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Application Of SCM For Production Process Optimization Pokat Kocok Odan Coal Stone

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ABSTRACT

The increasing demand for efficiency in managing raw material supply and production processes encourages businesses to adopt integrated information systems. One of the approaches that can be applied is Supply Chain Management (SCM), which enables better coordination between companies and suppliers. However, Pokat Kocok Odan Batu Bara still faces several problems, such as delays in raw material procurement, lack of structured data management, and difficulties in monitoring stock availability, which can disrupt the production process. This study aims to design and implement a web-based Supply Chain Management (SCM) system to improve the effectiveness of raw material management, supplier coordination, and production planning. The system was developed using a structured methodology, including system analysis, design using UML diagrams, implementation with PHP as the programming language, and MySQL as the database management system. The results of this study indicate that the implemented SCM system successfully improves coordination between the company and suppliers, enabling faster and more accurate information exchange. The system also enhances efficiency in managing raw material data, supplier information, and ordering processes in a computerized manner. In addition, the system helps reduce the risk of stock shortages and overstocking by providing real-time inventory monitoring. In conclusion, the developed SCM system proves to be effective in optimizing supply chain processes, improving data accuracy, and supporting smoother production activities at Pokat Kocok Odan Batu Bara.

INTRODUCTION

Competition within the fresh beverage industry is intensifying, compelling businesses to manage their production processes and supply chains more effectively and efficiently (Mukti et al., 2021). Avocado-based beverage businesses face various challenges regarding raw material availability, inventory management, and supplier coordination (Firmansyah & Zhang, 2025). The availability of avocados the primary raw material fluctuates based on seasonality, harvest quality, and the timeliness of supplier deliveries (Adam et al., 2025). These conditions often lead to production irregularities, manifesting as either excess stock that risks compromising raw material quality or stock shortages during periods of high demand (Nur Anisa et al., 2025). The situation is further complicated by a lack of structured inventory record-keeping, resulting in inaccurate information regarding available stock levels (Ramadhan & Valentino, 2024).

On the other side, mashed avocado drink is a beverage made primarily from avocado, with added Milo powder, palm sugar, and milk. This product represents a type of MSME (Micro, Small, and Medium Enterprise) with significant growth potential, owing to its delicious taste and ease of preparation (Fuad Lubis et al., 2024). Furthermore, the simple production process makes the business easy to operate with relatively low capital investment, yet it offers the prospect of substantial profits (Mutiara, 2023).

Pokat Kocok Odan Coal Stone is a beverage business established in 2018 by Mr. Sufri Susanto on Jalan Lingkungan V, Labuhan Ruku, Talawi District, Batu Bara Regency. At its inception, the business was operated by two individuals the founder himself and an assistant who focused on the production and sale of the beverage products.

The challenges faced by Pokat Kocok Odan Batu Bara include difficulties in managing raw material inventory, frequently resulting in either surpluses or shortages. A surplus occurs when raw materials are purchased without regard for daily usage rates or production capacity (Nur Sa'adah & Voutama, 2023). This situation leads to an accumulation of materials, increasing the risk of spoilage and quality degradation due to prolonged storage. Conversely, a shortage of raw materials can disrupt the production process, halt sales activities, and diminish the quality of customer service (Hanifah et al., 2022).

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On the other hand, the raw material procurement process lacks effective coordination between Pokat Kocok Odan and its suppliers; suppliers do not clearly understand the business's requirements, leading to frequent delivery delays. Conversely, Pokat Kocok Odan lacks precise information regarding prices, inventory levels, and delivery schedules, resulting in an unstable ordering process that threatens to disrupt smooth production operations. Furthermore, the failure to implement a Supply Chain Management (SCM) system stems from the owner's lack of understanding regarding its benefits; consequently, raw material management is suboptimal, leading to inconsistent inventory control, a lack of structured sales planning, and poorly organized operational reporting (Halimah & Suntin, 2022).

The production process at Pokat Kocok Odan Batu Bara requires the implementation of Supply Chain Management (SCM) to optimize the entire raw material management workflow. Implementing SCM enables the business to exercise more accurate inventory control by recording daily usage, monitoring stock levels, and establishing reorder points to prevent both surpluses and shortages of raw materials (Wijianto, 2021). Furthermore, SCM facilitates better coordination with suppliers through clear ordering schedules, agreed-upon pricing, and regular updates on raw material availability. Consequently, the procurement process becomes more organized, and the risk of delivery delays is minimized. SCM implementation also supports more focused sales planning, as data regarding inventory, raw material usage, and production requirements are systematically recorded. Ultimately, operational reports can be compiled more effectively, thereby facilitating business performance evaluation and data-driven decision-making.

Supply Chain Management (SCM) is an approach implemented to integrate various parties within the supply chain such as suppliers, manufacturers, warehouses, and retailers in an effective and efficient manner (Nasution et al., 2022). Strategies based on the SCM concept involve a series of activities and strategic actions focused on the flow of goods and information, aiming to align end-customer needs with the resource capabilities available within the supply chain network.

