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ANALYSIS AND DESIGN OF A WEB-BASED SALES INFORMATION SYSTEM USING THE RAPID APPLICATION DEVELOPMENT METHOD: A CASE STUDY OF LARGURDA AM STORE

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Abstract
The rapid growth of information technology has transformed business practices, encouraging small and medium-sized enterprises (SMEs) to adopt digital platforms to improve operational efficiency and market competitiveness. However, many retail businesses continue to rely on conventional sales management practices that limit transaction efficiency, customer engagement, and business expansion. Largurda AM Store, a fashion retail business located in Cilacap, Indonesia, still performs sales recording manually and utilizes social media as its primary promotional medium, resulting in inefficient transaction management and limited market reach. This study aims to analyze, design, and develop a web-based sales information system using the Rapid Application Development (RAD) method to address these challenges. The research employed a Research and Development (R&D) approach by integrating requirement analysis, system design, rapid prototyping, implementation, and functional evaluation. Data were collected through observations, interviews, questionnaires, and documentation involving the store owner and prospective system users. The developed system was implemented using the Laravel framework and MariaDB database to provide integrated features for product management, customer registration, online ordering, inventory monitoring, payment processing, and sales reporting. The findings indicate that the proposed web-based sales information system successfully digitalizes the sales process, improves transaction accuracy, accelerates report generation, enhances inventory control, and expands marketing opportunities through online accessibility. Furthermore, the RAD methodology enables rapid system development while facilitating continuous user feedback during the development cycle. The study concludes that implementing a web-based sales information system significantly improves business effectiveness and provides a scalable technological solution for small retail enterprises seeking digital transformation.

Keywords: sales information system, rapid application development, web-based application, e-commerce, digital business

Abstrak

Perkembangan teknologi informasi telah mengubah praktik bisnis secara signifikan dan mendorong usaha mikro, kecil, dan menengah (UMKM) untuk mengadopsi platform digital guna meningkatkan efisiensi operasional serta daya saing bisnis. Namun demikian, masih banyak pelaku usaha ritel yang mengelola proses penjualan secara konvensional sehingga menghambat efisiensi transaksi, pengelolaan pelanggan, serta perluasan pasar. Largurda AM Store sebagai toko fashion di Kabupaten Cilacap masih melakukan pencatatan penjualan secara manual dan memanfaatkan media sosial sebagai sarana utama promosi, sehingga proses pengelolaan transaksi belum berjalan secara optimal. Penelitian ini bertujuan menganalisis, merancang, dan mengembangkan sistem informasi penjualan berbasis web menggunakan metode Rapid Application Development (RAD). Penelitian menggunakan pendekatan Research and Development (R&D) melalui tahapan analisis kebutuhan, perancangan sistem, pengembangan prototipe, implementasi, dan evaluasi sistem. Pengumpulan data dilakukan melalui observasi, wawancara, kuesioner, dan dokumentasi dengan melibatkan pemilik toko serta calon pengguna sistem. Sistem dikembangkan menggunakan framework Laravel dan basis data MariaDB yang menyediakan fitur pengelolaan produk, registrasi pelanggan, pemesanan daring, pengelolaan stok, transaksi pembayaran, serta pelaporan penjualan. Hasil penelitian menunjukkan bahwa sistem informasi yang dikembangkan mampu mendigitalisasi proses penjualan, meningkatkan akurasi transaksi, mempercepat penyusunan laporan, mengoptimalkan pengelolaan persediaan, serta memperluas jangkauan pemasaran melalui media daring. Selain itu, penerapan metode RAD memungkinkan proses pengembangan berlangsung lebih cepat melalui keterlibatan aktif pengguna selama proses pengembangan. Penelitian ini menyimpulkan bahwa implementasi sistem informasi penjualan berbasis web mampu meningkatkan efektivitas operasional bisnis dan menjadi solusi digital yang adaptif bagi usaha ritel skala kecil dalam menghadapi transformasi digital.

Kata kunci: Sistem Informasi Penjualan, Rapid Application Development, Aplikasi Berbasis Web, E-Commerce, Transformasi Digital.

