

Implementation of SCM System in Distribution and Stock at Ozan Glass Store

Mufti Hafiz^{1*}, Nurwati², Abdul Karim Syahputra³

^{1*,2,3} Information Systems Study Program, Faculty of Computer Science, Universitas Royal, Asahan Regency, North Sumatra, Indonesia

Email: hafizgokil13@gmail.com^{1*}, nurwati763@gmail.com², abdulkarim.syahputra@gmail.com³

Article history:

Received May 31, 2026

Revised June 16, 2026

Accepted June 18, 2026

Abstract

The increasingly rapid development of the business world requires business actors to be able to manage their operational activities more effectively and efficiently. In this study, problems that often occur at the Ozan Glass Shop, such as the process of managing product and inventory data, which is still carried out simply, so that there is often a discrepancy between stock data and actual conditions. The unintegrated inventory monitoring process also makes it difficult to control stock levels and has the potential to cause shortages or stockpiles of goods. These conditions cause the available information to be less than optimal as a basis for decision making, so that the implementation of a Supply Chain Management (SCM) system is needed to improve the effectiveness of inventory management and product distribution. In addition, through the main discussion carried out in this study aims to be able to understand the process of product distribution from suppliers to the Ozan Glass Shop and its obstacles, determine the implemented stock management and monitoring system and analyze distribution and inventory to improve operational efficiency and reduce problems that occur in the store's business activities. Based on the overall description in this study, the author can conclude that the implementation of the Supply Chain Management (SCM) system at the Ozan Glass Shop has succeeded in improving the effectiveness of inventory management and product distribution. Before the system was implemented, operational processes were still carried out manually, resulting in frequent stock data discrepancies, delays in information, recording errors and difficulties in monitoring order status and distribution. This research resulted in a web-based SCM system capable of integrating stock management, orders, procurement, and distribution within a single platform. Implementation results show that the system can provide real-time inventory information, improve data accuracy, accelerate administrative processes, and facilitate product distribution monitoring. Furthermore, the system is capable of generating more structured and informative reports, supporting faster and more accurate decision-making. The system's implementation also resulted in increased operational efficiency, reduced recording errors, and improved customer service quality.

Keywords:

SCM; Product Distribution Process Improvement; Product Stock Inventory Control; Operational Efficiency; Ozan Glass Store.

1. INTRODUCTION

The increasingly rapid development of the business world demands that business actors be able to manage their operational activities more effectively and efficiently (Beras et al., 2024). Increasingly fierce competition, particularly in the small and medium enterprise sector, forces business actors to focus not only on increasing sales but also on how the distribution process and product inventory are carried out. Poor

management can lead to various problems, such as delays in product availability, stock discrepancies, and less than optimal customer service (Abdillah et al., 2025).

Supply Chain Management (SCM) is a concept that plays an important role in supporting the smooth operation of a business, related to managing product flow from suppliers to in-store availability to meet customer needs (Scientific & Educational, 2023). With good distribution and stock management, business owners can ensure product availability, reduce the risk of shortages or stockpiling, and improve overall operational efficiency (Wangsa & Leo, 2025).

Ozan Glass Shop is a business selling glass cabinets and various other glass products located in Tanjungbalai City. The store offers a wide variety of products, both in terms of type and model, requiring effective inventory management (Cv et al., 2025). The decline in sales in January and February was allegedly caused by distribution delays and suboptimal inventory management. In March, sales increased again as stock availability improved (Abadi et al., 2026).

Overall, this condition indicates that the distribution and stock management processes affect sales, so the implementation of Supply Chain Management (SCM) is necessary to improve the effectiveness of store operations. Supplier data from Ozan Glass Store shows that Ozan Glass Store collaborates with four suppliers to meet its stock needs. These suppliers consist of PT Mulia Glass, Pelita Glass Store, Intan Jaya Galsindo Glass & Aluminum Store, Sinar Buana Store, and PT Kimia Nusantara. (Masyitho et al., 2023). Each supplier has a different delivery schedule, typically on Sundays, Wednesdays, Mondays, and Fridays. Furthermore, the ordering process is conducted through two methods: direct ordering and telephone ordering. Each order transaction also has a distinct order identifier, ranging from PO001 to PO005. This supplier data indicates that Ozan Glass has a scheduled procurement process, thus supporting smooth distribution and stock availability in the implementation of Supply Chain Management (SCM) (Abadi et al., 2026).

However, in practice, Ozan Glass still faces several challenges related to product distribution and inventory management. Product distribution from suppliers does not always run according to the expected schedule, impacting stock availability in the store. Furthermore, product inventory recording and monitoring are still carried out in a rudimentary manner, resulting in frequent discrepancies between recorded stock data and actual product conditions. This situation makes it difficult for the store to control product inventory and has the potential to disrupt smooth store operations (Rahayu et al., 2024).

The Supply Chain Management (SCM) analysis system at Ozan Glass Store was developed using the PHP programming language and MySQL database to address problems that occur in the distribution process and product stock management. The use of PHP aims to manage data in a computerized manner, starting from recording incoming products to monitoring stock availability in the store, while MySQL is used as a data storage place so that it is neatly arranged and easily accessed (Margolang, R. Y. S., et al., 2026). With this system, the store can know the condition of product stock more clearly and accurately, thereby reducing recording errors that previously often occurred. The implementation of this system is expected to help Ozan Glass Store in improving the product distribution process and increasing the effectiveness of stock management to support the smooth operation of the store (Saragih & Saragih, 2025).

Furthermore, this study aims to understand the current product distribution process from suppliers to the Ozan Glass Store and the challenges frequently encountered during its implementation. It also aims to understand the product inventory management system implemented at the Ozan Glass Store, particularly in terms of recording and monitoring product availability. Furthermore, it aims to analyze the distribution and inventory management processes at the Ozan Glass Store to help improve operational effectiveness and minimize potential problems.

