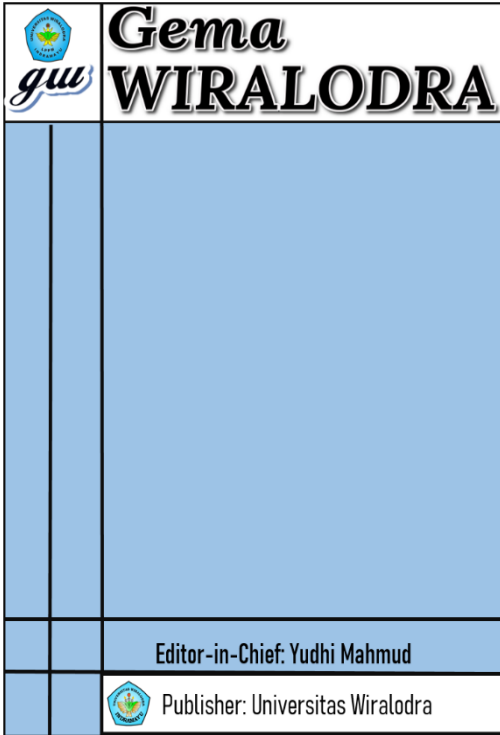




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Development of The Digital-Based Business Model for Marhani Grosir

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Abstract

This study aims to design and develop a digital business model for Marhani Grosir based on partnerships by utilizing the Value Proposition Design (VPD) and Business Model Canvas (BMC) approaches. The main focus of the research is to understand the needs of MSME partners and consumers as the foundation for strengthening services and improving the existing cashier application for partners. The method used is a qualitative descriptive approach, with data collected through in-depth interviews with store owners, business partners, consumers, and IT technicians. The collected data were then analyzed to map the key elements in VPD and BMC, which were formulated into the design of a digital application mockup. The research findings show that MSME partners require a digital system that facilitates restocking, records transactions, and monitors inventory in real time. Consumers seek product information transparency, fast delivery services, and clear promotional features. The developed cashier application has addressed most of these needs, although challenges remain, such as the absence of multi-account features, limited integration of digital payments, and internet network barriers. This study highlights the importance of strengthening digital elements in local wholesale business models to support operational efficiency and customer loyalty. Further strategies are recommended in the form of application feature updates, improved distribution systems, and the expansion of digital-based partnerships. By adopting a user-centered approach, Marhani Grosir can enhance its competitiveness amidst the growing digital transformation of the market

Keywords: Digital Business Model, MSMEs, Value Proposition Design, Business Model Canvas, Cashier Application, Marhani Grosir.

1. Introduction

The rapid advancement of technology has significantly transformed the way businesses operate, particularly in how they adapt to increasing digitalization. Digital transformation has emerged as a strategic imperative for businesses seeking to remain competitive and efficient in today's market landscape. Through digital tools, companies can enhance customer engagement, optimize operational processes, and innovate service delivery (Sanjaya & Tarigan, 2019). This shift marks a departure from traditional business models, urging enterprises of all sizes to embrace new technologies for survival and growth. The COVID-19 pandemic served as a major catalyst for digital transformation across sectors. First reported in Wuhan, China, in late 2019 and declared a global pandemic by the World Health Organization (WHO) on March 11, 2020, COVID-19 disrupted global supply chains and consumer behaviors. In Indonesia, social distancing policies and movement restrictions forced a behavioral shift where consumers increasingly relied on online transactions for daily necessities (WHO, 2020). These circumstances accelerated digital adoption among businesses, especially in the retail and wholesale sectors.

The rise of e-commerce and digital platforms became a critical response mechanism to the pandemic's economic impact. Many enterprises ranging from small businesses to large corporations pivoted toward digital ecosystems to sustain operations. This trend not only improved accessibility for consumers but also enabled businesses to minimize costs and streamline logistics and inventory systems (Sanjaya & Tarigan, 2019; OECD, 2020). Consequently, digitalization has shifted from being a temporary solution to a fundamental component of long-term business strategy.

In this context, Marhani Grosir, a wholesale store located in Timika, Papua, exemplifies the local business response to digital disruption. Specializing in household essentials at competitive bulk prices, Marhani Grosir initially operated through conventional brick-and-mortar outlets. However, the challenges posed by COVID-19 including restricted mobility and changing consumer habits necessitated a re-evaluation of its operational model. Digital adaptation became not only relevant but crucial for survival and scalability.

To address these challenges, Marhani Grosir initiated the development of digital platforms, including a web and Android-based application to facilitate online shopping, order placement, and inventory tracking. Moreover, to support its network of business partners (primarily micro, small, and medium enterprises), the company introduced a cashier application. This app allows partners to monitor stock levels in real-time, record transactions, and streamline restocking processes. These initiatives aimed to increase operational efficiency and strengthen supply chain integration.

Nonetheless, the implementation of such digital systems brought new challenges that needed to be critically examined. These include the readiness of partners to adopt technology, the digital literacy levels among users, limitations in internet infrastructure, and the technical reliability of the application itself. Concerns around data security, usability, and multi-account features also emerged as critical areas requiring attention. A thorough assessment of these challenges is necessary to determine the system's effectiveness in supporting business operations and meeting user needs.

Therefore, this research addresses the gap in the literature regarding the lack of user-centered digital solutions for local wholesale businesses in remote areas. Specifically, it evaluates the implementation of the cashier application at Marhani Grosir, analyzes the challenges faced by MSME partners and consumers, and identifies opportunities for system improvement. Guided by the frameworks of Value Proposition Design (VPD) and Business Model Canvas (BMC), this study seeks to answer the following research questions: (1) What are the key user needs and expectations related to the digital system? (2) How effective is the current application in addressing those needs? (3) What strategic enhancements can be made to strengthen the digital business model? The objective of this research is to develop an optimized digital business model and propose actionable improvements to the application that support Marhani Grosir's operational efficiency, user satisfaction, and long-term competitiveness in the evolving digital economy.