SCM refers to the management of the supply chain between suppliers and buyers, encompassing every stage of the process from raw material procurement and the production of semi-finished goods to the manufacturing of finished products for sale to end consumers (Wahdini et al., 2022). SCM plays a crucial role in coordinating the various parties involved in the supply chain by utilizing modern information systems—specifically web-based information technology to enhance the effectiveness of managing the flow of goods and information. Addressing the aforementioned issues, optimizing the production process for Pokat Kocok Odan Batu Bara in collaboration with suppliers will facilitate more structured raw material ordering.

LITERATURE REVIEW

Customer Relationship Management (CRM) has become one of the most widely adopted strategies to strengthen customer relationships and improve business competitiveness. According to (Nasution et al., 2022), CRM implementation enables businesses to understand customer needs more effectively, resulting in improved customer satisfaction and loyalty. Likewise, (Ramadhan & Valentino, 2024) explained that Electronic Customer Relationship Management (E-CRM) supports more effective communication with customers and facilitates personalized promotional activities through digital platforms.

Furthermore, Pangestu and (Nur Anisa et al., 2025) developed a product recommendation system based on the CRM approach and found that customer transaction history can be utilized to generate personalized product recommendations, thereby improving the relevance of marketing strategies. Similarly, (Fuad Lubis et al., 2024) demonstrated that implementing a web-based CRM system improves customer data management and enhances service quality by providing faster and more accurate access to customer information.

In addition, (Mutiara, 2023) emphasized that CRM implementation not only supports marketing activities but also contributes to managerial decision-making through customer behavior analysis. By utilizing customer profiles and purchasing patterns, business owners can design promotional programs that are more targeted and effective. However, most previous studies focused on general CRM implementation or specific business sectors. Therefore, this study develops a CRM system specifically designed for the promotion of dairy and cosmetic products at Toko Serasi Jaya by utilizing customer transaction history to support personalized promotions and improve customer loyalty.

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METHOD

This research has the following stages:

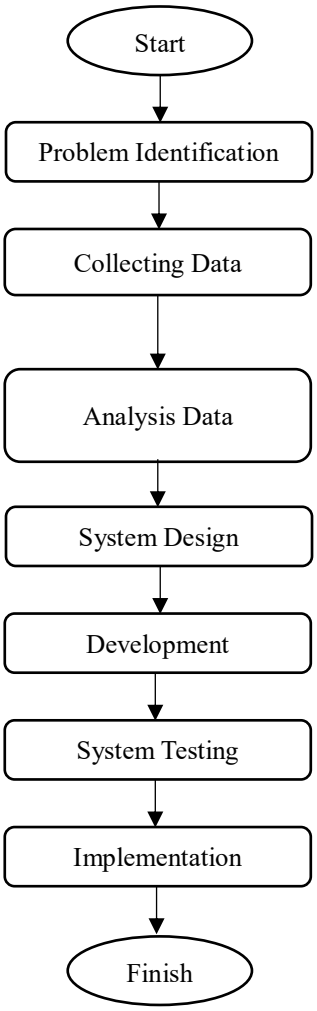


Figure 1. Flowchart Stage Research

Problem Identification

The process of defining the problem in this study was carried out in several stages. The first stage involved establishing the study's focus on the mashed avocado drink production process, encompassing everything from raw material procurement and production to sales. The second stage involved data collection through observation, interviews with the owner and employees, and documentation of the existing processes. The third stage entailed identifying problem indicators, such as suboptimal inventory management, delays in raw material supplies, and a lack of supply chain coordination. The fourth stage involved analyzing the root causes of these issues, specifically the failure to fully implement Supply Chain Management (SCM) concepts and the minimal use of integrated systems. The fifth stage determined the need for a solution namely, the implementation of an SCM system to optimize the production process, making it more efficient and coordinated.

Collecting Data

At this stage, data collection is conducted to gain a better understanding of the system under study. The author collects data by visiting Pokat Kocok Odan Batu Bara in person and interviewing the owner, Mr. Sufri Susanto, to gather information regarding raw materials, the preparation process for mashed avocado, and supplier details.

Analysis Data

The data obtained was subsequently analyzed to improve the existing system with the aim of achieving better results. Based on the raw material and supplier data from Pokat Kocok Odan Batu Bara, an analysis was conducted to examine the continuation of all production and record-keeping processes at the business. This analysis was performed to identify the requirements for the sustainability of Pokat Kocok Odan Batu Bara's operations.

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System Design

System design involves creating a system blueprint to address problems identified during the initial analysis phase at Pokat Kocok Odan Batu Bara. The supply chain management system will be developed using PHP and a MySQL database. Information System Flow (ISF) charts and Entity Relationship Diagrams (ERD) will be designed using Microsoft Visio, while UML diagrams will be created using Visual Paradigm (Umar et al., 2021).

Development

System development involves creating a new information system or modifying an existing one, either in whole or in part. Fundamentally, system development is linked to the processes of system analysis and design. The development process entails preparing the necessary software specifically PHP (Hypertext Preprocessor), XAMPP, and a MySQL database and writing the code to implement Supply Chain Management (SCM) within the program.