A. Introduction

The rapid advancement of information and communication technology (ICT) has fundamentally transformed business processes across various industrial sectors. Digital transformation has become a strategic necessity for organizations seeking to improve operational

efficiency, customer satisfaction, and competitive advantage. The integration of internet technology into commercial activities enables organizations to automate business processes, optimize data management, and expand market access beyond geographical boundaries (Laudon & Laudon, 2022). Consequently, web-based information systems have become one of the primary drivers of sustainable business growth, particularly for small and medium-sized enterprises (SMEs) (Turban et al., 2021).

Electronic commerce (e-commerce) represents one of the most significant applications of information technology in contemporary business. Through e-commerce platforms, customers can search for products, compare prices, complete online transactions, and monitor order status without visiting physical stores. At the same time, business owners benefit from lower operational costs, improved inventory management, broader marketing opportunities, and more effective customer relationship management (Chaffey, 2023). Previous studies indicate that implementing web-based sales information systems significantly improves transaction accuracy, business productivity, organizational efficiency, and decision-making quality (Pressman & Maxim, 2020). Therefore, digital transformation has become essential for retail businesses aiming to maintain competitiveness in the increasingly digital marketplace.

Despite these technological advancements, many SMEs in Indonesia continue to operate using conventional business processes. Sales transactions are commonly recorded manually using notebooks or paper receipts, inventory management remains disconnected from digital databases, and marketing activities primarily depend on social media platforms. Such practices often lead to inaccurate sales records, delayed reporting, inefficient inventory control, and limited customer data management (O'Brien & Marakas, 2019). These operational limitations reduce business efficiency and restrict opportunities for market expansion. Similar conditions were identified at Largurda AM Store, where promotional activities rely mainly on WhatsApp, Facebook, and Instagram, while transaction recording and inventory management are still performed manually. This condition limits marketing effectiveness and complicates business management (Fauzi, 2023).

Largurda AM Store is a fashion retail business located in Cilacap, Indonesia, serving more than 200 customers. Although the business continues to grow, several operational challenges remain unresolved. Sales reports are still prepared manually, inventory monitoring is not integrated into a computerized system, customer information is not systematically recorded, and

online transactions cannot be conducted through an integrated platform. Consequently, business owners experience difficulties in monitoring sales performance, analyzing customer purchasing behavior, maintaining inventory accuracy, and developing effective marketing strategies. Customers also experience limited access to product availability and online purchasing services, reducing service quality and business competitiveness (Fauzi, 2023).

Various software development methodologies have been implemented to develop sales information systems, including the Waterfall model, System Development Life Cycle (SDLC), Agile Software Development, and Rapid Application Development (RAD). The Waterfall model provides systematic development stages but requires relatively long development cycles and offers limited flexibility when user requirements change (Sommerville, 2021). Agile Software Development emphasizes adaptability and continuous improvement; however, frequent requirement modifications may complicate project management, particularly for small-scale organizations (Highsmith, 2020). In contrast, the Rapid Application Development (RAD) methodology emphasizes rapid prototyping, iterative development, and continuous user involvement, enabling developers to produce functional software within shorter development periods while accommodating user feedback throughout the development process (Pressman & Maxim, 2020).

Several previous studies have investigated the implementation of web-based sales information systems using different software development methodologies. Namira (2022) developed a web-based laundry administration system using the PIECES framework. Suryana (2019) designed an e-commerce sales information system using the RAD methodology and the CodeIgniter framework. Sofiani (2019) implemented an agricultural e-marketplace using the SDLC approach, while Ardiansyah (2023) developed a payroll information system using Laravel and Agile Software Development. Although these studies demonstrated the effectiveness of web-based information systems in improving business performance, relatively few studies have integrated the Laravel framework with the RAD methodology specifically for small fashion retail businesses while emphasizing rapid development, continuous stakeholder involvement, and comprehensive sales process integration (Namira, 2022; Suryana, 2019; Sofiani, 2019; Ardiansyah, 2023).

Based on the identified research gap, this study aims to analyze, design, and develop a web-based sales information system for Largurda AM Store using the Rapid Application

Development (RAD) methodology. The proposed system integrates product management, inventory monitoring, online ordering, payment processing, customer management, and sales reporting into a single web-based platform developed using the Laravel framework. The active involvement of users throughout the development process is expected to ensure that the resulting system effectively meets business requirements while minimizing development time and implementation risks.