2. Method

This study applied a qualitative descriptive research design using a case study approach. The research focused on the digital transformation of Marhani Grosir, a local wholesale business in Timika, Papua, with the aim of developing a business model and supporting digital system that aligns with user needs. The duration of the study was six months, covering proposal preparation, field research, analysis, and thesis finalization. The research subjects comprised

key stakeholders involved in Marhani Grosir's business ecosystem. These included the store owner, partner MSMEs (referred to as "mitra"), individual consumers (both online and offline), and internal IT technicians. These participants were selected purposively to ensure they could provide relevant insights related to operational needs, digital application usage, and strategic development.

Data collection involved three techniques. First, in-depth interviews were conducted with store owners, partner kiosks, and customers to explore their expectations, pain points, and user experiences related to the wholesale service and existing application. Second, observation was carried out at the physical store and online operations to gather first-hand information on user interaction, transaction processes, and system usability. Third, documentation analysis was employed to examine business records, transaction logs, organizational charts, previous application data, and strategic development plans.

The data were analyzed through two primary methods. The first stage involved descriptive analysis, used to summarize and interpret the overall condition and business characteristics of Marhani Grosir. The second stage applied Business Model Canvas (BMC) analysis, integrating the nine core components customer segments, value propositions, channels, customer relationships, revenue streams, key resources, key activities, key partnerships, and cost structure. Prior to constructing the BMC, a Value Proposition Design (VPD) framework was used to identify specific customer jobs, pains, and gains. This ensured that the resulting business model accurately reflected market and partner expectations.

To support strategic analysis, a SWOT framework was used to evaluate internal strengths and weaknesses as well as external opportunities and threats. The SWOT outcomes were mapped to the BMC elements, providing a foundation for formulating strategic recommendations for digital business model development. The technical design of the application followed the Waterfall model as the software development methodology. The Waterfall stages include system requirement analysis, system design, implementation planning, and documentation. In this research, system requirements were identified from interview findings and business process analysis. The application design included database architecture and user interface mockups tailored to the operational context of Marhani Grosir.

A use case diagram was developed to define system actors and interactions, identifying two user roles: admin and operator. The admin had full system access, while the operator was limited to product, stock, transaction, and supplier modules. Several activity diagrams were created to illustrate functional workflows for login, product input, inventory management, incoming/outgoing transactions, return handling, supplier management, account creation, and report generation. The final application was designed as a web and Android-based cashier system that supports real-time stock monitoring, transaction recording, and sales reporting. It is expected that this system will enhance the efficiency, accuracy, and scalability of Marhani Grosir's operations, while also strengthening digital partnerships with MSMEs in the region.

3. Results and Discussion

Development of the Marhani Grosir Partner Cashier Application

Marhani Grosir, a long-standing wholesale business operating in Mimika, Central Papua, has played a critical role in distributing household necessities such as staple food, snacks, beverages, and cleaning supplies. Over the past nine years, it has built strong ties with dozens of MSME partners, especially small kiosk owners and informal retail outlets scattered across

multiple districts. As market demands increased and operational complexity grew, Marhani Grosir recognized the limitations of its traditional systems, which relied heavily on manual processes and physical interactions. The onset of the COVID-19 pandemic further accelerated the urgency for digital transformation, prompting the development of the Partner Cashier Application a system designed to digitize transactions, optimize inventory management, and improve business efficiency.

This transformation was not merely a reaction to short-term disruption but a strategic shift toward long-term sustainability and competitiveness in the digital era. The application, accessible via both Android and web platforms, functions as a digital hub for partners to manage product orders, monitor inventory in real time, and access historical sales records. By leveraging digital tools, Marhani Grosir aims to enhance service quality, increase operational transparency, and strengthen its network of retail partners. The application's implementation marks an important milestone in the company's journey to become a modern, data-driven wholesale distributor (Osterwalder & Pigneur, 2010).

The app was designed to cater to two primary user groups: MSME partners and retail consumers. Each group exhibits unique transactional behavior and operational needs. MSME partners, who typically restock goods weekly, benefit most from real-time inventory tracking, wholesale price visibility, and order history access. These partners are concentrated in key urban districts and already display a fair degree of digital literacy. Despite this, challenges such as unstable application features, delayed deliveries, and outdated stock information remain. On the other hand, retail consumers often young working individuals or families aged 22–40 use the application for weekly purchases of household essentials. Their motivation lies in convenience, transparency, and the ability to shop flexibly outside conventional store hours. While many have embraced online ordering, proximity to the physical store and the desire to inspect goods firsthand keeps the offline option relevant, thus validating an omnichannel strategy.

From a technical perspective, the application introduces essential features such as barcode-based sales input, automated transaction recording, integrated reporting, and alert systems for low stock. These tools replace manual bookkeeping, reduce errors, and speed up the ordering process. For Marhani Grosir, the application also delivers significant advantages through back-end integration. It allows centralized inventory synchronization, customer data analysis, and more targeted promotional strategies. The system's capacity to generate real-time financial and sales insights empowers management with actionable data, supporting both day-to-day operations and long-term business planning.

In developing the application, a user-centered design approach was employed. Initial user needs were identified through qualitative methods interviews, observations, and document reviews involving nine key stakeholders, including store owners, IT personnel, and consumers. Based on this input, a mockup of the application was designed using wireframing tools like Balsamiq and later refined with Figma to create an interactive prototype. This process allowed for early validation of user workflows and interface logic, minimizing costly revisions in the development phase. Through simulation tests, key usability improvements were suggested, such as clearer navigation buttons, simplified menu sequences, and visual user guides for low-digital-literacy users.

