JURTEKSI (Jurnal Teknologi dan Sistem Informasi) ISSN 2407-1811 (Print)
Vol XII No 2, Maret 2026, hlm. 231 –238 ISSN 2550-0201 (Online)
DOI: https://doi.org/10.33330/jurteksi.v12i2.4435
Available online at https://jurnal.stmikroyal.ac.id/index.php/jurteksi

E-CRM MYSAFFANA FOR OPTIMIZING CUSTOMER AND TRANSACTION DATA AT SAFFANA BOUTIQUE

Nurul Masytha Siagian[1*], Maulana Dwi Sena[1], Febby Madonna Yuma[1]
[1]Information System, Universitas Royal
email:* nurulmasythasiagian@gmail.com

Abstract: The development of information technology encourages retail businesses to manage customer and transaction data more effectively. However, many small-scale retailers still rely on manual record-keeping, resulting in unintegrated data and limited decision-making support. This study aims to design and implement a web-based Electronic Customer Relationship Management (E-CRM) system called MySaffana for Saffana Gallery Boutique to optimize customer and transaction data management. The research method includes requirement analysis, system design using UML, implementation using PHP and MySQL, and system testing using black box testing. The results show that the MySaffana system is able to manage customer data, products, transactions, and sales reports in an integrated and efficient manner. System testing indicates that all main features function properly and meet user requirements. Therefore, the developed E-CRM system provides an effective and practical solution for strengthening data-driven decision-making in small-scale retail businesses.

Keywords: boutique; customer data management; customer profiling; E-CRM.

Abstrak: Perkembangan teknologi informasi mendorong usaha ritel untuk mengelola data pelanggan dan transaksi secara lebih efektif. Namun, banyak usaha ritel skala kecil masih melakukan pencatatan secara manual sehingga data tidak terintegrasi dan kurang optimal dalam mendukung keputusan. Penelitian ini bertujuan untuk merancang dan mengimplementasikan sistem Electronic Customer Relationship Management (E-CRM) berbasis web bernama MySaffana pada Butik Saffana Gallery yang dapat mengoptimalkan pengelolaan data pelanggan dan transaksi. Metode penelitian meliputi analisis kebutuhan, perancangan sistem menggunakan UML, implementasi dengan PHP dan MySQL, serta pengujian menggunakan metode black box testing. Hasil penelitian menunjukkan bahwa sistem MySaffana mampu mengelola data pelanggan, produk, transaksi, dan laporan penjualan secara terintegrasi dan efisien. Pengujian sistem membuktikan seluruh fitur berjalan sesuai fungsi dan kebutuhan pengguna. Dengan demikian, sistem E-CRM berbasis web ini dapat menjadi solusi yang efektif dalam mendukung pengelolaan data dan pengambilan keputusan berbasis data bagi usaha ritel skala kecil.

Kata kunci: butik; E-CRM; profil pelanggan; pengelolaan data pelanggan.

JURTEKSI (Jurnal Teknologi dan Sistem Informasi) ISSN 2407-1811 (Print)
Vol XII No 2, Maret 2026, hlm. 231 –238 ISSN 2550-0201 (Online)
DOI: https://doi.org/10.33330/jurteksi.v12i2.4435
Available online at https://jurnal.stmikroyal.ac.id/index.php/jurteksi

INTRODUCTION

The rapid development of information technology has significantly transformed how businesses manage relationships with customers. Information systems are no longer used solely to improve operational efficiency but also to support strategic data management and enhance service quality. In an increasingly competitive business environment, the ability to manage customer relationships effectively has become a crucial factor in maintaining business sustainability [1], [2].

In the retail business sector, Customer Relationship Management (CRM) represents a strategic approach that utilizes customer data to build long-term relationships. CRM enables businesses to understand customer characteristics, manage interactions systematically, and increase customer loyalty through personalized services [3]. However, conventional CRM implementation still faces limitations, particularly among small-scale retail businesses that have not fully adopted information technology [4].

As business environments become more data-driven, CRM has evolved into Electronic Customer Relationship Management (E-CRM), which utilizes web-based technologies to manage customer and transaction data digitally. E-CRM enabless centralized, real-time, and structured data access, allowing businesses to record customer information, monitor transaction histories, and generate analytical reports to support managerial decision-making [5], [6]. Through integrated databases, businesses can identify repeat customers, evaluate purchasing frequency, and implement retention-oriented strategies more effectively.