The novelty of this research lies in integrating the Laravel framework with the Rapid Application Development methodology to develop a comprehensive web-based sales information system specifically designed for small-scale fashion retail businesses. Unlike previous studies that mainly focused on system functionality or conventional software development approaches, this research emphasizes rapid iterative development combined with continuous stakeholder participation to produce a practical, scalable, and user-oriented e-commerce platform. The findings are expected to contribute to the advancement of web-based information system development while providing practical recommendations for accelerating the digital transformation of SMEs in Indonesia.

B. Theoretical Study

1. Information System

An information system is an integrated combination of people, technology, business processes, software, databases, and communication networks designed to collect, process, store, and distribute information for supporting organizational operations and managerial decision-making (Laudon & Laudon, 2022). Information systems have evolved from simple data processing tools into strategic organizational resources capable of improving operational efficiency, enhancing service quality, and supporting competitive advantage in dynamic business environments (O'Brien & Marakas, 2019).

In business organizations, information systems facilitate the integration of various operational activities, including inventory management, sales transactions, financial reporting, customer relationship management, and strategic planning. By utilizing computerized information systems, organizations can reduce human error, improve data accuracy, accelerate information retrieval, and generate real-time reports for managerial

decision-making (Stair & Reynolds, 2021). Consequently, information systems have become an essential component in supporting business digitalization and organizational sustainability.

Within the context of this study, a web-based sales information system functions as an integrated platform that automates business transactions at Largurda AM Store. The system enables business owners to manage product information, monitor inventory, record sales transactions, process customer orders, and generate sales reports efficiently. The implementation of such a system is expected to improve operational effectiveness while supporting business expansion through digital technology.

2. Web-Based Sales Information System

A sales information system is a computerized information system developed to support the entire sales process, beginning with product management, customer ordering, transaction processing, inventory control, and financial reporting (Romney & Steinbart, 2021). The implementation of sales information systems enables organizations to improve transaction accuracy, accelerate business processes, and provide reliable information for managerial decision-making.

The development of web technology has transformed conventional sales information systems into web-based applications that are accessible through internet-connected devices. Unlike desktop-based applications, web-based systems allow customers and business owners to access information anytime and anywhere without installation constraints. This flexibility improves organizational responsiveness while increasing customer satisfaction through faster and more convenient services (Shelly & Rosenblatt, 2020).

For retail businesses, web-based sales information systems provide integrated business management by connecting inventory management, online ordering, payment confirmation, delivery tracking, and customer databases within a single platform. These capabilities enable business owners to monitor operational performance in real time while improving customer experiences through online shopping facilities. Therefore, implementing web-based sales information systems has become an essential strategy for SMEs undergoing digital transformation.

3. Electronic Commerce (E-Commerce)

Electronic commerce (e-commerce) refers to the process of conducting commercial transactions electronically through internet technologies, including product promotion,

purchasing, selling, payment processing, and customer service (Turban et al., 2021). The rapid development of internet infrastructure has significantly accelerated the adoption of e-commerce across various business sectors, allowing organizations to reach broader markets without geographical limitations.

E-commerce provides numerous advantages for businesses, including lower operational costs, increased marketing effectiveness, enhanced customer engagement, and continuous business operations regardless of time or location (Chaffey, 2023). Customers also benefit from convenient product searching, online payment options, transparent pricing, and real-time order tracking, resulting in higher levels of customer satisfaction and purchasing convenience.

For SMEs, implementing e-commerce contributes substantially to business competitiveness by expanding market access and improving operational efficiency. Rather than relying solely on social media or conventional sales methods, businesses can establish dedicated online platforms that provide greater control over branding, customer databases, and transaction management. Consequently, e-commerce serves as a strategic instrument for sustainable business growth in the digital economy.

4. Laravel Framework

Laravel is an open-source PHP framework designed to simplify web application development by implementing the Model-View-Controller (MVC) architectural pattern. Since its introduction by Taylor Otwell, Laravel has become one of the most widely adopted PHP frameworks because of its elegant syntax, extensive libraries, robust security features, and comprehensive development tools (Stauffer, 2019).

Laravel provides numerous built-in features that simplify software development, including authentication, routing, database migration, object-relational mapping (ORM) through Eloquent, middleware, caching, validation, and RESTful API support. These features significantly reduce development complexity while improving application maintainability, scalability, and security (Ballen, 2022).

The MVC architecture implemented in Laravel separates business logic, user interface, and database management into independent components, facilitating software maintenance and future system enhancements. In this research, Laravel serves as the primary development framework for constructing an integrated web-based sales information system

because it supports rapid development, modular programming, and efficient database management.