To illustrate and refine user interactions, Use Case Diagrams and Flowcharts were constructed. These diagrams map the logical relationship between users and system functions, depicting key operations such as login, transaction execution, stock management, and report generation. The system recognizes two user roles admin and cashier/operator each with specific

access rights. Admins can manage users and access detailed financial reports, while cashiers focus on transactions and stock updates. The application also includes automated alerts and sales summaries, further aiding operational visibility and error reduction.

Initial mockup evaluations showed several strengths, including a simple, intuitive interface, responsive navigation, and flexible product input methods. Reports were visually presented through tables and graphs, enabling straightforward business evaluations. However, limitations were also identified: the lack of multi-user support, absence of profitability analytics, and no integration with digital payment methods like QRIS or e-wallets. These constraints highlight areas for further development to ensure scalability and future-proofing of the system (Sommerville, 2011).

Based on these findings, the thesis recommends several enhancements: incorporating multi-user access, expanding financial reporting features, and integrating digital payment gateways. It also encourages user testing with a diverse group of MSME partners to validate new functions and improve the application iteratively. The continued development of the Partner Cashier Application, grounded in real user needs and agile feedback loops, is essential not only for improving Marhani Grosir's internal efficiency but also for ensuring it remains competitive in an increasingly digitized wholesale market. Ultimately, this application represents more than a technological upgrade; it is a foundational step in reimagining how local wholesalers can thrive in the digital economy.

User Needs and Expectations Analysis

This section emphasizes a user-centered approach in the development of the Marhani Grosir Partner Cashier Application, aiming to align system features with the real needs of users. Data was gathered from nine informants, including the store owner, four MSME partners, three retail consumers, and one IT technician. Each provided unique insights from strategic business views to day-to-day operational challenges.

The store owner emphasized the importance of operational efficiency, accurate inventory data, and digital expansion to maintain customer loyalty. He highlighted issues such as reliance on internet connectivity and digital fatigue among consumers. Meanwhile, MSME partners expressed concerns about delivery delays, out-of-stock items, and occasional mismatches between orders and deliveries. They also noted the app's limited real-time stock updates and technical instability.

Retail consumers appreciated features like price transparency and product variety but raised concerns over delayed delivery estimates, stock inconsistencies, and lack of promotional integration within the app. They suggested improvements such as better customer service, digital queueing systems, and more accurate inventory visibility.

The IT technician acknowledged that the app includes key functionalities like product management and sales reporting. However, technical challenges persist, including real-time data synchronization, poor search accuracy, lack of multi-warehouse integration, and a non-user-friendly interface. Scalability, checkout usability, and digital payment integration (e.g., QRIS, e-wallets) were also flagged as critical development areas.

A synthesis of these findings revealed five key issues:

1. Inconsistent stock information between the app and physical store;
2. Delivery delays and mismatches in order fulfillment;

3. A non-intuitive user interface with confusing navigation;
4. Lack of integrated promotions and loyalty programs;
5. Technical limitations, including absence of multi-user support and advanced reporting.

As a result, the system must evolve from a reactive to a proactive management model, including regular data updates, feature enhancements, and user-driven testing cycles. The recommended strategy is to apply user-centered design and iterative development, ensuring the application remains functional, adaptable, and supportive of Marhani Grosir's broader digital transformation. Ultimately, the goal is to build a reliable, scalable, and sustainable digital platform that strengthens wholesale-retail partnerships in a competitive marketplace.

Strengthening the Digital Business Model of Marhani Grosir

After identifying user needs, analyzing the existing application system, and outlining the challenges faced, the next step is to formulate a strategy to strengthen Marhani Grosir's digital business model. This strategy aims to align system development with market needs and deliver greater value to both customers and partners. It is developed using the Value Proposition Design (VPD) framework, mapped through the Business Model Canvas (BMC), and supported by a SWOT analysis to assess the business's position within the digital wholesale ecosystem.

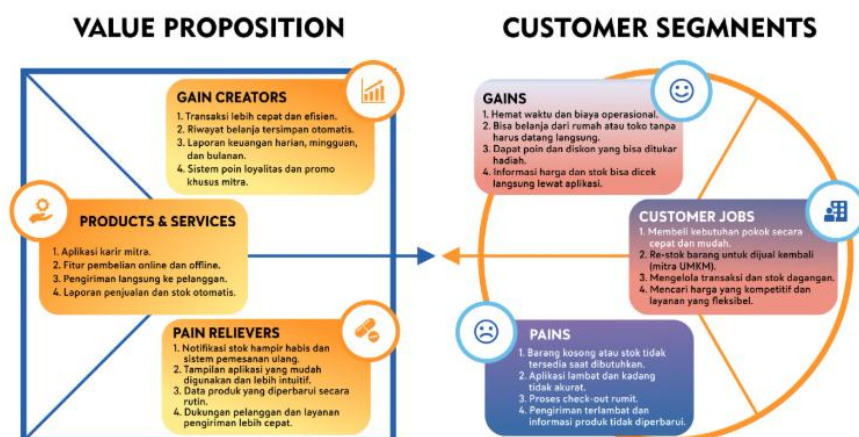
Value Proposition Design (VPD)

Value Proposition Design (VPD) is used to align Marhani Grosir's digital offerings with the actual needs of its two main user groups: MSME partners and household consumers. Based on interview findings, MSME partners focus on restocking, inventory control, and sales tracking but often face issues like out-of-stock items, delayed deliveries, and technical difficulties with the app. Meanwhile, household consumers prioritize convenience, price comparison, and efficient purchases, yet struggle with outdated product information, limited promotional features, and slow delivery services.

To address these concerns, Marhani Grosir developed a digital cashier application equipped with key features such as transaction recording, automatic reordering, real-time financial reports, and a loyalty system. The app also includes pain relievers like low-stock alerts, order tracking, and a user-friendly interface. As gain creators, the system offers competitive wholesale pricing, purchase rewards, and flexible ordering via both app and WhatsApp, ultimately aiming to enhance operational efficiency for MSMEs and provide a seamless shopping experience for individual consumers.

