IMPLEMENTATION OF E-SCM AS A SOLUTION TO OPTIMIZE SHOE STOCK SUPPLY CHAIN IN GASTI JAYA STORE

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Abstract: In the retail industry, effective supply chain management is essential to ensure stock availability aligns with market demand. Gasti Jaya Store, a growing shoe retailer, faces challenges in optimizing inventory management, often leading to stock surpluses or shortages. These issues can impact operational efficiency and customer satisfaction. To address this problem, this study the implementation of Electronic Supply Chain Management (E-SCM) as a solution to optimize supply chain management. E-SCM enables the integration of technology-based systems for real-time stock monitoring, procurement, and distribution. Using a case study method and a qualitative approach, this research evaluates the effectiveness of E-SCM in enhancing operational efficiency, reducing excess stock, and accelerating the distribution process at Gasti Jaya Store. The findings indicate that E-SCM implementation improves data transparency, speeds up decision-making, and enhances customer satisfaction. Additionally, the system helps reduce operational costs by optimizing inventory management and minimizing the risk of stock imbalances. In conclusion, the adoption of E-SCM can serve as an effective strategy for mid-sized retail businesses to improve their competitiveness and supply chain efficiency.

Keywords: E-SCM; inventory stock; operational efficiency.

Abstrak: Dalam industri ritel, manajemen rantai pasok yang efektif sangat diperlukan untuk memastikan ketersediaan stok sesuai dengan permintaan pasar. Toko Gasti Jaya sebagai salah satu toko sepatu yang berkembang menghadapi tantangan dalam mengelola persediaan secara optimal, yang sering kali menyebabkan kelebihan atau kekurangan stok. Permasalahan ini dapat berdampak pada efisiensi operasional dan kepuasan pelanggan. Untuk mengatasi masalah tersebut, penelitian ini mengusulkan penerapan Electronic Supply Chain Management (E-SCM) sebagai solusi dalam mengoptimalkan manajemen rantai pasok. E-SCM memungkinkan integrasi sistem berbasis teknologi dalam proses pemantauan stok, pengadaan barang, hingga distribusi secara real-time. Dengan metode studi kasus dan pendekatan kualitatif, penelitian ini mengevaluasi efektivitas E-SCM dalam meningkatkan efisiensi operasional, mengurangi kelebihan stok, serta mempercepat proses distribusi di Toko Gasti Jaya. Hasil penelitian menunjukkan bahwa implementasi E-SCM mampu meningkatkan transparansi data, mempercepat pengambilan keputusan, dan meningkatkan kepuasan pelanggan. Selain itu, sistem ini membantu mengurangi biaya operasional dengan mengoptimalkan manajemen persediaan dan meminimalkan risiko ketidakseimbangan stok. Kesimpulannya, penerapan E-SCM dapat menjadi strategi yang efektif bagi bisnis ritel skala menengah untuk meningkatkan daya saing dan efisiensi rantai pasok mereka.

Kata Kunci: E-SCM; efisiensi operasional; persediaan stok.

INTRODUCTION

Fashion is often used as a means for individuals to express themselves and connect with specific times, events, or occasions. The term "fashion" typically incorporates four key components: style, change, acceptance, and taste [1]. One of the most sought-after fashion products is shoes. Shoes play a crucial role in daily life—not only as protection for the feet from sharp objects, heat, cold, and hazardous surfaces but also as a part of fashion and individual identity. Over time, shoes have become an essential aspect to consider, and as the industry evolves, shoe manufacturers continuously compete in innovation, whether in terms of design or color [2].

Gasti Jaya Store is a shoe store that sells various types of footwear, ranging from casual to children's shoes. Established in 2011 and located in Pulau Rakyat Tua, Asahan Regency, the store continues to grow while facing challenges in managing inventory effectively. One of the main challenges is the unpredictable fluctuations in market demand. With a diverse range of products, including sports, formal, and casual shoes, Gasti Jaya Store often struggles to maintain stock availability that aligns with customer needs.