5. Rapid Application Development (RAD)

Rapid Application Development (RAD) is a software development methodology emphasizing rapid prototyping, iterative development, and continuous user involvement throughout the software development lifecycle (Pressman & Maxim, 2020). Unlike traditional sequential development approaches, RAD focuses on producing functional prototypes quickly so that users can evaluate system functionality and provide immediate feedback for subsequent improvements.

The RAD methodology generally consists of four major phases: requirements planning, user design, rapid construction, and implementation. During the requirements planning phase, developers collaborate closely with stakeholders to identify business needs. The user design phase focuses on prototype creation and iterative refinement based on user feedback. Rapid construction involves system coding and integration, while implementation includes testing, deployment, and user training (Kendall & Kendall, 2020).

The primary advantage of RAD lies in its ability to reduce development time while maintaining software quality through continuous stakeholder participation. This methodology is particularly appropriate for small and medium-sized software projects where business requirements may evolve during development. Because Largurda AM Store requires a practical solution that can be implemented within a relatively short timeframe while actively involving the business owner throughout the development process, RAD represents the most suitable development methodology for this research.

6. Unified Modeling Language (UML)

Unified Modeling Language (UML) is a standardized visual modeling language used to analyze, design, and document software systems (Booch, Rumbaugh, & Jacobson, 2005). UML provides graphical representations of system architecture, business processes, user interactions, and software components, enabling effective communication among developers, analysts, and stakeholders.

Several UML diagrams are commonly employed in information system development, including use case diagrams, activity diagrams, sequence diagrams, class diagrams, and deployment diagrams. Each diagram represents different perspectives of the software system,

facilitating comprehensive system analysis before implementation (Dennis, Wixom, & Tegarden, 2020).

In this study, UML serves as the primary modeling tool for designing the web-based sales information system. Use case diagrams identify user interactions with the system, activity diagrams illustrate business process workflows, sequence diagrams describe communication among system components, and class diagrams define database structures and object relationships. The utilization of UML contributes to systematic system development and improves the accuracy of software implementation.

7. Conceptual Framework

This study is based on the assumption that integrating a web-based sales information system with the Rapid Application Development methodology can significantly improve operational efficiency in retail businesses. The independent variable is the implementation of a web-based sales information system developed using Laravel and the RAD methodology, whereas the dependent variables include transaction efficiency, inventory management accuracy, customer service quality, sales reporting effectiveness, and business decision-making quality.

The conceptual framework suggests that rapid iterative development supported by continuous user participation enables the developed system to accurately address organizational requirements. The integration of product management, inventory monitoring, online transactions, payment processing, and reporting within a single web platform is expected to improve business performance while accelerating the digital transformation of small retail enterprises. Therefore, this study contributes both theoretically to information system development literature and practically to the implementation of digital technologies within SMEs.

C. Research Methodology

This study employed the Research and Development (R&D) approach to develop a web-based sales information system for Largurda AM Store using the Rapid Application Development (RAD) methodology. The R&D approach was selected because it emphasizes the systematic development, testing, and evaluation of technological products to address

practical problems encountered by users (Borg & Gall, 2003). Meanwhile, the RAD methodology was adopted to accelerate system development through iterative prototyping and continuous user involvement, allowing software improvements to be implemented efficiently according to business requirements (Pressman & Maxim, 2020). The research was conducted at Largurda AM Store, a fashion retail business in Cilacap, Indonesia, where sales transactions, inventory management, and reporting were still performed manually, resulting in operational inefficiencies and limited business development opportunities (Fauzi, 2023).

Data were collected through observation, interviews, documentation, and questionnaires to obtain comprehensive information regarding the existing business processes and user requirements. Observation was conducted to identify sales activities, inventory management, and transaction workflows, while semi-structured interviews with the store owner explored operational challenges and expectations for the proposed system (Creswell & Creswell, 2018). Documentation was utilized to collect supporting business records, including sales reports and inventory data, whereas questionnaires were distributed to prospective users to evaluate usability and system functionality. Based on these findings, the system requirements were analyzed and translated into system models using Unified Modeling Language (UML), including use case, activity, sequence, and class diagrams, before being implemented using the Laravel framework and MariaDB database.