Figure 1.

Marhani Grosir Value Proposition Design Diagram



Based on Figure 1, the Value Proposition Design (VPD) of Marhani Grosir was developed from in-depth interviews with nine stakeholders store owners, MSME partners, household consumers, and an IT technician to align customer needs with digital service solutions. The VPD identifies key customer activities such as restocking goods, recording transactions, and shopping for daily essentials, alongside common pain points like limited stock information, delivery delays, and suboptimal app access. In response, Marhani Grosir designed app features including automated transactions, online ordering, stock tracking, and sales reports to directly address these challenges. Value is further enhanced through loyalty programs, digital discounts, and competitive wholesale pricing. This VPD approach strategically connects user experiences with system design, reinforcing both functional and emotional value such as trust and convenience and serves as a foundation for sustaining competitive advantage in local digital business transformation.

Table 1.

Mapping Value Proposition Design to Application Features

VPD Element	User Needs or Problems	App Features That Address Them
Customer Jobs	Restocking goods, recording transactions, efficient shopping - Unmonitored stock - Late deliveries	Digital ordering, automated cashier, shopping catalog - Real-time stock dashboard - Order tracking
Pains	- Difficult app interface - No promo information - Limited product information - Fast and easy ordering	- Simplified interface - Weekly promo feature - Updated digital product catalog - Instant ordering system
Gains	- Competitive wholesale prices - Smooth transactions - Earn points or discounts	- Loyalty program - Automatic digital discounts
Products and Services	Digital cashier app, shopping catalog, financial reports, communication system	Cashier module, interactive catalog, transaction reports, WhatsApp integration
Pain Relievers	Avoid stockouts, reduce transaction errors, fix delivery delays	Low stock notifications, automated reports, order tracking

VPD Element	User Needs or Problems	App Features That Address Them
Gain Creators	Provide convenience, trust, and added benefits through transactions	User-friendly interface, competitive prices, shopping points, and instant discounts

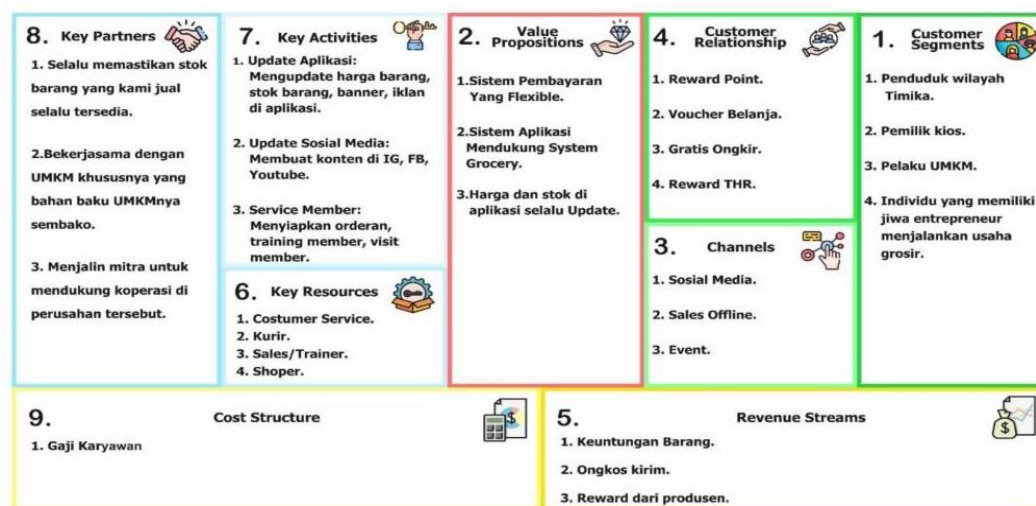
Based on Table 1 demonstrates how each user problem corresponds directly to system solutions, including a simplified interface, automated sales reports, and loyalty point systems. This user-centered approach ensures that every feature is grounded in real field data from nine diverse informants, making VPD not just a design tool but a decision-making framework that supports the creation of an adaptive, responsive, and satisfaction-driven digital business model.

Business Model Canvas (BMC)

The Business Model Canvas (BMC) is a strategic visual tool used to describe, analyze, and develop business models through nine core elements that represent how an organization creates, delivers, and captures value. In this study, BMC serves as a framework to assess and design the digital transformation of Marhani Grosir, ensuring it remains adaptive to shifting market behaviors and the needs of both MSME partners and retail consumers. At the initial stage, the research team developed a conceptual BMC prototype based on internal observations of store operations and customer requirements. This early mapping functioned as a foundational framework and assumption model, guiding further field data collection and refinement of the digital business model.

Figure 2.

Marhani Grosir Business Model Canvas (Pre-Interview)