The reliance on conventional inventory management methods, such as manual stock recording, not only takes more time but is also prone to human error. This hampers quick and accurate decision-making regarding when to restock and how much to order. A shortage of certain products can lead to customer loss, while excessive stock increases storage costs and risks financial losses due to unsold items[3]. If this problem is not resolved immediately, Gasti store could lose its competitiveness in an in-creasingly competitive market.

In the retail industry, efficient supply chain management plays a critical role in business sustainability [4]. A common challenge is the imbalance between demand and supply, which can result in stock shortages or surpluses. Therefore, a system that optimizes the supply chain through technological advancements is necessary.

Electronic Supply Chain Management (E-SCM) presents a promising solution for enhancing supply chain efficiency by leveraging information technology [5],[6]. With E-SCM, stock monitoring, procurement, and distribution processes can be automated and conducted in real-time [7]. This study aims to analyze the implementation of E-SCM at Gasti Jaya Store to improve inventory management efficiency. Previous studies have shown that E-SCM implementation has been widely applied across various industries to enhance operational efficiency and supply chain data transparency.

For instance, research by Santoso et al. (2021) revealed that E-SCM systems improve inventory accuracy and accelerate product distribution in the manufacturing sector[8]. Additionally, a study by Rayyan (2024) found that integrating technology into retail supply chains can reduce excess stock risks by up to 30% [9]. Meanwhile, research by Nugroho (2023) highlighted that the adoption of E-SCM in retail businesses still faces challenges related to implementation costs and system integration[10].

Based on previous studies, several research gaps need to be addressed. First, prior research has primarily focused on the manufacturing sector and large-scale retail, while studies on E-SCM implementation in mid-sized retail businesses, particularly shoe stores, remain limited.

Second, most studies emphasize technical aspects without exploring the impact of E-SCM on customer satisfaction and business decision-making. Therefore, this study aims to bridge these gaps by examining E-SCM implementation in shoe store inventory management and analyzing its effects on supply chain efficiency and customer satisfaction [11].

METHOD

This study employs a qualitative, The qualitative research approach is research that is used to investigate, discover, describe and explain a condition or phenomenon by collecting data. Data is collected through interviews with the store owner, operational observations, and analysis of relevant documents[12]. The obtained results are analyzed descriptively to understand the benefits of E-SCM implementation in inventory management.

The research framework is illustrated in Image 1.
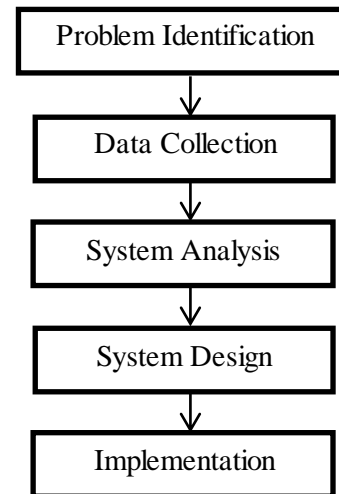
Image 1. Research stages

The research process consists of the following stages:

Problem Identification: Conducting observations and interviews with the store owner to understand inventory management issues.

Data Collection: Gathering data on transaction volumes, stock levels, and inventory management methods used before E-SCM implementation.

Table 1. Shoe Product Data From Various Suppliers

No	Product	Stock	Supplier
1	Black School Shoes	693	Nauren Collection /Naura
2	Brown Women's Flats	505	
3	White Women's Flats	453	
4	Black Women's Flats	582	
5	Red Women's Flats	783	
6	Black Men Sneakers	440	Berkah Jaya /Erwin
7	Grey Men's Sneakers	515	
8	White Men's Sneakers	319	
9	Brown Men's Sneakers	403	
10	Pantofel	641	

No	Product	Stock	Supplier
11	White Slip On	483	
12	Brown Slip On	525	Kobati Jaya /Riki
13	Grey Slip On	460	
14	Black Slip On	202	
15	White Women Sneakers	306	
16	Black Women Sneakers	732	Indah Jaya / Hendra
17	Pink Women Sneakers	425	
18	Gray Women Sneakers	456	

System Analysis: Evaluating the existing supply chain management system at Gasti Jaya Store, including its strengths and weaknesses.