Despite the advancements, many small and medium enterprises (SMEs), including fashion boutiques, still rely on manual record keeping systems such as handwritten transaction books and sales receipts. While this approach may support basic administrative needs, it does not adequately support customer relationship management. Customer data are often recorded merely as transaction evidence and are not strategically utilized to identify loyal customers, analyze repeat purchase behavior, or design targeted promotional programs [4], [7].As a result, customer information remains fragmented and underutilized, limiting the business's ability to strengthen long-term relationships.

In many small retail businesses, digital systems if implemented are often limited to transaction recording and reporting functions without integrating customer-oriented analytical capabilities. Such systems may improve administrative efficiency but do not necessarily support strategic CRM objectives. A comprehensive E-CRM system should not only store data but also enables customer profiling, purchase history tracking, segmentation, and data-driven decision-making. Therefore, distinguishing between a conventional information system and a CRM-based system becomes essential in ensuring that technology implementation aligns with relationship marketing strategies.

In This study, CRM is operationalized through three primary components: customer profiling, transaction history tracking, and data-driven retention support. Customer profiling enables systematic storage of identity and behavioral data, and retention support facilitates strategic promotional planning based on purchasing patterns. These components

JURTEKSI (Jurnal Teknologi dan Sistem Informasi) ISSN 2407-1811 (Print)
Vol XII No 2, Maret 2026, hlm. 231 –238 ISSN 2550-0201 (Online)
DOI: https://doi.org/10.33330/jurteksi.v12i2.4435
Available online at https://jurnal.stmikroyal.ac.id/index.php/jurteksi

distinguish the proposed system from a conventional sales information system and emphasize its role in supporting long-term relationships management.

At Saffana Gallery Boutique, customer and transaction data are still managed manually. This condition not only leads on fragmented and difficult-to-track records but also creates challenges in distinguishing between new and returning customers. The boutique faces difficulties in identifying high-frequency buyers, analyzing purchasing patterns, and implementing personalized marketing strategies. Consequently, the boutique is unable to systematically identify loyal customers or design structured retention strategies based on purchasing behavior. This condition weakens relationship marketing efforts and limits the development of sustainable long-term customer relationship.

In response to these challenges, digital transformation in customer relationship management has become a strategic necessity for retail businesses to improve service quality and data integration, particularly through the utilization of information system [8]. The digitalization of business processes through E-CRM systems enables retail businesses to adapt to changes in consumer behavior that increasingly demand fast, accurate, and data-driven services, supported by integrated and reliable information system [9].

In this context, E-CRM functions not merely as a recording tool, but as a strategic instrument for integrating customer and transaction data to support more effective and sustainable decision-making and improve organizational performance [10]. The optimization of customer and transaction data management through E-CRM plays a crucial role enhancing the competitiveness of small-scale retail businesses, particularly traditional boutiques. By utilizing integrated data, business owners can identify purchasing patterns, perform more accurate customer segmentation, and design more personalized and targeted promotional strategies [11], [10].

Several recent studies have examined the implementation of E-CRM in large enterprises and digital marketplaces [12]. For instance, previous research emphasized the role of E-CRM in enhancing customer satisfaction and loyalty through integrated digital platforms and large-scale data management. Other studies focused on conceptual frameworks and strategic models for E-CRM adoption at the corporate level. However, these studies primarily address large organizational contexts and do not specifically discuss the practical development of web-based E-CRM systems tailored to small-scale boutique businesses. In contrast, small retail environments require adaptive system designs that align closely with daily operational workflows and limited organizational resources. Therefore, a research gap remains in developing an applicable and operationally aligned E-CRM framework suitable for small fashion boutiques.

Based on these issues, this study focuses on the development of a web-based E-CRM system capable of integrating customer and transaction data in a structured manner. The study emphasizes an applicative system design approach that aligns with the operational needs of small retail businesses. This research aims to design and implement a web-based E-CRM system called MySaffana to optimize customer and transaction data management and accelerate administrative processes, as

JURTEKSI (Jurnal Teknologi dan Sistem Informasi) ISSN 2407-1811 (Print)
Vol XII No 2, Maret 2026, hlm. 231 –238 ISSN 2550-0201 (Online)
DOI: https://doi.org/10.33330/jurteksi.v12i2.4435
Available online at https://jurnal.stmikroyal.ac.id/index.php/jurteksi

well as to strengthen long-term relationships with customers through structured customer profiling and transaction-based analysis.

Academically, this study contributes to the practical implementation model of E-CRM in small-scale retail contexts by demonstrating how integrated customer data can support relationship marketing strategies. Practically, it provides a replicable framework adaptable for boutique businesses.