Based on these problems, an analysis is needed that can help Ozan Glass Shop in understanding and improving the distribution process and management of ongoing product stock. Supply Chain Management analysis is expected to provide an overview of the product distribution flow, stock management and obstacles faced in the process. With the SCM analysis, Ozan Glass Shop is expected to be able to increase operational effectiveness and efficiency, maintain product stock availability, and improve the quality of service to customers.

2. RESEARCH METHOD

The research method section is an important stage in a study that is used as a guideline to obtain accurate and relevant data and information related to the problem being studied. This method is used to evaluate the distribution process and product stock management at the Ozan Glass Store based on data obtained from store operational activities. Through a structured approach, this study aims to describe the condition of the running system, identify problems that occur and design appropriate solutions to improve distribution efficiency and inventory control. The methods used include identifying problems, determining objectives, collecting data, evaluating data, testing systems, and designing systems tailored to the needs and characteristics of store operations (Putra et al., 2022). And based on this, the research framework used in this study includes the following description and explanation.

2.1. Identifying the Problem

This stage was conducted to identify problems that occurred in the process of managing product and stock data in stores that were still not running optimally, as evident from the frequent discrepancies between recorded data and actual conditions in the field. Furthermore, the process of monitoring stock availability was still carried out in a simple manner, making it difficult for stores to accurately determine stock levels and potentially causing problems such as product shortages or stockpiling. This condition was further exacerbated by the lack of implementation and analysis of structured Supply Chain Management (SCM), so that product and inventory management did not have a clear and systematic basis to support the process of appropriate and effective decision-making (Niskala & Persona, 2024).

2.2. Determining Goals

This stage aims to comprehensively understand how the product distribution process from suppliers to the Ozan Glass Store currently operates, including identifying various obstacles that frequently arise in its implementation. Furthermore, this research also aims to understand the product stock management system implemented, particularly in terms of recording and monitoring stock availability. Furthermore, this research is directed at analyzing the distribution process and stock management in more depth, so that it can provide appropriate solutions to improve operational effectiveness and minimize various problems that occur in the Ozan Glass Store's business activities (Burhanudin et al., 2025).

2.3. Data Collection Technique

The data collection techniques in this study were conducted systematically to support the implementation of Supply Chain Management (SCM) in distribution and stock management at the Ozan Glass Store. The data collection techniques used included direct observation of the store's operational processes, particularly in recording product data and monitoring stock, which were still carried out in a simple manner. In addition, documentation data was collected in the form of product codes and names, sales data or monthly stock movements from October to March, and supplier data containing delivery schedules, order forms, and order identities. This data was used to understand distribution patterns and the level of product availability. Furthermore, interviews were conducted with relevant parties to gather information regarding obstacles faced in stock management and distribution. By combining these three techniques, this study was able to obtain accurate and relevant data to analyze problems and design a more effective and structured SCM system.

2.4. Data Analysis Techniques

The data analysis technique in this study used a qualitative descriptive approach. Data obtained through observation, documentation, and interviews were systematically analyzed to identify problems occurring in the distribution process and inventory management. The analysis began with collecting and categorizing data related to stock recording, inventory movement, and the distribution process taking place in the store. Next, a comparison was made between the recorded inventory data and actual conditions in the field to determine the causes of data discrepancies, stock shortages, and stockpiling. The interview results were used to strengthen the findings regarding operational constraints faced in inventory management and product distribution. The Supply Chain Management (SCM) concept was then applied as the basis for analysis to evaluate the flow of goods and information at each stage of the supply chain. Through this analysis, a clear picture of the current system was obtained and recommendations for improvements were made that could increase the effectiveness of distribution and inventory control at the Ozan Glass Store in a more structured, accurate, and efficient manner (Rommy, L., 2025).

2.5. Data Evaluation

Data evaluation in this study was conducted by reviewing product data, sales data, and supplier data to obtain a comprehensive overview of inventory management and distribution conditions. Based on the product data, which consists of 16 types of products, it is known that each product has a different level of demand. From the sales data for the period October to March, it can be seen that Mirror Glass (PRD013) and Window Glass (PRD016) are the products with the highest demand, while Wardrobes (PRD010) have the lowest demand. These results indicate the need for more targeted stock control to prevent shortages or stockpiling of goods. In addition, supplier data shows that there are five suppliers with different delivery schedules and ordering methods, so good coordination is needed in the procurement process. Based on the results of problem identification, data collection techniques, and analysis techniques that have been carried out, this evaluation shows that the implementation of SCM can help integrate product, sales, and supplier information in a more structured manner (Rahma Diffa, R., et. al., 2026).

2.6. Software Used

In this study, the software was used to support the analysis, design, and development of a system capable of addressing the problems of stock management and distribution, which are still carried out in a simple manner. The operating system used was Windows 11 due to its stable performance, modern interface,

and support for various system development applications. The program code writing and development process was carried out using Visual Studio Code, a lightweight, flexible text editor that supports various programming languages. To design the system model, process flow, and diagrams depicting the relationships between SCM components, the Draw.io application was used because it facilitates the creation of structured and informative diagrams. Furthermore, the user interface (UI) was designed using Balsamiq Mockups so that the system design could be clearly visualized before the implementation phase. Meanwhile, XAMPP was used as a local web server that provides Apache and MySQL services to run and test the developed system. This software combination supports the process of building an integrated SCM system, enabling more effective, accurate, and efficient stock management and distribution at the Ozan Glass Store (Basirun et al., 2022).