System Testing

Once the program design is complete, it will undergo testing to determine whether it meets the intended objectives. The production management system designed for Pokat Kocok Odan Batu Bara will be tested using black-box testing; this serves to verify whether the developed system aligns with expectations.

Implementation

At this stage, the completed program is implemented to determine whether it is user-friendly and easily understood by its users. Once the supply chain management system has successfully passed testing, it can be implemented at Pokat Kocok Odan Batu Bara and utilized to its full potential.

RESULT

Data Analysis

Data analysis is the process of modeling data to discover useful information, support decision-making, and derive relevant conclusions. The input data required for the system to be designed includes supplier data, inventory data, raw material ordering data, raw material usage data, product production data, and sales data. Supplier data for Pokat Kocok Odan Batu Bara is presented in Table 1 below.

Table 1. Supplier

No	*Supplier*	Address	Sell
1	-Tarmizi - Ilham	- Pahang Street, Batu Bara Regency, North Sumatera. -Jalan Manunggal, Batu Bara Regency, North Sumatera.	Avocado
2	Sarkawi	Dahari Selebar Street, Batu Bara Regency, Nort Sumatera.	Ice Cream
3	- Burhan -*Frozenfood*	- Medan Street, Medan City, North Sumatera. - Simpang Empat Street, Asahan Regency, North Sumatera.	Durian
4	Jefri	Labuhan Ruku Street, Batu Bara Regency, North Sumatera.	Milk
5	Riska	Pasar Mereng Street, Asahan Regency, North Sumatera.	Cups, Spoons, and Straws

System Design

The system design is built using a use case diagram. The purpose of this design is to explain the requirements in detail. (Prasetya et al., 2022). The design of the use case diagram is presented in Figure 2.

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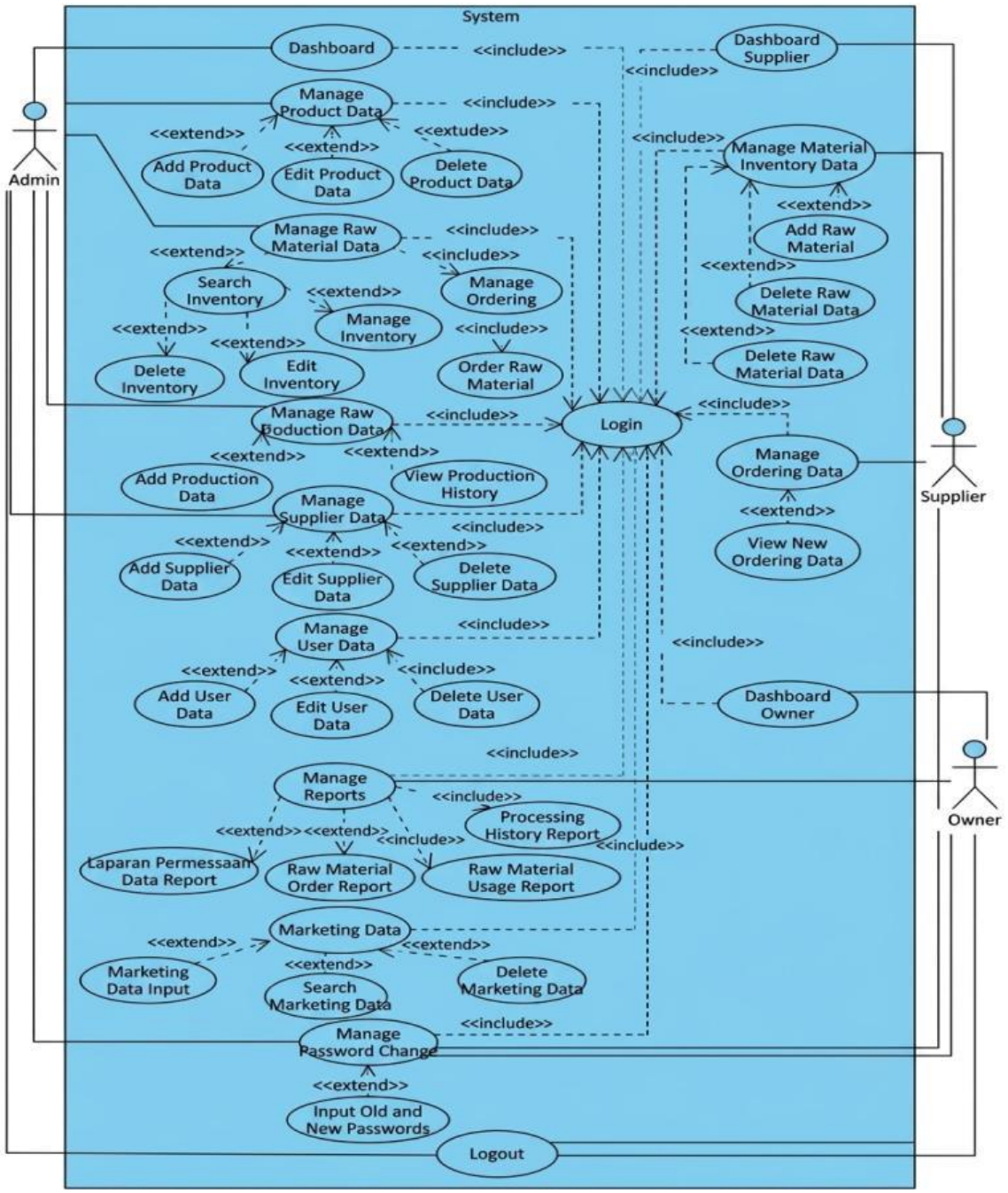


Figure 2. Use Case Diagram Design

Figure 2 illustrates the interaction between the users and the proposed Supply Chain Management (SCM) system. The system involves three main actors: Administrator, Supplier, and Customer, each having different access rights according to their respective roles.