METHOD

This research employs an applied research method with a descriptive approach. The applied research method is intended to produce practical solutions to real problems faced by the research object through the design and implementation of a web-based Electronic Customer Relationship Management (E-CRM) system. This approach is appropriate for system development studies that aim to solve operational problems in small business environments. The descriptive approach is used to explain the existing system conditions and identify the needs related to customer and transaction data management at Saffana Gallery Boutique [13].

Data collection was conducted through observation, interview, and documentation studies. Observation was carried out by directly examining the customer data recording and sales transaction processes, which were still performed manually using transaction books and sales receipts. Interviews were conducted with the boutique owner to identify system requirements, operational constraints, and expectations regarding the proposed system. Documentation studies involved collecting historical sales transaction records used as the primary dataset in this research. These techniques ensures that the developed system reflects actual business needs and operational workflows [12].

The development procedure of the MySaffana system is illustrated in Image 1. The process began with business problem identification and analysis of existing data and operational workflows. Based on this analysis, system requirements were specified and translated into an E-CRM system design using UML and database modeling. The implementation stage involved web-based development using PHP and MySQL, followed by system testing using the black box method to ensure functional reliability. Finally, the system was deployed and evaluated to assess its effectiveness in supporting customer profiling and transaction integration.

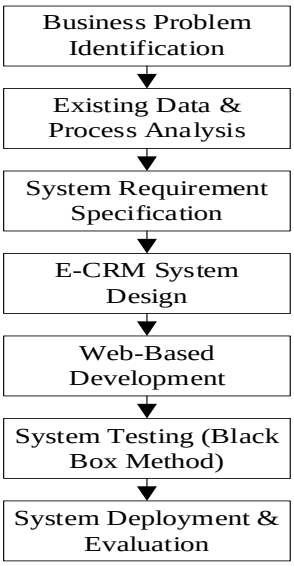

Image 1. Research Stage of MySaffana E-CRM Development

The data utilized in this research consist of sales transaction records from Saffana Gallery Boutique covering the period from October 2024 to September

JURTEKSI (Jurnal Teknologi dan Sistem Informasi) ISSN 2407-1811 (Print)
Vol XII No 2, Maret 2026, hlm. 231 –238 ISSN 2550-0201 (Online)
DOI: https://doi.org/10.33330/jurteksi.v12i2.4435
Available online at https://jurnal.stmikroyal.ac.id/index.php/jurteksi

2025, including the number of transactions and total monthly sales. These data were analyzed to understand transaction characteristics and support the development of the MySaffana E-CRM systems. A summary of the sales transaction data is presented in Table 1.

Table 1. Sales Transaction Summary of Saffana Gallery Boutique (2024–2025)

Month	Year	No. of Trans	Total Sales (IDR)
October	2024	105	Rp 20.650.000
November	2024	114	Rp 22.350.000
December	2024	136	Rp 27.000.000
January	2025	95	Rp 18.650.000
February	2025	88	Rp 17.400.000
March	2025	102	Rp 20.150.000
April	2025	135	Rp 27.300.000
May	2025	85	Rp 16.750.000
June	2025	92	Rp 18.100.000
July	2025	98	Rp 19.450.000
August	2025	110	Rp 21.900.000
September	2025	97	Rp 19.200.000

Based on table 1, transaction activity fluctuates across the observed period, indicating dynamic purchasing behavior and varying customer demand. These variations highlight the necessity of an integrated E-CRM system capable of systematically recording, organizing, and analyzing customer and transaction data to support managerial decision-making and long-term relationships strategies.

The data analysis technique applied in This study is descriptive analysis. The transaction data were examined to identify trends and operational patterns that support system feature development. The analysis results confirm that an integrated E-CRM system is required to optimize customer data management, improve administrative efficiency, and strengthen long-term customer relationship management in small-scale retail businesses.

RESULT AND DISCUSSION

This section discusses the implementation of the MySaffana E-CRM-based system at Saffana Gallery Boutique and examines its contribution to optimising customer data and sales transaction management. The presented results focus on the main user interfaces that represent the core functions of the E-CRM system, including customer data management, sales transaction, and sales reporting. These features are analyzed not only from a technical perspective but also in terms of their contribution to customer relationship management and managerial decision-making [3].