2.7. System Design

The system design in this study was conducted to address the problems of stock data inconsistencies, delays in inventory information, and the manual distribution process. In the current system flow, stock recording, ordering, and distribution management are still carried out simply, which risks causing recording errors and difficulties in monitoring stock availability. Therefore, a new system flow is proposed that integrates product, stock, supplier, ordering, and distribution data into a single SCM-based system so that information can be obtained quickly, accurately, and in real time. The system design is supported by UML (Unified Modeling Language) to describe user needs and interactions with the system, Flowcharts to explain the sequence of system work processes in a structured manner, Data Flow Diagrams (DFD) to map data flows between processes, and Entity Relationship Diagrams (ERD) to design database structures and relationships between entities. With this integrated design, the proposed system is expected to improve the effectiveness of stock and distribution management, minimize data errors, and support more accurate decision-making at the Ozan Glass Store (Riyadi & Manan, 2022).

2.8. System Creation

The system development in this study was based on the results of problem identification and system design that had been previously developed. The system was developed to address the problems of stock data discrepancies, difficulties in monitoring product availability, and ineffective distribution and ordering processes to suppliers. The system development process was carried out by implementing the SCM concept that integrates the management of product data, stock, suppliers, orders, goods receipts, and distribution in one centralized application. The system was built using the PHP programming language with the CodeIgniter 3 framework because it has an organized, lightweight development structure and supports the implementation of the Model-View-Controller (MVC) concept, thus facilitating application management and maintenance. Meanwhile, MySQL is used as a database to store all information related to products, inventory, suppliers, ordering transactions, and distribution in an integrated manner. Through this combination of technologies, the system is able to produce more accurate stock information, accelerate the data management process, and support more effective decision-making in managing distribution and inventory at the Ozan Glass Store (Monalisa & Apyarin, 2021).

2.9. System Testing

System testing is carried out to ensure that the designed and built system functions according to user needs and is able to overcome problems found during the problem identification stage. Testing is focused on all main features of the system, including product data management, stock management, supplier data, ordering process, goods receipt, distribution, and report generation. The testing process is carried out using the Black Box Testing method, which tests each system function based on the input and output generated without considering the program code structure. Through this testing, it can be determined whether each feature is able to run according to the business processes that have been designed in UML, Flowchart, DFD, and ERD. The test results show that the system built using the PHP Framework CodeIgniter 3 and MySQL database is able to manage data in an integrated manner, display stock information accurately, and support the distribution and ordering process of goods more effectively (Salsadilah, N., Maharani, D., & Rahayu, E. (2025).

3. RESULTS AND DISCUSSION

The results and discussion section is the core of the research, presenting the findings obtained after the data processing and analysis process was carried out. In this study, the results presented relate to the implementation of the Supply Chain Management (SCM) system in the distribution and stock management process at the Ozan Glass Store. Through the implementation of the designed system, this study reveals various changes that occur in the distribution and inventory control system, both in terms of efficiency, information accuracy, and ease of decision-making. The discussion is carried out in depth by linking the

results obtained with previously identified problems, so that it can be seen to what extent the SCM system is able to provide solutions to the obstacles faced (Rahmadani, 2025).

3.1. Analysis of the Running System

An analysis of the current system at the Ozan Glass Store was conducted to determine how the distribution process from suppliers to inventory management currently operates. This analysis phase aims to understand the workflow of the current system and identify any challenges in the distribution and inventory control process. Analyzing the current system reveals ineffective parts of the process, which can then serve as the basis for designing a better system.

In addition, the following is the process of the information system flow that is customers come to the Ozan Glass Shop to see and choose the products to be ordered, customers submit orders to the shop owner according to their desired needs, the shop owner receives orders from customers and records the orders in the order notebook manually, after the order is recorded, the shop owner checks the availability of stock in the shop, if the stock is available, the shop owner gives orders to employees to prepare products according to customer orders, if the stock is not available, the shop owner orders materials from the supplier, the supplier receives orders for materials from the shop and prepares the requested materials, the supplier sends the prepared materials to the Ozan Glass Shop, after the materials are received, the shop owner gives orders to employees to prepare products according to customer orders, employees prepare products based on orders that have been received from the shop owner.

After the product is finished being prepared, the employee hands over the product to the customer, the customer receives the product that has been ordered from the Ozan Glass Shop, the customer makes payment for the product that has been received, the employee records the sales transaction into the sales record as an archive and material for making sales reports and the sales record is stored as a document used to prepare sales reports manually. The following is an overview of the current process flow, Figure 1.