The process begins when the Administrator logs into the system and manages master data, including product information, supplier data, inventory records, purchase orders, and sales transactions. The administrator is also responsible for monitoring stock availability, updating inventory after procurement and sales activities, and generating operational reports.

The Supplier receives purchase orders generated by the system and supplies the requested products. Once the ordered items are delivered, the inventory data are automatically updated, allowing the system to maintain accurate stock information in real time.

Meanwhile, the Customer accesses product information, places orders, and completes purchase transactions through the system. Every customer transaction automatically reduces the available inventory, ensuring that stock information remains consistent and up to date.

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Overall, the Use Case Diagram demonstrates the integration of procurement, inventory management, sales, and reporting processes within a single web-based SCM system. This integration enables efficient information flow among stakeholders, improves inventory control, and supports more effective operational decision-making.

Implementation

In this phase, the system design is realized into an application that can be operated and utilized to the fullest according to user needs. Here are the results of its implementation.

Login Page

The login screen is the page used to verify user credentials for system access by requiring the correct entry of a username and password.

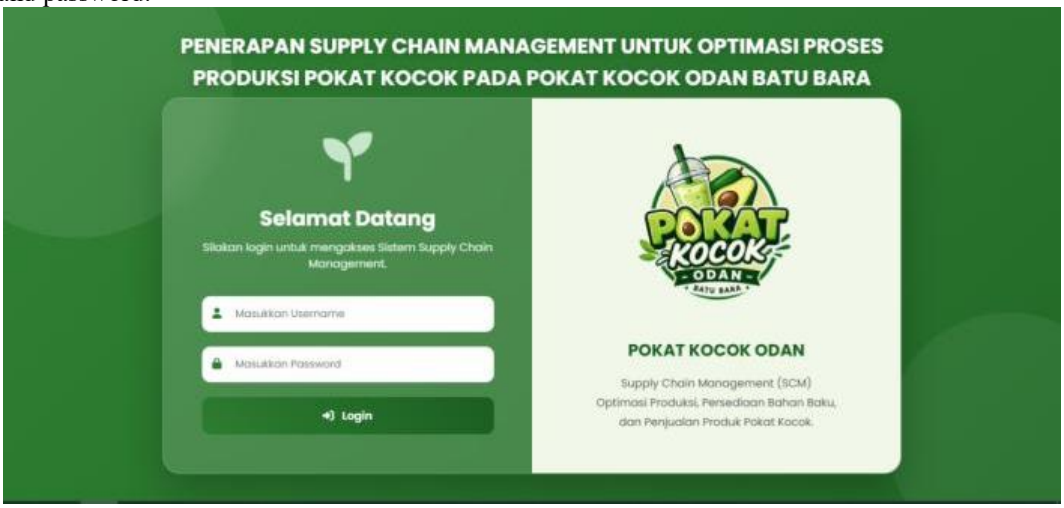


Figure 3. Login Page

Main Page

Figure 4 illustrates one of the main interfaces of the proposed CRM system. This page enables users to perform the corresponding business process efficiently through an organized interface, supporting accurate data management and improving the overall user experience.

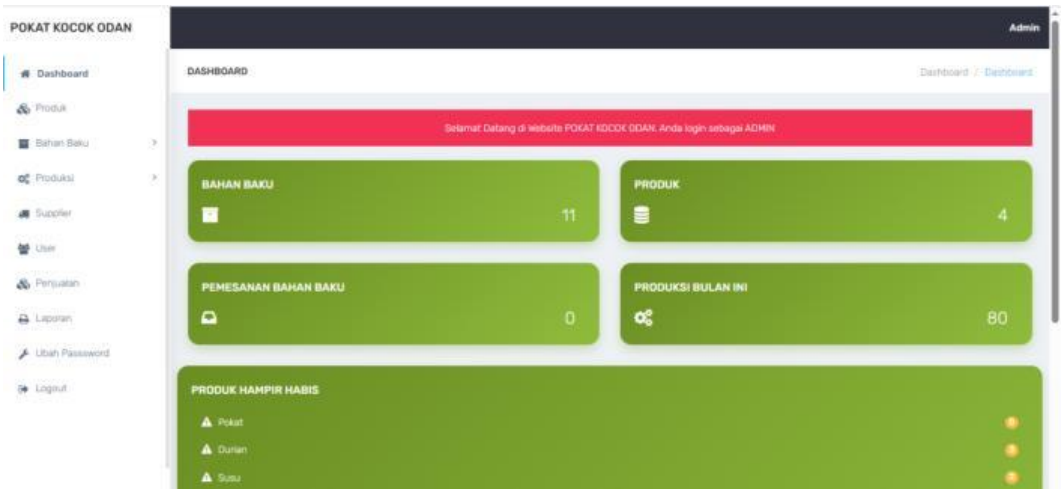


Figure 4. Main Page

Data Product Page

Figure 5 presents the implementation of the system feature used in the customer management process. The interface is designed to facilitate users in accessing, updating, and managing customer-related information accurately and efficiently.