System Design: Developing an E-SCM model to be implemented for optimizing the supply chain follows the waterfall model—a linear and sequential software development approach where each phase is completed in order. This system utilizes PHP as the programming language and MySQL for database management to achieve a goal tailored to the needs of an electronic supply chain management process at Toko Gasti Jaya..

Implementation: Testing the E-SCM application on a small scale to assess its effectiveness.

RESULT AND DISCUSSION

Flow of New Information Systems

The proposed system analysis is an enhancement of the existing system, aimed at improving business process efficiency and effectiveness. The flow of this new information system is expected to bring better improvements than before. In the proposed system, the process begins when a customer arrives to purchase goods and is assisted by the sales admin in processing the transaction. The admin then enters the customer's data and the purchased items into the sales system. Once the total price is determined, the customer makes a payment to the admin to complete the transaction, after which the admin prints and hands over the sales invoice along with the purchased items. Subsequently, the admin generates a daily sales report and submits it to the management of Toko Gasti Jaya for evaluation.

For stock management, when shoe inventory reaches the minimum threshold, the system automatically notifies the admin to process an order with the supplier, including sending proof of transfer according to the total purchase amount. The supplier then verifies the transfer proof and confirms the received order. Additionally, the supplier may offer new products to the admin, who has the option to approve or decline the offer. Once the goods are received, the admin records the incoming stock, prints a goods receipt report, and submits it to the store management. Finally, the management of Toko Gasti Jaya reviews the stock report to ensure sufficient product availability for the store's needs.

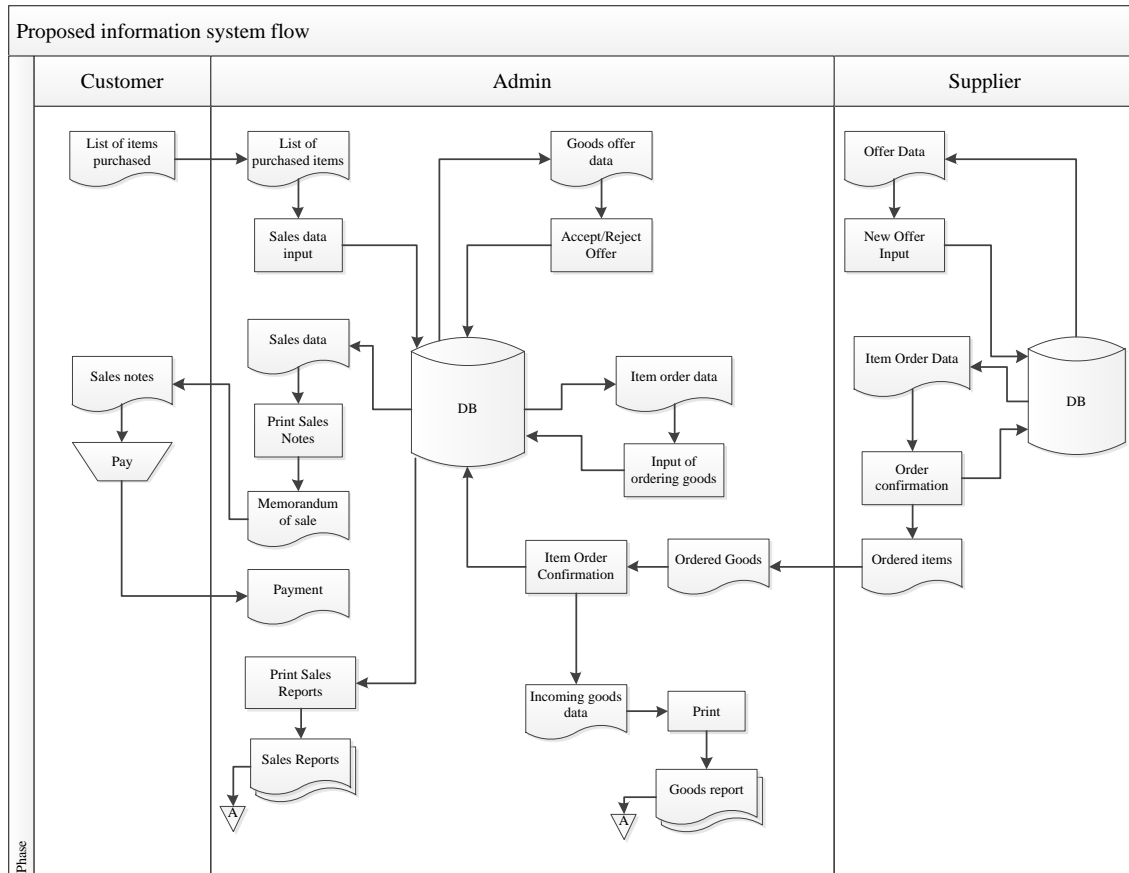The description of the new information system flow can be seen in the image 2.