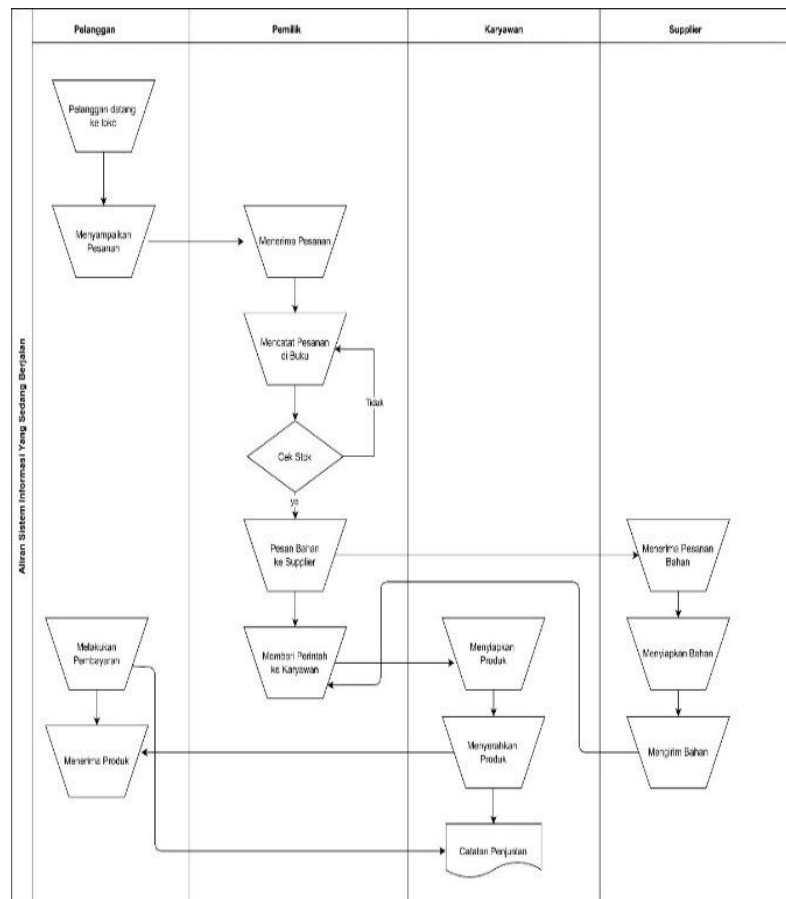


Figure 1. Current System Flow

3.2. System Requirements Analysis

System requirements analysis is a crucial step in developing a Supply Chain Management (SCM) system for distribution and inventory at Ozan Glass Store. This section aims to identify user needs and determine the functions that must be available within the system. This stage is based on the results of problem identification that indicate obstacles in inventory management, goods distribution processes, and data processing that are still carried out manually. Through system requirements analysis, data, processes,

and information requirements can be determined to support more effective inventory and distribution management. The results of this analysis serve as the basis for designing a system capable of integrating product, supplier, stock, order, and distribution data to produce accurate, fast information and support optimal decision-making.

In addition, the following is the process of the information system flow that starts from the Customer section who logs into the system, the customer then enters the View Product menu to see the list of available products, after selecting the product, the Customer inputs the Order into the system, the customer continues by making a Payment for the order that has been made, after the customer inputs the order and pays, the process switches to the Admin section who logs into the system, the admin carries out the Manage Product task by inputting Products & Stock so that the data in the system is always updated, the admin then enters the Manage Customer Order menu to process orders received from previous customers, the admin performs Payment Verification to check the money or proof of transfer sent by the customer, enters the Valid Payment decision menu? If the payment turns out to be "No" valid, then the automatic flow returns to the Payment Verification process to be re-checked, if the payment is declared "Yes" (valid), the admin will proceed to the Order Process stage, which includes the Production & Delivery process.

After the order is processed and sent by the admin, the Customer will receive an Output in the form of a changed Order Status to track their goods, at the end of the workflow, the Admin system produces an Output in the form of a Sales Report and Stock Report, meanwhile in the raw material section, the Supplier logs into the system to monitor production needs, the supplier enters the View Raw Material Order menu to see a list of raw material requests needed by the production party, the supplier confirms the order to approve the request, the supplier then sends the Raw Material, where this delivery data is directly sent and stored into the SCM Database located in the center of the system, on the other hand, the Agency Owner also logs into the system to monitor the running of the business, the Agency owner then accesses the View Dashboard page to see a summary of general business performance, the Agency owner then accesses the View Report menu, whose data is automatically pulled from the SCM Database center and the flow ends when the Agency Owner gets an Output in the form of a Printed Sales Report as a reference document for the agency's development. The following is an overview of the proposed information system flow, Figure 2.

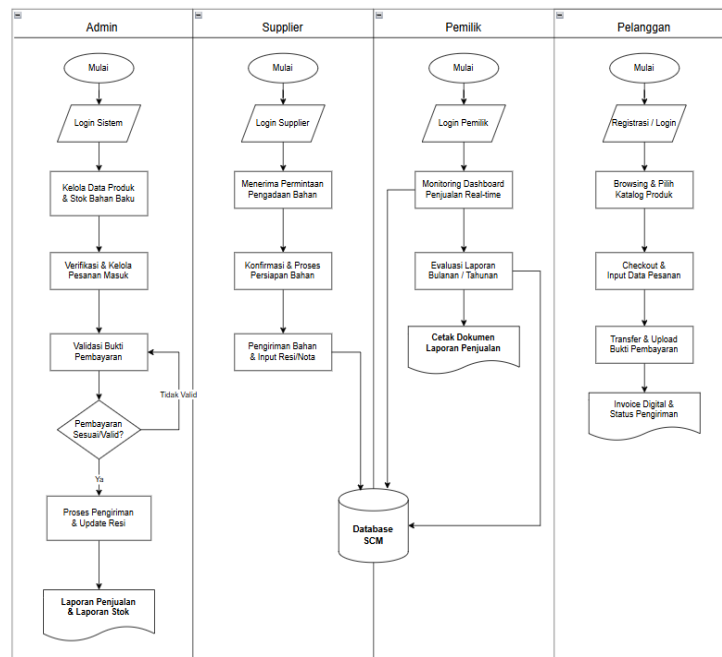


Figure 2. Proposed New Information System Flow

3.3. Comparison of Analysis Results of Current System and Proposed System

Based on the comparison between the existing system and the proposed system in this study, it can be seen that the existing system still relies on manual processes for order management, stock recording, ordering goods from suppliers, and preparing reports. This condition causes a slow flow of information, potentially leading to recording errors and making it difficult to accurately monitor stock availability. Furthermore, coordination between the store, customers, and suppliers is not yet integrated, resulting in the distribution process often taking longer. In contrast, the proposed information system applies the concept of Supply Chain Management (SCM), which is able to connect all parties involved in a single integrated system. Through this system, the processes of product ordering, stock management, raw material procurement, transaction verification, and report generation are carried out automatically and stored in a centralized database. Inventory information can be accessed in real time, facilitating faster and more accurate decision-

making. In addition to improving operational efficiency, the SCM system also strengthens distribution control, reduces the risk of shortages and excess stock, and produces more accurate and easily monitored reports. Thus, the proposed system provides more effective and structured performance and is able to support improvements in service quality and operational sustainability at the Ozan Glass Store.