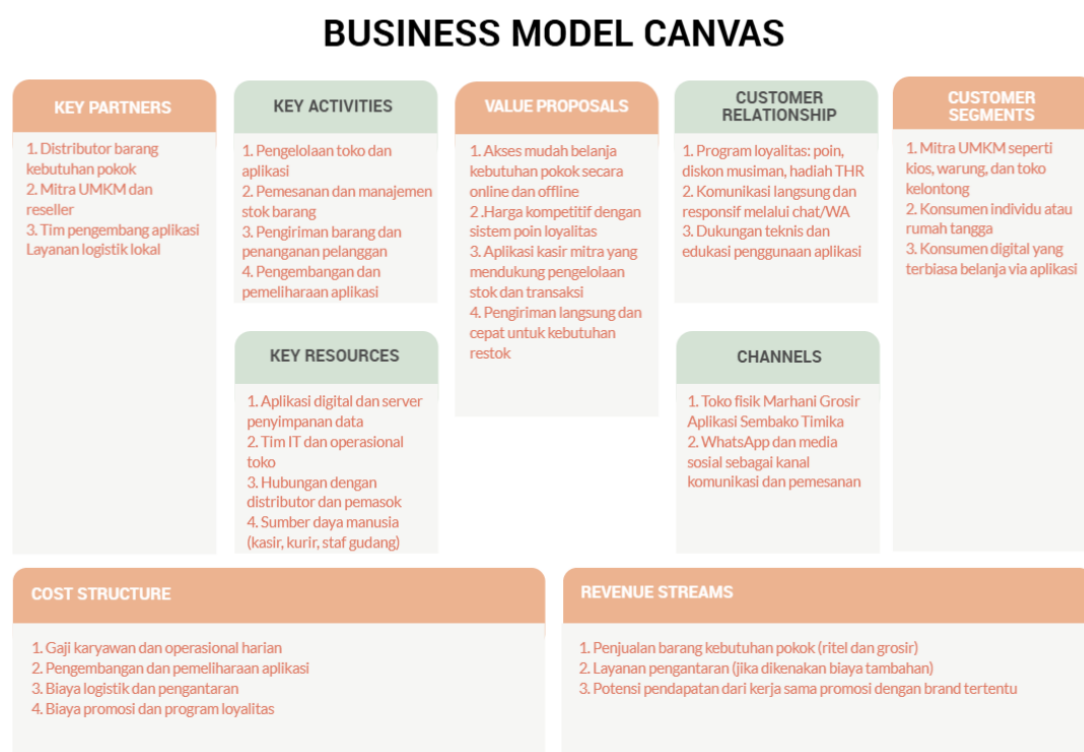
Based on Figure 2, the initial Business Model Canvas (BMC) of Marhani Grosir presents a conceptual framework developed from general observations of store operations, prior to conducting user interviews. This early model identified key components considered essential to support the digitalization of the wholesale business, targeting customer segments such as local residents, kiosk owners, MSMEs, and aspiring entrepreneurs. The value propositions included flexible payment systems, a wholesale-supportive app, and regular updates on prices and stock, delivered through both offline and online channels.

Following this, in-depth interviews with store owners, MSME partners, household consumers, and IT developers provided real-world insights that led to significant revisions

across almost all BMC elements. The updated model, shown in Figure 4.4, reflects a user-centered approach with adjustments in customer segmentation, value delivery, revenue streams, and digital monetization strategies. This evolution marks a shift from a traditional wholesale model to an integrated, app-based service system designed to support partners more efficiently and sustainably.

Figure 3.

Marhani Grosir Business Model Canvas (Post-Interview)



Based on Figure 3, the updated Business Model Canvas of Marhani Grosir reflects a more structured and market-responsive business model, particularly tailored to the needs of MSME partners and digital-savvy consumers. Customer segments now include kiosks, small shops, and individual household consumers who frequently shop through the app. The value proposition focuses on convenient access to daily necessities both online and offline, competitive pricing, and an engaging loyalty points system. The introduction of the partner cashier application is a key innovation aimed at improving transaction management and stock control for business partners. Customer relationships are strengthened through a mix of personal and digital communication via WhatsApp and social media, supported by loyalty rewards, seasonal discounts, and holiday incentives.

Distribution channels include Marhani's physical store, the Sembako Timika app, and various social media platforms used for both ordering and customer engagement. Technical support and user education are emphasized to assist new partners in adapting to the digital system. Strategic partnerships with suppliers, app developers, IT teams, and local logistics providers support the core activities of store management, order fulfillment, and digital maintenance. Resources include the digital platform, human capital such as cashiers and couriers, and strong supplier relationships. The cost structure focuses on daily operations, app development, logistics, and promotional programs, while revenue is generated from retail and wholesale sales, delivery services, and potential collaborations with brands. Post-interview

validations revealed significant changes across all nine BMC elements, marking a shift from a conventional, product-oriented model to a user-focused, integrated digital business strategy.

Table 2

Comparison of Business Model Canvas Elements

No.	BMC Element	Pre-Interview	Post-Interview
1	Customer Segments	Timika residents, kiosk owners, MSME entrepreneurs, individual entrepreneurs	MSME partners such as kiosks and small shops, individual household consumers, digital consumers using the app
2	Value Propositions	Flexible payment system, wholesale application system, price and stock updates	Online and offline shopping access, competitive pricing, loyalty point system, transaction reports, automatic restock reminders
3	Channels	Social media, direct sales staff, promotional events	Marhani Grosir physical store, Sembako Timika application, social media as communication and ordering channels
4	Customer Relationships	Loyalty points, shopping vouchers, free shipping, holiday bonuses (THR)	Point and seasonal discount programs, app usage consultation, customer service via WhatsApp, digital technical support
5	Revenue Streams	Product sales margin, delivery fees, producer incentives	Retail and wholesale product sales, paid delivery services, potential brand collaboration for promotions
6	Key Resources	Customer service, couriers, sales staff, Shopee account	Digital app and servers, IT development team, partnerships with logistics and resellers, human resources (cashiers, warehouse staff)
7	Key Activities	Updating prices, stock, and app ads, social media content, member services	Store and app management, inventory management, product delivery, app development and maintenance
8	Key Partnerships	Main product suppliers, MSMEs supplying raw materials, partner cooperatives	Staple goods distributors, MSME and reseller partners, app developers, local logistics providers
9	Cost Structure	Employee salaries	Salaries and daily operational costs, app development and maintenance, logistics and delivery, promotions and loyalty programs

Based on Table 2, Marhani Grosir's updated Business Model Canvas reflects a more adaptive and digitally aligned business approach. Customer segmentation now targets specific user types active app users, WhatsApp users, and digitally untrained customers enabling personalized service. The value proposition has expanded to include operational tools like sales reports and loyalty programs. Digital platforms enhance distribution and customer support, while new revenue streams emerge from promotions and memberships. Strengthened partnerships with developers, local businesses, and logistics providers further support an efficient and sustainable digital wholesale model.