Customer Data page (Admin)

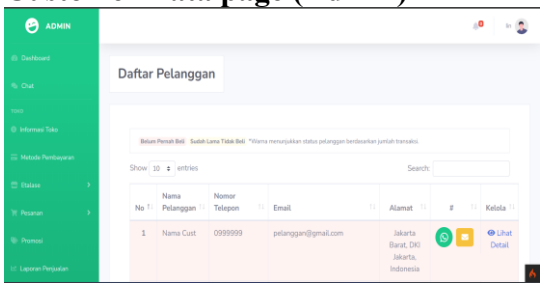

Image 2. Customer Data page

The Customer Data page serves as a central component of the MySaffana system by providing a structured and integrated repository for storing customer

JURTEKSI (Jurnal Teknologi dan Sistem Informasi) ISSN 2407-1811 (Print)
Vol XII No 2, Maret 2026, hlm. 231 –238 ISSN 2550-0201 (Online)
DOI: https://doi.org/10.33330/jurteksi.v12i2.4435
Available online at https://jurnal.stmikroyal.ac.id/index.php/jurteksi

information. Through this interface, administrators can access customer identity data, transaction history, and purchasing activities within a unified database environment. Compared to the previous manual recording system, which relied on handwritten notes and scattered records, this implementation significantly improves data organization and accessibility.

Beyond functioning as a storage medium, this feature enables systematic customer profiling. By integrating identity and transaction data, the system allows the boutique owner to identify repeat customers, evaluate purchasing frequency, and observe behavioral tendencies. This capability supports the fundamental principles of E-CRM, where customer data are utilized strategically to strengthen long-term relationships rather than merely recorded for administrative purposes. The availability of structured customer information therefore enhances the boutique's ability to implement data-driven retention strategies and personalized service approaches.

Order Page (Admin)

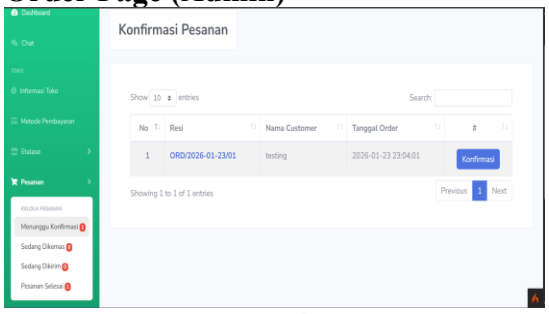

Image 3. Order Page

The order page functions as an integrated transaction management module within the MySaffana system. This interface records product information, purchase quantity, total transaction value, and order status in a systematic manner. Unlike the previous manual system, where transaction data were separated from customer records, the implemented feature directly links each order to specific customer profile.

This integration ensures that every transaction contributes to cumulative customer data, enables more comprehensive monitoring of purchasing behavior. From a managerial perspective, the system improves transaction traceability and reduces the risk of data inconsistencies or duplication. The centralized recording process also supports more accurate sales tracking and enhances operational efficiency. As a result, the order management feature not only simplifies transaction documentation but also reinforces the data foundation required for effective customer relationship management.

Sales Report Page (Admin)

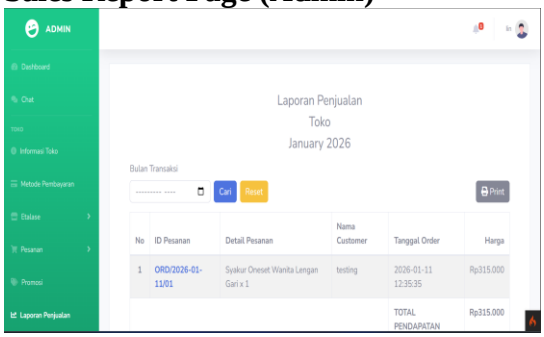

Image 4. Sales Report Page

The Sales Report Page provides periodic summaries of transaction data, including the number of transactions and total sales within a selected time frame. This feature transforms raw transaction records into structured information that can be used to evaluate business performance. Previously, sales evaluation required manual calculation and compilation of transaction books, which was time-consuming and prone to error.