3.4. Use Case Diagram

A use case diagram is a diagram used in system modeling to illustrate the interactions between users (actors) and the system being developed. This diagram shows how actors interact with various functions, or use cases, within the system. Each use case represents a goal or activity performed by an actor in system development.

In addition, the following is a description of the proposed information system flow. Which actors can access the system will be explained through a use case diagram flow description, Figure 3.

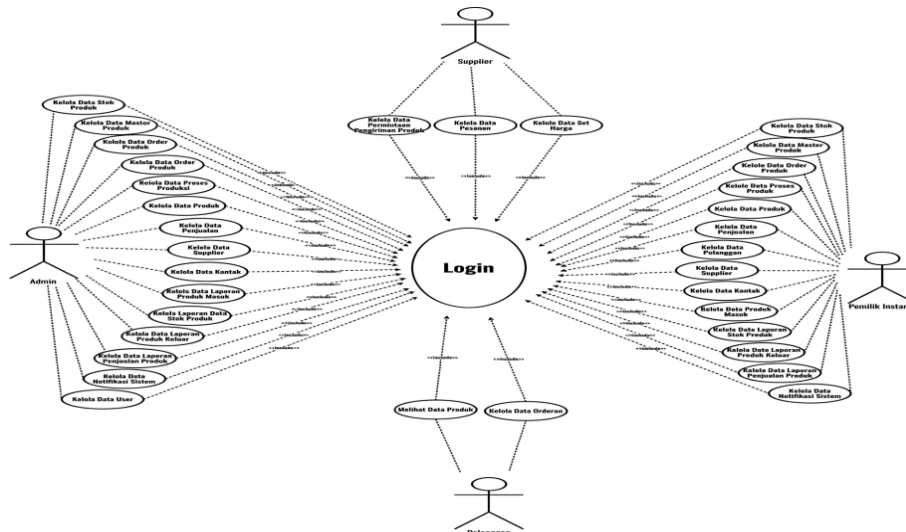


Figure 3. Use Case Diagram of SCM System

3.5. System Implementation

System implementation is the stage of applying the results of the analysis and system design that have been carried out previously. At this stage, a prototype Supply Chain Management (SCM) system with the Economic Order Quantity (EOQ) method began to be implemented to assist the process of managing the inventory of decorative materials at Rahani Homedecor. This system was developed web-based using the PHP programming language with a MySQL database and run through the XAMPP web server. Through this system, the process of recording goods data, supplier data, and incoming goods transactions can be done computerized, making it easier for users to manage inventory data more quickly and accurately. The following are the results of the system design.