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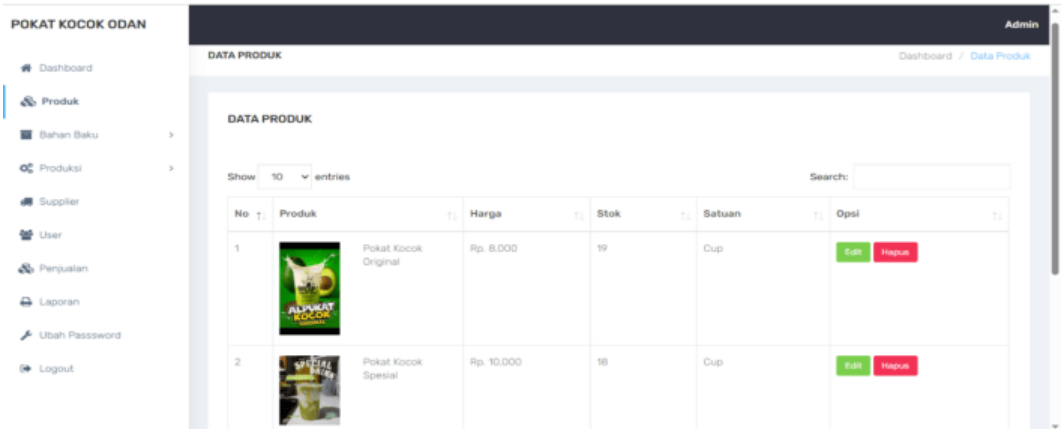


Figure 5. Data Product Page

Raw Material Inventory Page

Figure 6 shows the product management interface used to organize product information within the CRM system. This feature simplifies the process of adding, editing, and maintaining product data to support daily business operations.

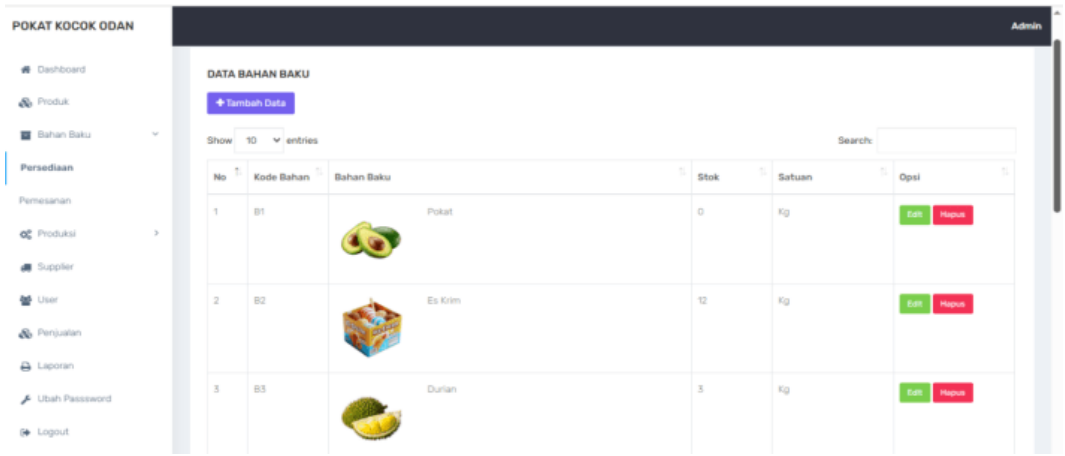


Figure 6. Raw Material Inventory Page

Raw Material Order Data Page

Figure 7 illustrates the transaction management page, where users can record and monitor customer purchase activities. The system stores transaction data systematically to support reporting and customer relationship analysis.