SWOT Analysis

The SWOT analysis in this study began with mapping elements from the Business Model Canvas (BMC), developed through interviews with store owners, MSME partners, consumers, and IT technicians. Each BMC component was evaluated to identify internal strengths and weaknesses, as well as external opportunities and threats. Field data was synthesized into a

SWOT matrix to formulate strategic directions that leverage strengths and opportunities while addressing weaknesses and mitigating threats. This approach enables the development of targeted, realistic, and context-based strategies. The analysis highlighted key strengths such as Marhani Grosir's proprietary digital application, strong customer relationships, and competitive pricing. Weaknesses included limited app features and reliance on internet connectivity. Opportunities emerged from rising digital literacy among MSMEs and growing consumer preference for online shopping, while threats came from large national marketplaces with superior logistics and technology. The SWOT findings serve as a foundation for Marhani Grosir's business strategy, guiding app innovation, service improvement, and the strengthening of its unique local partner network.

Figure 4.

SWOT Analysis of Marhani Grosir



Figure 4. illustrates the SWOT analysis of Marhani Grosir, developed from interviews with store owners, MSME partners, consumers, and application technicians. The analysis highlights the store's strategic position within the digital wholesale ecosystem. Key strengths include competitive pricing, strong customer loyalty programs, and ownership of a proprietary digital application, which differentiates Marhani Grosir from local competitors. These are supported by digitized transaction and inventory records, and strong relationships with partners maintained through personalized communication and incentives. However, weaknesses such as limited app features, lack of digital payment integration, outdated product data, and reliance on unstable internet networks hinder the overall user experience and require immediate improvement.

Opportunities for growth are significant, particularly as MSMEs become more digitally literate and consumers increasingly prefer online shopping. Marhani Grosir can leverage these trends by expanding service areas, offering tailored loyalty programs, and positioning itself as a trusted local digital wholesaler. Nevertheless, the business faces serious threats from national platforms like Shopee and Tokopedia, which offer faster logistics and stronger digital infrastructure. Internal challenges, such as limited delivery capabilities and the risk of outdated application features, also threaten long-term competitiveness. Thus, the SWOT analysis

underscores the need for Marhani Grosir to adopt adaptive strategies, enhance digital features, and invest in operational upgrades to remain relevant and competitive in the evolving market.

Figure 5.

Marhani Grosir SWOT Matrix

FAKTOR EKSTERNAL	FAKTOR INTERNAL	
	KEKUATAN (S)	KELEMAHAN (W)
PELUANG (O)	STRATEGI (SO)	STRATEGI (WO)
ANCAMAN (T)	STRATEGI (ST)	STRATEGI (WT)

Based on Figure 5, Marhani Grosir holds a strong strategic position for continued growth in the evolving digital market. Its core strengths include ownership of an integrated digital application, competitive pricing, and strong customer relationships, all of which support operational efficiency and market responsiveness through real-time transaction and inventory tracking. However, challenges such as limited application features, a user interface that is not yet friendly for those with low digital literacy, and dependence on unstable internet connections must be addressed to enhance service quality. Externally, the rise in digital literacy among MSMEs and the growing preference for online shopping present significant opportunities for expanding partnerships and strengthening its position as a trusted local digital wholesaler. At the same time, Marhani Grosir must anticipate threats from large-scale marketplaces, internal logistics limitations, and potential technological stagnation if systems are not regularly updated. The SWOT matrix provides a strategic framework for maximizing strengths, capitalizing on opportunities, addressing weaknesses, and managing external threats. Through responsive and data-driven strategies, Marhani Grosir is well-positioned to grow as an adaptive and sustainable digital wholesale business.

Discussion

1. Identifying User Needs through Value Proposition Design (VPD)

The Value Proposition Design approach was used to deeply understand the needs and expectations of Marhani Grosir's main users, particularly MSME partners and household consumers. Findings revealed that MSME partners seek a simple and practical system for restocking, real-time inventory monitoring, and fast, accurate transaction recording. Meanwhile, consumers emphasized the importance of price transparency, updated product availability, direct promotional features, and responsive customer service. These insights

served as the foundation for designing application features that truly address users' real-world problems and enhance user experience. The VPD framework also enabled the development team to map specific user pain points to appropriate digital solutions within the app. This alignment ensured that the design process remained user-centered and data-driven from concept to implementation.

2. Developing the Digital Business Model through Business Model Canvas (BMC)

Marhani Grosir's digital business model was structured using the Business Model Canvas (BMC), covering nine key components from customer segments to cost structure. The value propositions included competitive wholesale pricing, direct delivery services, and a digital cashier app that supports operational efficiency. A multichannel distribution strategy was applied, while customer relationships were strengthened through personalized services and loyalty programs. Revenue streams were derived from both wholesale and retail sales, supported by core resources such as digital systems, operational teams, and strategic partnerships with local suppliers and distributors. Key activities included application updates, order fulfillment, and partner training to ensure smooth adoption. The BMC approach provided a clear strategic framework to align technological innovation with business goals and user expectations.

3. SWOT Analysis of Strengths, Weaknesses, Opportunities, and Threats

SWOT analysis was conducted to evaluate Marhani Grosir's internal and external environment in forming effective digital business strategies. Strengths included a loyal MSME network, competitive pricing, and an ongoing digital transformation. However, weaknesses like limited app features, lack of digital payment integration, and low digital literacy among some partners remain challenges. Opportunities arise from increasing digital adoption and supportive government policies, while threats include competition from large e-marketplaces and internet infrastructure limitations. A complete SWOT understanding enables Marhani Grosir to formulate targeted strategies for sustainable business growth. This analysis also guides prioritization of development efforts, ensuring resources are focused on areas with the highest impact on resilience and competitiveness.