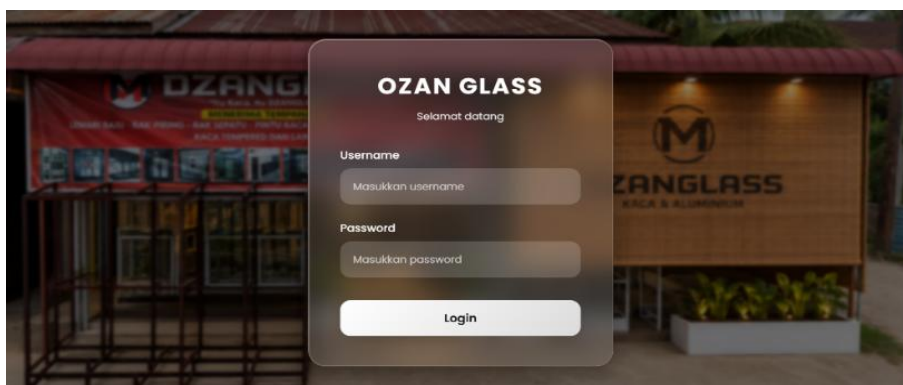


Figure 4. Login Page View

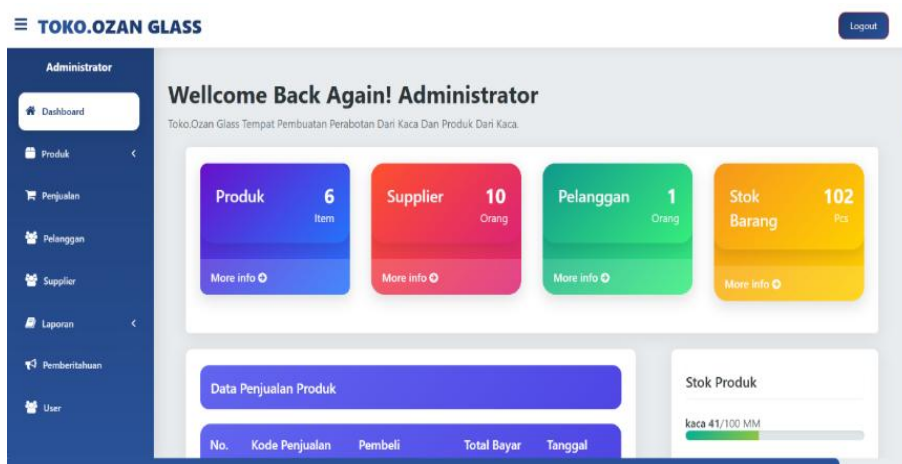


Figure 5. Admin Main Page View

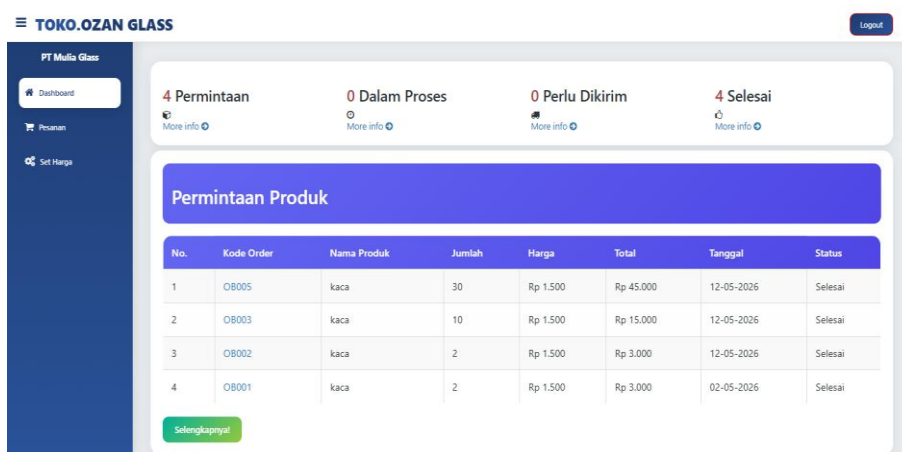


Figure 6. Supplier Main Page View

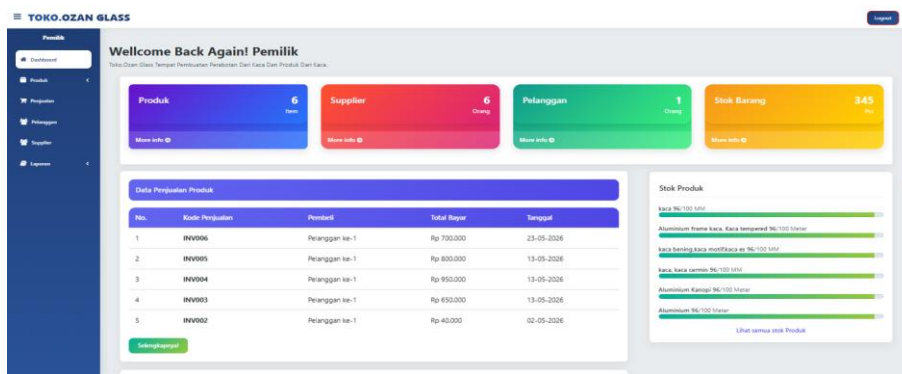


Figure 7. Main Leadership Page Display

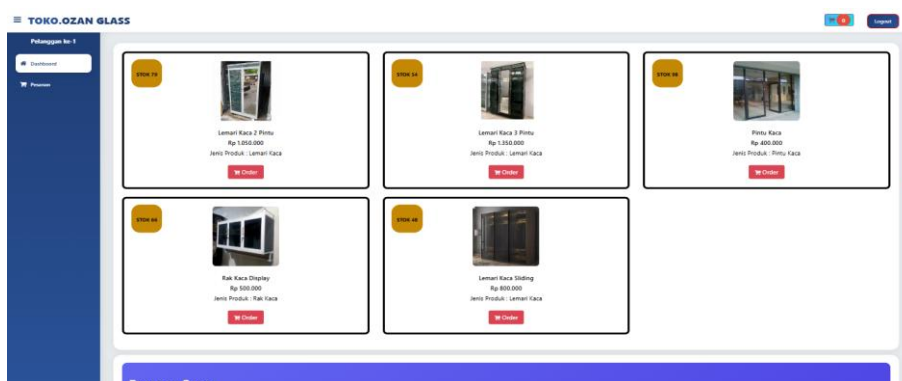


Figure 8. Customer Home Page View

No.	Kode	Nama	Stok	Action
1	M001	kaca	96 MM	[+] [x]
2	M004	Aluminium frame kaca, Kaca tempered	96 Meter	[+] [x]
3	M005	kaca bening,kaca motif,kaca es	96 MM	[+] [x]
4	M009	kaca, kaca cermin	96 MM	[+] [x]
5	M010	Aluminium Kanopi	96 Meter	[+] [x]
6	M011	Aluminium	96 Meter	[+] [x]

Figure 9. Raw Material Data Page Display

No.	Kode Produk	Nama Produk	Jenis	Tanggal Produk	Tanggal Selesai	Status	Hasil	Option
1	P016	Kaca Cendela	Kaca Cendela	27-05-2026	Sedang Diproses	Proses	Sedang Diproses	[+] [x]
2	P015	Rak Kaca Tempel	Rak Kaca	27-05-2026	Sedang Diproses	Proses	Sedang Diproses	[+] [x]
3	P014	Pintu Kaca Tempered	Pintu Kaca	27-05-2026	Sedang Diproses	Proses	Sedang Diproses	[+] [x]
4	P013	Kaca Cermin	Kaca Cermin	27-05-2026	Sedang Diproses	Proses	Sedang Diproses	[+] [x]
5	P012	Etalase Kaca Aluminium	Etalase	27-05-2026	Sedang Diproses	Proses	Sedang Diproses	[+] [x]
6	P011	Meja Kaca	Meja	27-05-2026	Sedang Diproses	Proses	Sedang Diproses	[+] [x]
7	P010	Lemari Pakai	Lemari	27-05-2026	Sedang Diproses	Proses	Sedang Diproses	[+] [x]
8	P009	Lemari Piring Kaca	Lemari Kaca	27-05-2026	Sedang Diproses	Proses	Sedang Diproses	[+] [x]
9	P008	Steling Kaca	Steling	27-05-2026	Sedang Diproses	Proses	Sedang Diproses	[+] [x]
10	P007	Sikat Kaca	Sikat Kaca	27-05-2026	Sedang Diproses	Proses	Sedang Diproses	[+] [x]