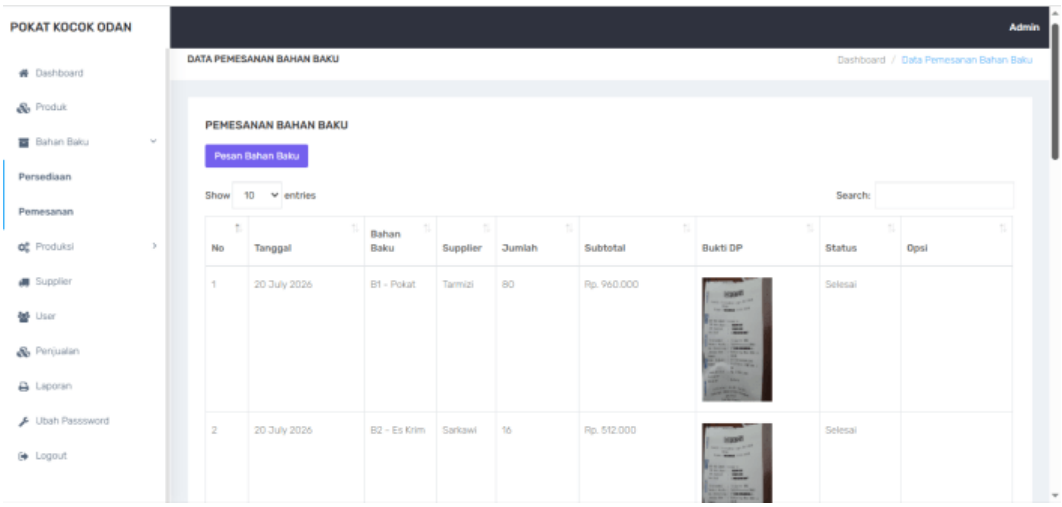


Figure 7. Raw Material Order Data Page

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Supplier Page

Figure 8 presents the promotional feature of the CRM system. This page enables administrators to manage promotional information and distribute offers to customers, supporting more effective and personalized marketing activities.

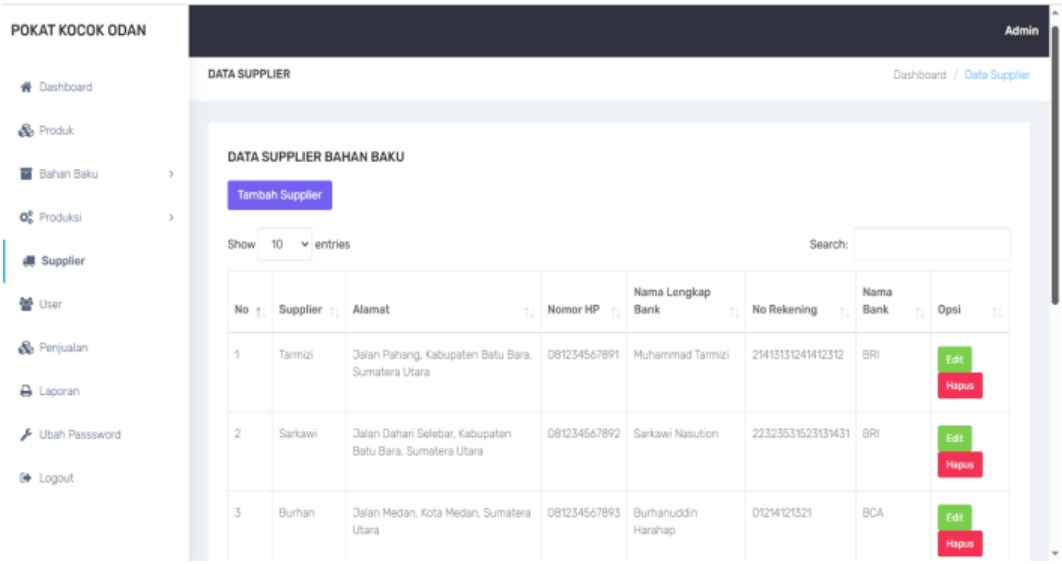


Figure 8. Supplier Page

Transaction Page

Figure 9 shows the customer feedback interface that allows customers to submit comments and evaluations regarding products or services. The collected feedback can be used to improve service quality and customer satisfaction.

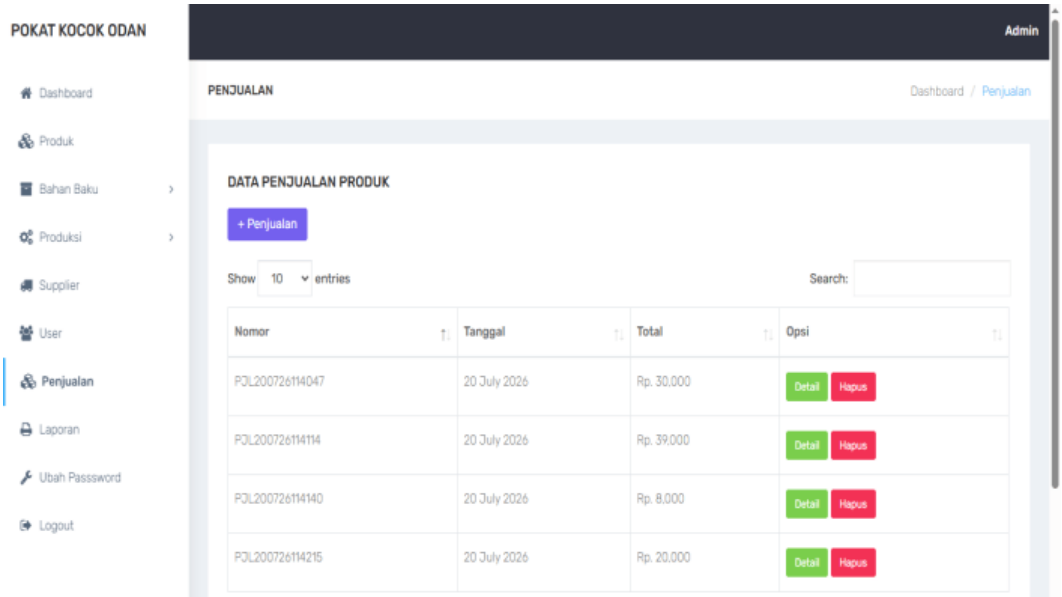


Figure 9. Transaction Page

Raw Material Order Report

Figure 10 illustrates the reporting module of the CRM system. This feature provides summarized information on customer activities, transactions, and promotional performance, assisting management in making data-driven business decisions.