JURTEKSI (Jurnal Teknologi dan Sistem Informasi) ISSN 2407-1811 (Print)
Vol XII No 2, Maret 2026, hlm. 231 –238 ISSN 2550-0201 (Online)
DOI: https://doi.org/10.33330/jurteksi.v12i2.4435
Available online at https://jurnal.stmikroyal.ac.id/index.php/jurteksi

Table 2. Black Box Testing Results

No	Module	Test Description	Status
1	Login	Email and password verification	Valid
2	Product Category	Input and store category data	Valid
3	Product	Input and manage product data	Valid
4	Customer Data	Display registered customer data	Valid
5	Shopping Cart	Add product to cart	Valid
6	Checkout	Record transaction to database	Valid
7	Transaction	Display order status	Valid
8	Profile	Update user profile data	Valid
9	Shipping Address	Store shipping address	Valid
10	Voucher	Apply voucher during checkout	Valid

With the automated reporting function, sales data can be generated quickly and accurately, enabling effective monitoring of business performance. The periodic reports help the boutique owner identify sales trends and support strategic decisions such as promotional planning and inventory management. Thus, the reporting feature enhances both administrative efficiency and decision-making quality.

CONCLUSION

This research designed and implemented a web-based Electronic Customer Relationship Management (E-CRM) system, MySaffana, to optimize customer and transaction data management at Saffana Gallery Boutique. The results show that the system successfully transforms manual record-keeping into an integrated digital platform that centralizes customer profiling, transaction tracking, and automated sales reporting, thereby improving operational efficiency and managerial control. The implementation of MySaffana strengthens data-driven decision-making and supports long-term customer relationship management in small-scale retail businesses. Therefore, this study provides a practical E-CRM implementation model that can be adapted by similar boutique enterprises to enhance competitiveness through integrated customer data management.

BIBLIOGRAPHY

[1] M. Chaidir and D. Irawan, “Strategi Pemasaran Digital: Memahami Perjalanan Konsumen Di Era Digital,” CITIZEN: Jurnal Ilmiah Multidisiplin Indonesia, vol. 4, no. 4, 2024, doi: 10.53866/jimi.v4i4.650.

[2] J. Manajemen and S. Ekonomi, “Strategi e-CRM Untuk Meningkatkan Kepuasan Konsumen : Sebuah Literatur Review,” 2022. [Online]. Available: http://journal.stiestekom.ac.id/index.php/dinamikapage64

[3] R. Alshurideh, M. Al-Dmour, and B. Masa’deh, “The role of digital customer relationship management in enhancing customer engagement and loyalty,” IInternational Journal of Data and Network Science, vol. 6, no. 4, pp. 1231–1242, 2022.

[4] J. Nicolas, N. Sri, and E. Adriana, "Peran e-CRM dalam Bisnis di Era Digital," vol. 4, pp. 78–90, 2024.

[5] M. A. Al-Dmour, R. Alshurideh, and B. Masa'deh, "The impact of electronic customer relationship management on customer retention: The mediating role of customer satisfaction," IInternational Journal of Data and Network Science, vol. 6, no. 3, pp. 843–856, 2022.

[6] A. K. S. Alshurideh, B. Kurdi, and M. Alhamad, "The role of information systems in enhancing organizational performance: A systematic review," IInternational Journal of Information Management Data Insights, vol. 3, no. 1, pp. 1–12, 2023.

[7] S. Gupta and R. Misra, "Information systems integration and organizational efficiency: A contemporary review," Journal of Enterprise Information Management, vol. 36, no. 2, pp. 455–472, 2023.

[8] L. I. A. Irma Hartiwi And H. Rokhayati, "Analisis Kualitas Sistem, Kualitas Informasi Dan Kualitas Layanan Terhadap Kepuasan Pengguna Pada Sistem Aplikasi Keuangan Tingkat Instansi Satuan Kerja," Jurnal Manajemen, vol. 20, no. 1, Jan. 2024, doi: 10.25170/jm.v20i1.4457.

[9] H. Alzoubi and R. Yanamandra, "Data quality and decision-making effectiveness in digital business environments," International Journal of Information Management Data Insights, vol. 2, no. 2, pp. 100–123, 2022.

[10] N. Made et al., "Universitas Ngurah Rai (Sunari) Menggunakan Metode Delone And Mclean," Jurnal Ilmu Komputer Indonesia (JIK), vol. 7, no. 2, 2022.

[11] A. Muslih, "Sistem Informasi Akuntansi Yang Berkualitas Dan Dampaknya Terhadap Kualitas Informasi Akuntansi".

[12] S. Alshamaila, S. Papagiannidis, and F. Li, "Information systems development and business process alignment: A contemporary review," Journal of Enterprise Information Management, vol. 35, no. 4, pp. 1025–1043, 2022.

[13] M. A. Hossain, M. S. Hossain, and R. Ahmed, "Applied research in information systems: Bridging theory and practical implementation," IInternational Journal of Information Management Data Insights, vol. 2, no. 2, pp. 1–10, 2022.