The development process followed the four stages of the Rapid Application Development (RAD) model, namely Requirements Planning, User Design, Rapid Construction, and Implementation (Pressman & Maxim, 2020). During the implementation stage, the system integrated modules for product management, customer management, inventory control, online transactions, payment confirmation, and sales reporting. Functional verification was conducted using Black-Box Testing to ensure that each feature operated according to its specifications, while user evaluation assessed usability, interface quality, transaction efficiency, and overall user satisfaction (Nielsen, 2012). The collected data were analyzed descriptively by comparing business conditions before and after system implementation to evaluate the effectiveness of the developed web-based sales information system in supporting the digital transformation of small retail enterprises.

D. Results and Discussion

The initial stage of this research focused on analyzing the existing business processes at Largurda AM Store to identify operational problems and determine the functional requirements of the proposed web-based sales information system. The analysis revealed that most business activities were still performed manually. Sales transactions were recorded in notebooks, inventory updates were conducted manually, and sales reports were prepared periodically through handwritten documentation. Promotional activities depended primarily on social media platforms, such as WhatsApp, Facebook, and Instagram, without being integrated into a dedicated e-commerce platform. Consequently, business operations were inefficient, transaction records were vulnerable to human error, and the preparation of managerial reports required considerable time and effort. Similar findings have been reported by Laudon and Laudon (2022), who state that organizations relying on manual information processing frequently experience data redundancy, reporting delays, and limited managerial control over business operations. The findings therefore indicate an urgent need for digital transformation through an integrated information system capable of supporting operational efficiency and improving business performance.

Further investigation identified several critical operational issues that affected the effectiveness of business management. First, sales reports were manually documented, resulting in unstructured data storage and increasing the possibility of data loss or duplication. Second, inventory management lacked real-time monitoring, making it difficult for business owners to identify product availability and anticipate stock shortages. Third, customer information was not systematically stored, preventing the business from analyzing purchasing behavior or implementing customer relationship management strategies. Fourth, the absence of an integrated online sales platform limited market expansion because customers could only obtain product information through social media and direct communication. Finally, business owners experienced difficulties in generating comprehensive sales reports for evaluating business performance and supporting strategic decision-making. These operational limitations are consistent with previous studies emphasizing that SMEs require integrated information systems to improve data accuracy, inventory management, and customer service quality (Romney & Steinbart, 2021; O'Brien & Marakas, 2019).

Based on the identified problems, a comprehensive system requirements analysis was conducted to determine the functional and non-functional requirements of the proposed application. Functional requirements included user authentication, product management, category

management, inventory monitoring, customer registration, shopping cart functionality, online ordering, payment confirmation, order management, and sales reporting. These features were designed to automate the complete sales cycle from product publication to transaction reporting. Non-functional requirements focused on system security, reliability, usability, responsiveness, and database integrity to ensure stable application performance. The identification of these requirements was accomplished through observations, interviews, and documentation involving the store owner, ensuring that the developed system accurately reflected actual business needs. According to Pressman and Maxim (2020), comprehensive requirement analysis is one of the most critical stages in software engineering because it determines the overall success of information system implementation by minimizing communication errors between developers and end users.

Following the requirements analysis, the proposed system was designed using the Rapid Application Development (RAD) methodology, which emphasizes rapid prototyping and continuous stakeholder participation throughout the software development lifecycle. During the Requirements Planning stage, researchers collaborated closely with the business owner to define operational workflows and prioritize essential system features. The User Design stage translated these requirements into system models using Unified Modeling Language (UML), including use case diagrams, activity diagrams, sequence diagrams, and class diagrams. These models provided a structured representation of user interactions, business processes, database relationships, and system architecture before implementation. Continuous feedback obtained during prototype evaluation enabled iterative improvements, ensuring that the final system aligned closely with user expectations. This iterative development process supports the findings of Kendall and Kendall (2020), who argue that active stakeholder participation significantly improves software quality while reducing development risks.

The findings of the needs analysis demonstrate that implementing a web-based sales information system provides substantial opportunities to improve operational efficiency at Largurda AM Store. Digitalizing transaction processing eliminates repetitive manual recording, while integrated inventory management enables real-time stock monitoring and automatic inventory updates following every transaction. Customer registration and transaction history also facilitate the implementation of customer relationship management strategies, allowing businesses to analyze purchasing behavior and develop targeted promotional programs.