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POKAT KOCOK ODAN BATU BARA

Jalan Lingkungan V Labuhan Ruku, Kecamatan Talawi, Kabupaten Batu Bara

LAPORAN PEMESANAN BAHAN BAKU

Periode : 20 July 2026 s/d 21 July 2026

Kode Pemesanan	Tanggal	Bahan	Supplier	Jumlah	Stok Awal	Stok Akhir	Subtotal
PSN200726110010	2026-07-20	Pokat	Tarmizi	80 Kg	0 Kg	80 Kg	Rp. 960.000
PSN200726110043	2026-07-20	Es Krim	Sarkawi	16 Kg	0 Kg	16 Kg	Rp. 512.000
PSN200726110122	2026-07-20	Durian	Burhan	8 Kg	0 Kg	8 Kg	Rp. 480.000
PSN200726110139	2026-07-20	Susu	Jefri	8 Kg	0 Kg	8 Kg	Rp. 200.000
PSN200726110253	2026-07-20	Set Cup (Gelas dan Tutup Cup isi 50)	Riska	10 Bungkus	0 Bungkus	10 Bungkus	Rp. 550.000
PSN200726110103	2026-07-20	Es Kristal	Sarkawi	8 Bungkus	0 Bungkus	8 Bungkus	Rp. 128.000
PSN200726110229	2026-07-20	Milo Per 500 Gram	Jefri	2 Gram	0 Gram	2 Gram	Rp. 30.000
PSN200726110311	2026-07-20	Sendok dan Sedotan	Riska	10 Bungkus	0 Bungkus	10 Bungkus	Rp. 400.000
PSN200726110325	2026-07-20	Kantong Plastik	Riska	12 Pack	0 Pack	12 Pack	Rp. 120.000
Total							**Rp 3.380.000**

Figure 10. Raw Material Order Report

DISCUSSION

The implementation of the Customer Relationship Management (CRM) system provides significant improvements in managing customer relationships and promotional activities at Toko Serasi Jaya. Prior to the implementation of the system, customer information and promotional activities were managed conventionally, making it difficult for the store to identify customer preferences and provide targeted promotional offers. As a result, promotional activities were less effective, and customer transaction data were not optimally utilized to support marketing strategies.

After implementing the web-based CRM system, customer data, transaction history, promotional vouchers, and feedback can be managed within a single integrated platform. This integration enables business owners to monitor customer purchasing behavior more efficiently and develop personalized promotional strategies based on customer transaction records. Consequently, promotional activities become more targeted, improving customer engagement and strengthening long-term customer relationships.

Furthermore, the CRM system supports more effective business decision-making by providing organized customer information and transaction reports. The availability of these reports allows management to evaluate customer purchasing patterns and identify products that receive the highest customer interest. Compared with the previous manual process, the proposed system improves operational efficiency, reduces administrative errors, and facilitates faster access to customer information.

These findings are consistent with previous studies by Rona et al. (2023) and Anggara et al. (2022), which reported that web-based CRM systems improve customer data management and service quality. Likewise, Ramadhani et al. (2022) emphasized that CRM implementation enhances promotional effectiveness by utilizing customer information to support more personalized marketing strategies. Therefore, the developed CRM system can effectively assist Toko Serasi Jaya in improving customer satisfaction, customer loyalty, and business competitiveness through data-driven marketing.

CONCLUSION

With the implementation of the Supply Chain Management (SCM) system, coordination and information exchange between Pokat Kocok Odan and its suppliers have improved, enabling the procurement of raw materials to be carried out more effectively and on time, while minimizing supply delays. The implementation of the Supply Chain Management (SCM) system—which has been designed and developed—enables computerized management of data related to raw materials, suppliers, orders, and production, making data processing more efficient and automated. Furthermore, the implementation of Supply Chain Management (SCM) at Pokat Kocok Odan Batu Bara the management of raw material inventory and production has become more structured, helping to reduce the risk of both excess and shortages of raw materials and supporting the smooth flow of the production process.