4. Designing the Digital Application to Support Efficiency and Business Growth

The design of Marhani Grosir's digital application was guided by a user-centered approach, involving direct user input from interviews, mockup trials, and interface testing. Key features include real-time stock management, automatic transaction recording, transaction history, and alerts for low stock or promotions. Users also proposed additional features like secure digital payments, multi-account support for partners managing multiple stores, and order tracking. The app not only facilitates transactions but also integrates internal systems with external partners, helping strengthen Marhani Grosir's digital ecosystem and positioning the business for competitive and sustainable growth. Continuous user feedback and iterative development ensure that the application evolves in alignment with user expectations and operational needs.

Mockup Design of Marhani Grosir Partner Cashier Application

The mockup design for the Marhani Grosir Partner Cashier Application serves as a visual representation of the interface and workflow before full system development. It was created based on user needs analysis, particularly for store partners managing daily operations. The primary goal is to visualize the layout and core functions of the app, enabling early testing and

evaluation by developers and users to minimize design errors and streamline communication between business owners, developers, and partners.

The mockup features four main interface displays: the dashboard, inventory management, sales transactions, and financial reporting. Each screen is designed to be simple and intuitive to accommodate users with varying levels of digital literacy. Clear icons, user-friendly navigation, and systematic menu structures are emphasized. The mockup also guides the development of application features and database structures, ensuring an efficient and user-oriented system that aligns with real operational needs.

The dashboard design of the Marhani Grosir Partner Cashier Application mockup provides users with a clear overview of key operational data such as stock management, sales transactions, and financial reports. Serving as the main screen upon app launch, it acts as a central control panel that delivers real-time, concise information without the need to navigate through multiple menus. The dashboard is designed to be simple, responsive, and user-friendly to accommodate users with varying technological skills, enabling quick and informed decision-making based on structured data.

Figure 6.

Dashboard Design



The stock management page in the Marhani Grosir Partner Cashier Application is designed to help partners monitor and update inventory levels in real-time. This feature is crucial for smooth store operations, as accurate stock data directly impacts sales and customer satisfaction. The interface displays a clear, accessible list of all available items with current stock quantities and availability status. It also includes user-friendly tools such as search, category filters, and manual update options to enhance operational efficiency.

Figure 7.

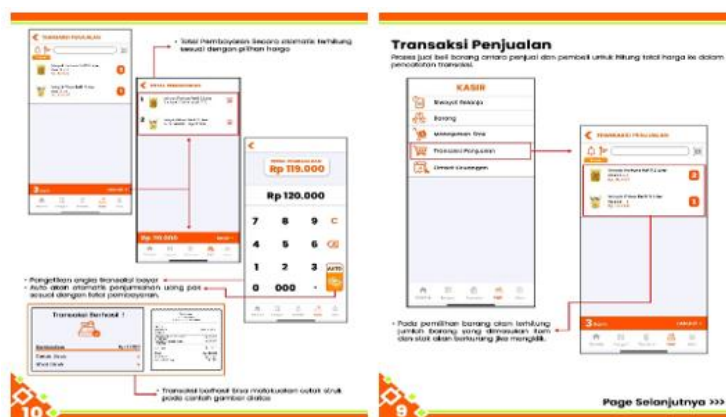
Stock Management



The sales transaction page in the Marhani Grosir Partner Cashier Application allows users to process sales using two main input methods: barcode scanning and manual product search. Users can select the most convenient method based on the situation, whether handling large transactions or facing limited connectivity. The transaction flow begins with selecting “New Transaction,” followed by adding items either by scanning barcodes with the phone camera or searching and entering quantities manually. The system automatically calculates the total price and presents payment options including cash, bank transfer, or digital wallets, offering flexibility for customer preferences. Upon confirmation, a digital receipt is generated and can be sent via WhatsApp or email for customer records. This intuitive and efficient interface speeds up service, reduces queues, and updates stock levels automatically to minimize errors, making it essential for smooth, accurate daily sales operations.

Figure 8.

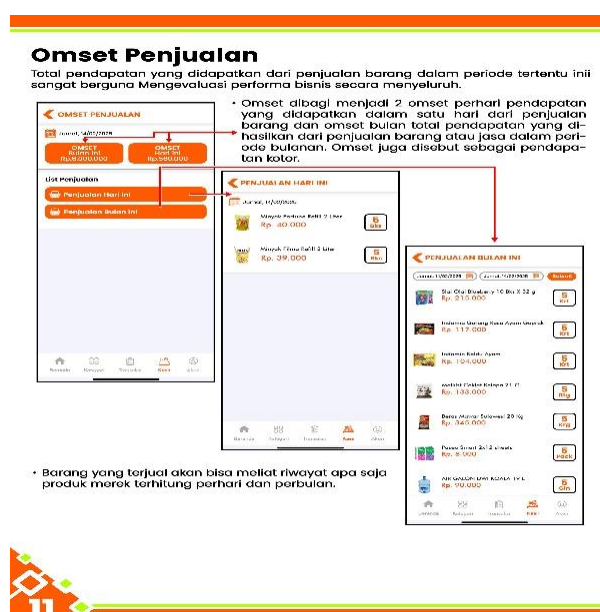
Sales Transaction Page



The sales and financial report feature in the Marhani Grosir Partner Cashier Application helps partners regularly evaluate and analyze their business performance. Users can access detailed transaction data, identify sales trends, and review the store’s financial status over selected periods. The reports are presented in easy-to-understand visual graphs and tables.

Figure 9.

The Sales and Financial Report



Key features include sales graphs showing daily, weekly, and monthly trends to track sales patterns and revenue fluctuations; detailed transaction tables listing customer names, purchased items, quantities, prices, and payment methods for auditing and record-keeping; and profit summaries displaying gross revenue and estimated net profit to assess profitability. Additionally, the app supports data export to PDF and Excel, facilitating digital record-keeping, tax reporting, and financial planning. This export function also allows partners to systematically compare monthly sales performance.

With the presentation of informative, flexible, and data-driven reports, partners can monitor business performance comprehensively and respond to operational dynamics quickly and accurately. The information available in the reports supports strategic decision-making and assists business owners in formulating future development plans. Therefore, the sales and financial report feature becomes one of the key elements in managing a more professional, modern, and digitally integrated wholesale business.