Moreover, online accessibility enables customers to browse products, place orders, and complete transactions without geographical limitations, thereby expanding market reach and increasing business competitiveness. These findings reinforce the argument of Turban et al. (2021) that web-based information systems not only automate operational activities but also function as strategic tools for enhancing customer satisfaction, business agility, and organizational competitiveness in the digital economy.

Following the completion of the system requirements analysis, the proposed web-based sales information system was developed using the Rapid Application Development (RAD) methodology. The development process emphasized rapid prototyping, iterative refinement, and continuous collaboration with stakeholders to ensure that the final application met the operational requirements of Largurda AM Store. The system was implemented using the Laravel Framework, which applies the Model-View-Controller (MVC) architecture to separate business logic, user interfaces, and database management into independent components. This architecture improves software maintainability, scalability, and security while facilitating future system enhancement (Stauffer, 2019). The application utilized MariaDB as the database management system to ensure efficient data storage, transaction processing, and report generation. By integrating these technologies, the developed system provides a reliable platform capable of supporting daily business operations in a digital environment.

The developed application consists of several integrated modules designed to automate the entire sales process. The administrator module enables business owners to manage product categories, product information, inventory levels, promotional banners, customer accounts, sales transactions, payment verification, and sales reports through a centralized dashboard. Inventory data are automatically updated whenever a transaction is completed, thereby reducing the possibility of stock discrepancies. In addition, the reporting module generates real-time sales summaries, allowing business owners to evaluate business performance more efficiently than the previous manual reporting system. The customer module provides functionalities for account registration, product searching, shopping cart management, online ordering, payment confirmation, order tracking, and transaction history. The integration of these modules creates a seamless business workflow that improves communication between customers and business administrators while reducing administrative workloads. Such findings support the argument of

Romney and Steinbart (2021) that integrated information systems improve organizational efficiency by connecting operational functions into a unified digital platform.

The effectiveness of the developed system was evaluated through Black-Box Testing, which focused on validating whether each functional component operated according to the predefined system requirements without analyzing the internal program code (Pressman & Maxim, 2020). The testing covered major application features, including user authentication, product management, inventory updates, online ordering, shopping cart operations, payment confirmation, transaction processing, and report generation. The evaluation results demonstrated that all functional modules operated successfully and produced outputs consistent with the expected system specifications. Login authentication accurately distinguished administrator and customer access rights, inventory quantities were automatically synchronized after each successful transaction, payment confirmations were processed correctly, and sales reports were generated dynamically based on transaction data stored in the database. These findings indicate that the developed application satisfies both functional and operational requirements for supporting business activities at Largurda AM Store.

User evaluation further demonstrated the practical benefits of implementing the proposed web-based sales information system. Compared with the previous manual business process, the digital platform significantly reduced the time required to record transactions, update inventory, and prepare sales reports. Business owners reported that the availability of real-time sales information enabled them to monitor business performance more effectively and make faster managerial decisions regarding inventory replenishment, promotional strategies, and product management. Customers also experienced improved service quality because they could access product information, verify stock availability, place online orders, and monitor purchase status through a single web application. These findings are consistent with previous studies by Chaffey (2023) and Turban et al. (2021), which concluded that web-based information systems enhance customer satisfaction, improve transaction efficiency, and strengthen organizational competitiveness through digital service delivery.

From a broader perspective, the successful implementation of the proposed system demonstrates the suitability of the Rapid Application Development (RAD) methodology for developing information systems within small and medium-sized enterprises (SMEs). Continuous user participation throughout the development process enabled rapid identification of changing

requirements and immediate refinement of system prototypes, thereby minimizing development risks and ensuring high user acceptance. Furthermore, the flexibility of the Laravel framework allows future integration with additional technologies such as online payment gateways, business intelligence dashboards, customer relationship management (CRM) modules, and mobile applications. Consequently, the developed web-based sales information system not only resolves current operational problems but also establishes a scalable technological foundation that supports sustainable digital transformation and long-term business growth for Largurda AM Store.

The implementation of the web-based sales information system demonstrates that digital transformation provides substantial improvements in the operational performance of Largurda AM Store. Prior to system implementation, business activities such as transaction recording, inventory management, customer data administration, and sales reporting were conducted manually, resulting in repetitive administrative work, inconsistent data, and delays in managerial reporting. After implementation, these activities became fully integrated within a single web-based platform, allowing business owners to monitor sales transactions, product availability, customer information, and financial reports in real time. The automation of business processes significantly reduced administrative errors while improving the accuracy and reliability of business information. These findings support the view of Laudon and Laudon (2022) that integrated information systems enhance organizational efficiency by providing timely, accurate, and accessible information for operational and strategic decision-making.