Figure 10. Production Process Data Page Display

No.	Kode Penjualan	Pembeli	Tanggal	Total Bayar	Status	Action
1	INV006	Pelanggan ke-1	23-05-2026	Rp 700.000	Selesai	[+] [x]
2	INV005	Pelanggan ke-1	13-05-2026	Rp 800.000	Selesai	[+] [x]
3	INV004	Pelanggan ke-1	13-05-2026	Rp 950.000	Selesai	[+] [x]
4	INV003	Pelanggan ke-1	13-05-2026	Rp 650.000	Selesai	[+] [x]
5	INV002	Pelanggan ke-1	02-05-2026	Rp 40.000	Selesai	[+] [x]
6	INV001	Pelanggan ke-1	02-05-2026	Rp 40.000	Batal	[+] [x]

Figure 11. Product Sales Data Page Display

No.	Kode Order	Produk	Pemasok	Tgl Masuk	Jumlah	Harga	Total
1	OB005	kaca	PT Mulia Glass	12 Mei 2026	10 MM	Rp 1.500	Rp 15.000
2	OB002	kaca	PT Mulia Glass	12 Mei 2026	2 MM	Rp 1.500	Rp 3.000
3	OB004	Aluminium frame kaca, Kaca tempered	Toko Kaca & Aluminium Intan Jaya Galsindo	12 Mei 2026	20 Meter	Rp 1.500	Rp 30.000
4	OB006	Aluminium frame kaca, kaca tempered	Toko Kaca & Aluminium Intan Jaya Galsindo	12 Mei 2026	20 Meter	Rp 1.500	Rp 30.000
5	OB005	kaca	PT Mulia Glass	12 Mei 2026	30 MM	Rp 1.500	Rp 45.000
6	OB001	kaca	PT Mulia Glass	2 Mei 2026	2 MM	Rp 1.500	Rp 3.000

Figure 12. Display of the Incoming Goods Data Report Page

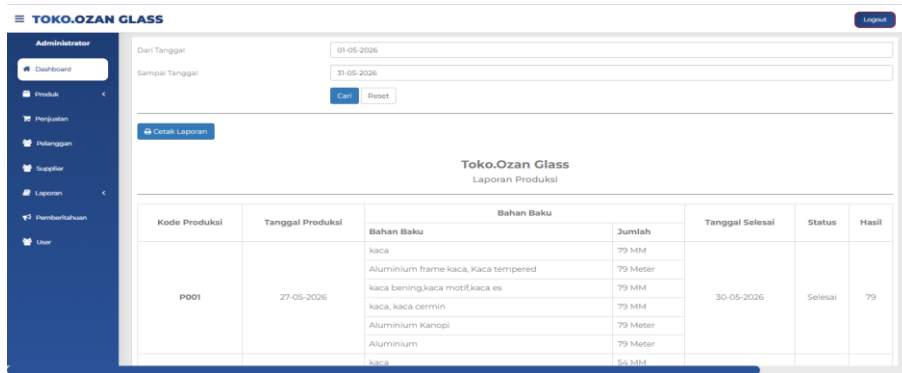


Figure 13. Display of the Outgoing Goods Data Report Page

3.6. Comparison of Results

Based on the overall discussion in this study, conditions before the implementation of the SCM system indicate that product and inventory data management was still carried out in a simple manner, resulting in frequent discrepancies between recorded stock data and actual stock conditions in the field. The unintegrated stock monitoring process made it difficult for the store to accurately determine inventory levels, potentially leading to shortages or stockpiling. Furthermore, the product distribution and procurement process lacked a structured flow, resulting in information needed for decision-making often being delayed and inaccurate. After the SCM system was implemented, there was a significant improvement in distribution and inventory management. All inventory data could be monitored in real time, procurement and distribution processes became more coordinated, and stock information could be obtained quickly and accurately. The system also reduced recording errors, increased operational efficiency, and assisted management in determining inventory needs accurately. Furthermore, the resulting reports were more comprehensive, structured, and easy to use as a basis for decision-making. Thus, the implementation of SCM had a positive impact in improving data accuracy, distribution effectiveness, and the quality of stock management, thus optimizing and controlling the operations of the Ozan Glass Store, supporting better customer service. The following is a percentage image of the comparison before and after the implementation of Supply Chain Management (SCM) at Ozan Glass, Figure 14.

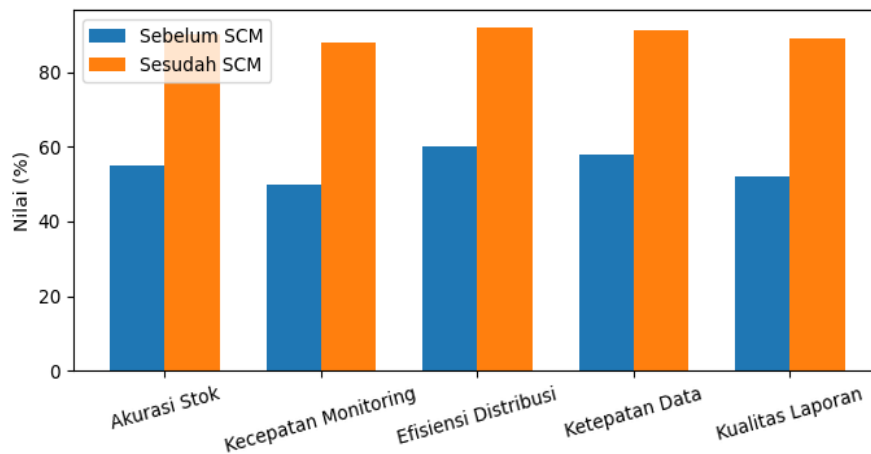


Figure 14. Percentage Comparison Graph of Inventory Performance Before and After Implementing the Supply Chain Management (SCM) System at Ozan Glass

