directly from PT Lestari alam fresh and from interviews with local PT employees. The advantage of this system is not only the monitoring of the production results but also the possibility to optimize and monitor the amount of raw material used in the production process during that monthly period. This monitoring system also uses the waterfall development method so that every flow in the system is made clearer and more detailed.

CONCLUSION

The conclusion of the instant noodle production information system journal is an important tool for PT. Lestari Alam Segar to improve production performance by providing accurate and up-to-date information about production conditions, and the system built allows it to be used to make the right decisions and increase production efficiency. by utilizing supply chain management information technology, the company will be younger and more effective in achieving the desired production target through several features displayed in the application including production target data and raw material data available at PT. Fresh Nature Conservation.

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