The implementation results also indicate that the developed system contributes to improving customer experience and business competitiveness. Through the online platform, customers can browse product catalogs, obtain updated stock information, place orders, confirm payments, and monitor transaction status without visiting the physical store. This digital service improves accessibility and convenience while expanding the marketing reach beyond the local community. Unlike the previous business model, which relied mainly on social media promotion, the integrated web application enables Largurda AM Store to establish a more professional online presence and maintain complete control over customer data and transaction records. According to Chaffey (2023), web-based business platforms not only facilitate electronic transactions but also strengthen customer engagement and increase organizational competitiveness through enhanced digital services.

Another important finding concerns the effectiveness of the Rapid Application Development (RAD) methodology in accelerating software development. Continuous communication between researchers and users throughout the development process enabled system prototypes to be evaluated and refined repeatedly until they met business requirements. This iterative approach reduced misunderstandings regarding system specifications and minimized development risks commonly encountered in traditional software development models. Furthermore, active user participation increased system acceptance because the developed application reflected actual operational needs. These findings are consistent with Pressman and Maxim (2020), who emphasize that RAD enables organizations to deliver high-quality software within relatively short development cycles while maintaining flexibility toward changing user requirements.

The findings of this study also have important theoretical and practical implications. Theoretically, this research enriches the literature on information system development by demonstrating the successful integration of the Laravel Framework and the Rapid Application Development methodology in designing a web-based sales information system for small retail enterprises. The study confirms that iterative software development combined with user-centered design can produce systems that are both technically reliable and operationally relevant. Practically, the developed application provides an effective technological solution for SMEs seeking to improve operational efficiency, inventory management, sales reporting, and customer services through digital transformation. The system architecture is sufficiently flexible to accommodate future enhancements, including electronic payment gateways, mobile applications, customer relationship management (CRM), business intelligence dashboards, and artificial intelligence–based sales forecasting, thereby supporting long-term business sustainability.

Overall, the results demonstrate that the proposed web-based sales information system successfully achieves the objectives of this research. The integration of product management, inventory control, customer management, online transactions, payment verification, and reporting within a unified application has significantly improved business operations at Largurda AM Store. Moreover, the adoption of the Rapid Application Development methodology enabled efficient software development while ensuring that the final product corresponded closely with user expectations. Therefore, this study concludes that implementing an integrated web-based sales information system represents a practical and effective strategy for supporting the digital

transformation of small and medium-sized retail enterprises, enabling them to improve service quality, strengthen managerial decision-making, and enhance competitiveness in the increasingly digital business environment.

E. Conclusion and Suggestions

This study successfully designed and developed a web-based sales information system for Largurda AM Store using the Rapid Application Development (RAD) methodology. The implementation of the system successfully integrated product management, customer management, inventory control, online transactions, payment confirmation, and sales reporting into a single web-based platform. The findings demonstrate that the developed system effectively addresses the operational limitations of the previous manual business process by improving transaction accuracy, reducing administrative workloads, facilitating real-time inventory monitoring, and accelerating sales report generation. Furthermore, the application enhances customer service by providing online product access, ordering facilities, and transaction tracking, thereby supporting business competitiveness in the digital marketplace. The successful implementation also confirms that the RAD methodology is an appropriate software development approach for small and medium-sized enterprises because it enables rapid system development while ensuring continuous user participation throughout the development process.

From a theoretical perspective, this research contributes to the literature on information system development by demonstrating the practical integration of the Laravel Framework and the Rapid Application Development methodology in developing a web-based sales information system for small retail enterprises. Practically, the developed application provides an effective digital solution that supports operational efficiency, business management, and customer satisfaction while facilitating the digital transformation of SMEs. Nevertheless, this study is limited to a single case study and focuses primarily on core sales management functions. Therefore, future research is recommended to enhance the developed system by integrating advanced features such as electronic payment gateways, mobile applications, customer relationship management (CRM), business intelligence dashboards, and artificial intelligence-based sales forecasting. Comparative studies involving multiple retail businesses are also recommended to evaluate the scalability, effectiveness, and broader applicability of the proposed system across different business environments.

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