Image 2. New Information Systems Flow

System Implementation

The implementation phase details the results of the analysis and design discussed in the previous chapters. In this stage, the designed system is deployed and optimized for operational use, ensuring it meets the intended requirements effectively.

Image 3. Admin Home Page View

On the main page interface, the

Admin can manage various functions, including supplier data, inventory data, new product offers, order management, incoming goods data, and password updates. On this page interface, the Admin can manage product data, including editing, deleting, and printing.
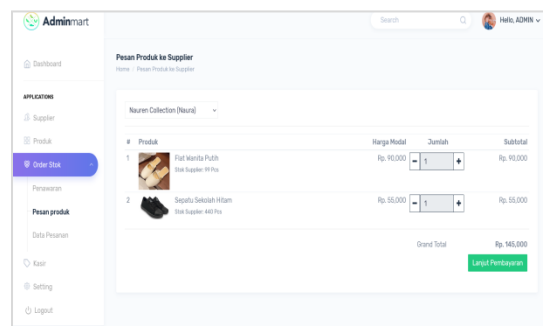
Image 4. Admin Page View Processing Product Data

The product order data report display is a page that displays incoming

goods data from suppliers for later printing.

Image 5. Product Order Data Report View

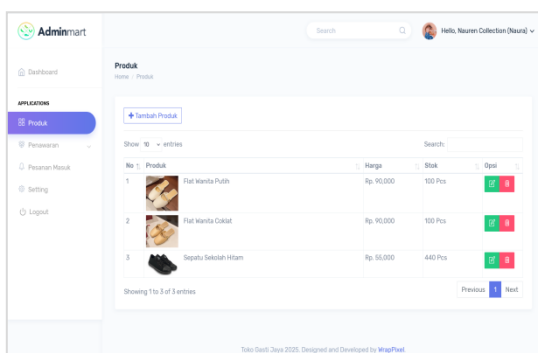On this main page display, Suppliers process orders, view order data, and provide offers for new goods.
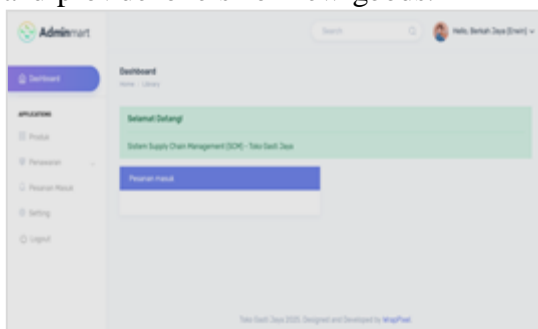
Image 6. Supplier Home Page View