4. CONCLUSION

Based on the results of research on the design of the SCM system at the Ozan Glass Store, it is evident that the implementation of Supply Chain Management (SCM) has brought significant changes. Before the system was implemented, the product distribution process was still carried out manually, starting from recording orders, checking the availability of raw materials and shipping goods. This caused several problems, such as late deliveries, mismatches between information and actual stock conditions and the lack of a system to monitor order status. These conditions increased the possibility of distribution errors and decreased operational efficiency. The SCM system is a PHP and MySQL-based web application with essential modules for raw material management, order processing, shipping status and distribution reports. This system was

designed to meet the needs of the Ozan Glass Store by using an actual distribution workflow analysis approach. In addition, it was designed to be easy to use by management by using UML diagram visualization as the basis for its development. The implementation of the SCM system has been proven to improve the efficiency of the product distribution process. By providing real-time stock data, this system can speed up the order recording process and reduce human error in recording and shipping. In addition, structured reports and product distribution history make the decision-making process faster. Thus, this system supports more efficient, integrated and transparent distribution operations.

REFERENCES

- Abadi, R. R., Hasnidar, Riu, I. A., Masrurah, U. D., & Nurhaedah. (2026). Implementasi Manajemen Rantai Pasok pada Usaha Mikro Kecil dan Menengah (UMKM). *Katalis: Jurnal Inovasi Pengabdian Masyarakat*, 2(1), 1-8. <https://doi.org/10.63288/jipm.v2i1.16>
- Citra, P., Mulia, I., Farid, M., Nurmiati, E., Studi, P., & Informasi, S. (2022). Perancangan Electronic Supply Chain Management (E-SCM) pada PT. Indofood CBP Sukses Makmur TBK. 1(3), 218–231. <https://doi.org/10.55123/insologi.v1i3.407>
- Fole, A. (2023). Perancangan Strategi Mitigasi Risiko Pada Proses Bisnis CV. JAT Menggunakan Metode House of Risk. *Journal of Industrial Engineering Innovation*, 1(02), 54-64. <https://doi.org/10.58227/jiei.v1i02.109>
- Istambul, M. R., Parlindungan, P., & Rijayana, I. (2025). Optimalisasi Rantai Pasok Sekolah: Studi Kasus tentang Arsitektur Informasi e-SCM di SMA. *Jurnal Media Teknik Dan Sistem Industri*, 9(1), 1–13. <https://doi.org/10.35194/jmtsiv9i1.4613>
- Monalisa, S., & Apsyarin, D. (2021). Rancang Bangun Sistem Informasi Supply Chain Management Distribusi Barang Dan Jasa Berbasis Web. *Jurnal Ilmiah Rekayasa Dan Manajemen Sistem Informasi*, 7(2), 139–144. <http://dx.doi.org/10.24014/rmsi.v7i2.13143>
- Putra, T. A. ., Elva, Y., & Rahmat , M. A. . (2022). Supply Chain Management dalam Pendistribusian Barang pada PT.Evalinda Berkah Mandiri (DBesto) Padang dengan Metode Distribution Requirement Planning. *REMIK: Riset Dan E-Jurnal Manajemen Informatika Komputer*, 6(2), 130-141. <https://doi.org/10.33395/remik.v6i2.11358>
- Rahma Diffa, R., Dalimunthe, R., & Sudarmin, S. (2026). Penerapan SCM dalam Pengendalian Sembako sebagai Inventory di UD. *Putri 2. Dinamik*, 31(1), 140-148. <https://doi.org/10.35315/dinamik.v31i1.10314>
- Rahmadani, N. (2025). Pengelolaan Stok Lemari Kaca dengan Sistem SCM Berbasis Web untuk Efisiensi Produksi. 298–309. <https://doi.org/10.33364/algoritma/v.22-2.2494>
- Riyadi, S., & Mannan, A. (2022). Sistem Informasi Distribusi Vape Pada Grandline Vapor Dengan Metode Supply Chain Management Dan Inventory Management Berbasis Website. *EJECTS: Journal Computer, Technology, and Informations System*, 1(2), 48-54.
- Rommy, L. (2025). Strategi Manajerial Supply Chain Management Melalui Edukasi Untuk Optimalisasi Stok Pada Vending Machine: Education and Implementation of Supply Chain Management for Stock Optimization in Vending Machines. *BALQIS : Journal of Business Innovation and Digital Marketing*, 1(2), 149–160. <https://doi.org/10.30983/balqis.v1i2.10502>
- Salsadilah, N., Maharani, D., & Rahayu, E. (2025). Implementasi E-SCM sebagai Mekanisme Kontrol Stok di Teha Coffee Corner. *Dinamik*, 30(2), 331-338. <https://doi.org/10.35315/dinamik.v30i2.10203>
- Saragih, S. H. B., Saragih, F. A. A., Sibuea, N., & Simanjuntak, L. F. (2025). Pengaruh Penerapan Sistem Manajemen Rantai Pasok (Supply Chain Management) Terhadap Kinerja Operasional Perusahaan Alfamart: Studi Kasus di Kota Medan. *PESTEL Management and Marketing Journal*, 1(1), 32-40.
- Margolang, R. Y. S., Anggraeni, D., & Sumantri, S. (2026). Pesediaan Barang Skincare dengan Metode Scm pada PT. Nindy Glow Beauty Aesthetic di Sei Piring. *Dinamik*, 31(1), 178-183. <https://doi.org/10.35315/dinamik.v31i1.10307>