REFERENCES

Adam, F., Probo Sumirat, L., & Santoso, B. (2025). Pengembangan Sistem Informasi Manajemen Stok Berbasis Website Pada Prop Noodle Bar Manyar. *Rabit : Jurnal Teknologi Dan Sistem Informasi Univrab*, *10*(1), 158–167. https://doi.org/10.36341/rabit.v10i1.5710

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E-ISSN : 2807-9035
Volume 6, **Number** 4, November 2026
https://doi.org/10.47709/brilliance.v6i4.9457

Firmansyah, M. D., & Zhang, H. Y. (2025). Analisis Faktor Pengaruh Terhadap Kepercayaan Manajemen Penggunaan Basis Data Dalam Layanan Bisnis UMKM Indonesia. *RABIT : Jurnal Teknologi Dan Sistem Informasi Univrab*, *10*(1), 139–157. https://doi.org/https://doi.org/10.36341/rabit.v10i1.5634

Fuad Lubis, C., Azhar, Z., & Fauziah, R. (2024). Penerapan Metode E-SCM Dalam Upaya Optimalisasi Distribusi Produk Mie Pada UD. Mie Ferri. *JUTSI (Jurnal Teknologi Dan Sistem Informasi)*, *4*(1), 72–82.

Halimah, N., & Suntin, S. (2020). Proyeksi dan Pemetaan Wilayah Sebaran Balita Stunting Di Kota Makassar Berbasis Sistem Informasi Geografi (SIG) Projection and Mapping Areas of Distribution of Stunting Children in Makassar City Based on Geographic Information System (GIS). *PROMOTIF: Jurnal Kesehatan Masyarakat*, *10*(2), 173–184.

Hanifah, S. U., Lestari, W. M., Habibah, R., Andaresta, O., & Yulianingsih, D. (2022). Pemanfaatan Teknologi Pembelajaran Di Masa Pandemi Covid-19. *Jurnal Al-Qiyam*, *2*(2), 68–72. https://doi.org/10.33648/alqiyam.v3i1.200

Mukti, H., Fitriani, I., & Erlangga, F. (2021). Sistem Informasi Inventory Barang Pada PT. Assami Ananda Berbasis Java Neatbeans. *Jurnal Pengkajian Dan Penerapan Teknik Informatika (PETIR)*, *14*(2), 139–149. https://doi.org/10.33322/petir.v14i2.884

Mutiara, P. (2023). Analisis Supply Chain Pengangkutan Kelapa Sawit menggunakan Kapal Tanker di PT. Bhaita Jaya Samudra. *Journal of Management and Industrial Engineering (JMIE) Sekolah Tinggi Teknologi Nusantara Lampung*, *2*, 31–45.

Nasution, S. W., Manurung, N., & Rahayu, E. (2022). Penerapan Supply Chain Management (SCM) Dalam Pemantauan Stok Barang Berbasis Web. *Building of Informatics, Technology and Science (BITS)*, *4*(2), 361–368. https://doi.org/10.47065/bits.v4i2.1781

Nur Anisa, L., Andawiah, S., Putra Utama, D., & Afan, I. (2025). Implementasi Supply Chain Management Untuk Meningkatkan Kinerja Logistik Perusahaan. *Jurnal Masharif Al-Syariah: Jurnal Ekonomi Dan Perbankan Syariah*, *1o*(1), 460–471. https://doi.org/https://doi.org/10.30651/jms.v10i1.25469

Nur Sa'adah, F., & Voutama, A. (2023). Perancangan Aplikasi Penjualan Fashion Dan Aksesoris Berbasis Web Pada Toko Fitrin. *JATI (Jurnal Mahasiswa Teknik Informatika)*, *7*(2), 1364–1371. https://doi.org/10.36040/jati.v7i2.6809

Prasetya, A. F., Sintia, & Putri, U. L. D. (2022). Perancangan Aplikasi Rental Mobil Menggunakan Diagram UML (Unified Modelling Language). *Jurnal Ilmiah Komputer Terapan Dan Informasi*, *1*(1), 14–18.

Ramadhan, A. R., & Valentino, M. (2024). Implementasi Sistem Manajemen Persediaan Berbasis Web Untuk Efisiensi Stok Barang. *Buletin Ilmiah Ilmu Komputer ...*, *2*(1), 96–107. http://jurnalmahasiswa.com/index.php/biikma/article/view/1136%0Ahttps://jurnalmahasiswa.com/index.php/biikma/article/download/1136/701

Umar, R., Sarjimin, S., Nugroho, A. S., Dito, A., & Gunawan, I. (2021). Perancangan Sistem Informasi Keuangan Berbasis Web Multi User Dengan UML. *Jurnal Algoritma*, *17*(2), 204–211. https://doi.org/10.33364/algoritma/v.17-2.204

Wahdini, R., Mahira, T. I., & Aisyah, S. (2022). Pengaruh Supply Chain Management Indomie Terhadap Keloyalitas Konsumen (Studi: Pedagang Grosir Tradisional Makanan dan Minuman Ringan Tradisional di Kabupaten Mandailing Natal). *ADI Bisnis Digital Interdisiplin Jurnal*, *3*(2), 56–59. https://doi.org/10.34306/abdi.v3i2.772

Wijianto, A. (2021). Sistem Pakar Mendiagnosa Penyakit Pencernaan Pada Manusia Menggunakan Metode Forward Chaining dan Certainty Factor. *Jurnal Teknik Juara Aktif Global Optimis*, *1*(2), 1–10. https://doi.org/10.53620/jtg.v1i2.26

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