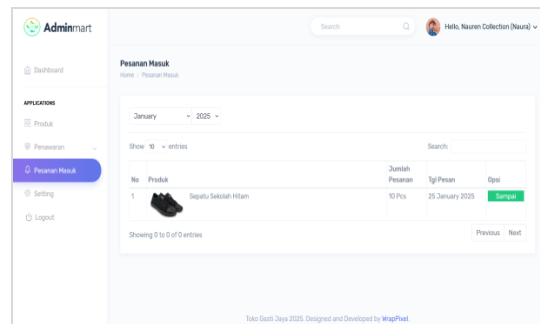On this page display, Suppliers can process product data such as editing, deleting and printing.

Image 7. Supplier Page View Processing Product Data

On this main page display, Suppliers can process orders for goods from the

Gasti Jaya warehouse.

Image 8. Supplier Page View Processing Orders

On this page display, the Supplier inputs a new product offer to be offered to the Gasti Jaya Admin.
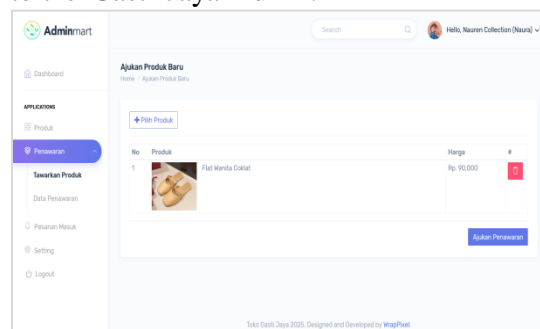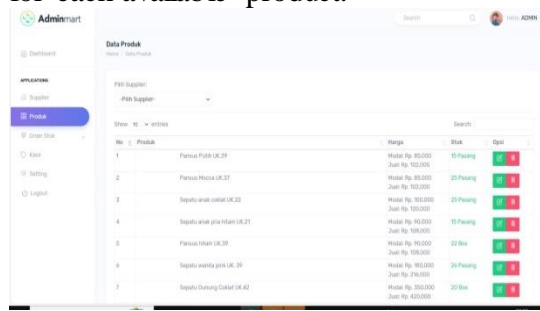

Image 9. Supplier Page View Input New Item Offer

On the product stock data display, it functions to display product availability data, selling prices, and purchase prices for each available product.

Image 10. Shoe Product Data From Various Suppliers

Table 2. Efficiency Comparison

Aspects	Before Implementation of e-SCM	After Implementation of e-SCM
Sale	- Sales are recorded manually using notes or ledgers. - The process of monitoring stock and sales is slow.	- Automated sales system integrated with stock. - Real-time and more efficient sales monitoring.
Financial Reporting	- Manual financial reporting and time consuming. - High potential for human error.	- Automated and more accurate financial reporting. - Reports can be generated in a short time.
Administration	- Stock and transaction administration is done manually. - Limited customer and supplier data management.	- Management system that automates the management of stock, customer and supplier data. - Integrated and easily accessible data.
Stock Management	- Stock is often not monitored accurately. - Stock procurement is based on estimates or manual observations.	- Real-time stock monitoring. - Automatic procurement based on demand and available stock data.
Purchase Process	- The purchasing process is done manually - Potential errors in ordering goods.	- Automatic purchasing process with direct ordering of goods connected to sales and stock data. - Reduce errors and increase efficiency.
Shipping Process	- Delivery of goods to suppliers is done manually and separately.	- The process of sending goods to suppliers is integrated faster and more transparent.
Service	Customer and supplier services are done manually only using WhatsApp	- Speed up responses when there are requests from suppliers or customers

CONCLUSION

The implementation of web-based E-SCM has been successfully developed as an information system that functions to help Toko Gasti Jaya in managing and controlling shoe stock more effectively and in real-time. The procurement process between Suppliers and Toko Gasti Jaya becomes more structured, ordering goods directly to Suppliers who have committed to providing stock on time, so that product availability for consumer demand is maintained.

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