4. Conclusion

Based on the research results on developing the Marhani Grosir digital business model through the Value Proposition Design (VPD) approach, Business Model Canvas (BMC), and SWOT analysis, several conclusions can be drawn as follows:

1. Identification of Partner and Consumer Needs

Through the VPD approach, it was found that UMKM partners require a digital system that can assist with restocking, daily transaction recording, and simple yet accurate financial reporting. On the other hand, consumers seek transparency in product information, easy app navigation, and fast, timely delivery services.

2. Development of the Digital Business Model

The Marhani Grosir business model was successfully developed using the BMC approach, which includes nine key elements. This model demonstrates Marhani's digital strategy in

creating and delivering value to customers, strengthening partnerships, and optimizing digital distribution channels.

3. SWOT Analysis

The SWOT analysis results indicate that Marhani Grosir's strengths lie in its partnership network and service flexibility, while its weaknesses are limited app features and internet connectivity challenges. Opportunities arise from the trend of digitalization and UMKM growth, whereas threats come from competitors who have already adopted similar technologies.

4. Design of the Digital Application

The partner cashier application designed as part of the digital transformation addresses the main user needs. The app facilitates stock management, transaction recording, and real-time financial reporting, and is developed with a user-centered design approach to ensure alignment with users' operational activities.

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Declarations

Author Contribution : Author 1: Conceptualization, Writing - Original Draft, Editing and Visualization; Author 2: Writing - Review & Editing, Formal analysis, and Methodology; Author 3: Validation and Supervision (<https://www.elsevier.com/authors/policies-and-guidelines/credit-author-statement>).

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The authors declare no conflict of interest.

Additional Information:

Additional information is available for this paper.

5. References

- Arikunto, S. (2008). Prosedur penelitian suatu pendekatan praktek, Bandung: Alfabeta.
- Arikunto, Suharsimi. (2006). Prosedur Penelitian: Suatu Pendekatan Praktek, Edisi Revisi. Jakarta: PT. Rineka Cipta.
- Astuti, Karina D. (2012). Analisa, perancangan aplikasi penjualan di UKM: Studi kasus: “Tas Kulit House of Leather Bandung”. Jurnal Universitas Widyatama. 1:12.
- Bassil, Y. (2012). A Simulation model for the waterfall software Development life cycle international journal of engineering & Tecnology. iJET, 2(5):2.
- Blanco, J.A. & Upton, D. (2009). Codeigniter 1.7. Birmingham: Packt Publishing.
- Fajri, Fathorazi N., dkk. (2010). Perbandingan Model Pengembangan Perangkat Lunak. Paiton: Sekolah Tinggi Nurul Jadid.
- Hakim, Lukmanul. (2010). Membangun Web Berbasis PHP dengan Framework CodeIgniter. Yogyakarta: Lokomedia.
- Hariadja, Marihot Tua Efendi. (2002). *Manajemen Sumber Daya Manusia*. Jakarta: PT Gramedia Widiasarana Indonesia
- Hidayat, A. (2007). Strategi six sigma: Peta pengembangan kualitas dan kinerja bisnis. Jakarta: Elex Media Komputindo.
- HM, Jogiyanto. (1999). Analisis dan Desain Sistem Informasi : Pendekatan Terstruktur Teori dan Praktek Aplikasi Bisnis, ANDI Yogyakarta, Yogyakarta.
- Imbar, Radiant V., & Eric T. (2007). Analisa, perancangan, dan Implementasi sistem informasi penjualan pelumas: studi kasus: Perusahaan “PT. Pro Roll International”. Jurnal Informatika Universitas Maranatha. 3(1):11.
- Kristanto, Andri. (2004). Rekayasa Perangkat Lunak. Jakarta: Gava Media.
- Kristanto, Andri. (2008). Perancangan Sistem Informasi dan Aplikasinya. Yogyakarta: Gava Media.
- Marbeta, J. (2008, June). Home Stay in Indonesia. Retrived September 10, 2012, from <http://marbeta.wordpress.com>
- Nickels, W.G., McHugh, J., & McHugh, S. (2009). Understanding business. USA: McGraw Hill.
- Osterwalder, A. (2010). Business Model Generation. New York: John Wiley and Sons.
- Pearce, John A. and Robinson Richard B. Jr. (2003). Strategic management formulation, implementation and control. Boston: Mc Graw Hill.
- Riswandi. (2019). “Transaksi On-Line (E-Commerce) : Peluang Dan Tantangan Dalam Perspektif Ekonomi Islam,” Angewandte Chemie International Edition,
- Silalahi, U. (2009). Metode penelitian sosial. Bandung: Refika Aditama.
- Sugiyono. (2012). Metode penelitian kuantitatif dan kualitatif. Bandung: CV. Alfabeta.
- Suliyanto. (2010). Studi kelayakan bisnis. Yogyakarta: Andi.
- Tangkilisan, Hessel Nogi S. (2007). Manajemen publik. Jakarta: Grasindo
- Tim Penyusun Kamus Pusat Bahasa. (2007). Kamus Besar Bahasa Indonesia. Jakarta: Balai Pustaka.
- Umar, Husein. (2003). Businessan introduction. Jakarta: Gramedia Pustaka Utama.
- Umar, Husein. (2008). Strategic management in scition: Konsep, teori, dan teknik menganalisis manajemen strategis strategic business unit berdasarkan konsep Michael R. Porter, Fred R.

David, dan Wheelen-Hunger. Jakarta: Gramedia Pustaka Utama.
Wibowo, Singgih. (2007). Petunjuk mendirikan usaha kecil. Depok: Wisma Hijau.
Zaharuddin, H. (2006). Menggali potensi wirausaha. Bekasi: Dian Anugerah Prakasa.