Web-Based Ordering System with Customization for Rads Tooling

A Capstone Project Proposal
Presented to the Faculty of the
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In Partial Fulfilment
of the Requirements for the Degree
Bachelor of Science in Information Technology

Ballesteros, Benz Bryan S.
Cablao, Shan Rafaelle E.
Santos, Vien Ezekiel S.
Secapuri, Moenmar M.

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ENDORSEMENT FORM FOR PROPOSAL DEFENSE

TITLE OF RESEARCH: **Web-Based Ordering System with Customization for Rads Tooling**

NAME OF PROPONENTS: Ballesteros, Benz Bryan S.
Cablao, Shan Rafaelle E.
Santos, Vien Ezekiel S.
Secapuri, Moenmar M.

In Partial Fulfilment of the Requirements
for the degree Bachelor of Science in Information Technology
has been examined and is recommended for Proposal Defense.

ENDORSED BY:

Venice Angelica Alcantara, LPT
Capstone Project Adviser

APPROVED FOR PROPOSAL DEFENSE:

Maureen Royce F. Sacay, MIT
Capstone Project Coordinator

NOTED BY:

Maureen Royce F. Sacay, MIT
Program Head

MAY 2025

APPROVAL SHEET

This capstone project proposal titled **Web-Based Ordering System with Customization for Rads Tooling**, prepared and submitted by **Moenmar M. Secapuri, Vien Ezekiel S. Santos, Shan Rafaelle E. Cablao**, and **Benz Bryan Ballesteros**, in partial fulfillment of the requirements for the degree of Bachelor of Science in Information Technology, has been examined and is recommended for acceptance and approval.

Venice Angelica Alcantara, LPT
Capstone Project Adviser

Accepted and approved by the Capstone Project Review Panel
in partial fulfillment of the requirements for the degree of
Bachelor of Science in Information Technology

Mr. Ehdsel Loyola
Panel Member

Anna Lissa I. Abello, MIT
Panel Member

Emilyn Donor, MIT
Lead Panelist

Noted:

Maureen Royce F. Sacay, MIT
Capstone Project Coordinator

Maureen Royce F. Sacay, MIT
Program Head

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INTRODUCTION

In today's fast-paced world, businesses are constantly seeking ways to improve efficiency and enhance customer experience. One essential innovation is the ordering system, which enables customers to seamlessly browse, customize, and purchase products or services online. By automating transactions, reducing human errors, and optimizing order management, ordering systems have transformed traditional business operations, providing convenience and accessibility for both businesses and customers.

Traditional ordering system is manual and time-consuming, involving in-person visits, phone calls, and static design representations, leading to delays, miscommunication, and production errors. The lack of real-time visualization results in post-production adjustments, increasing costs and material waste.

A web-based system modernizes the process by enabling customers to design, customize, and visualize cabinets online with interactive features like drag-and-drop, real-time rendering, dynamic pricing, reducing errors and improving customer satisfaction. Digital communication streamlines order processing, minimizing delays and misunderstandings.

This study focuses on the development of a web-based ordering system for cabinet customization specifically for Rads Tooling. The system will provide a user-friendly platform that allows customers to personalize cabinets, 360 view, and receive instant price estimates. By implementing this system, the goal is to enhance customer engagement, minimize design errors, and improve operational efficiency in the cabinet manufacturing industry.

Project Context

Rads Tooling is a family-owned business in the Philippines, recognized for its high-quality cabinets and woodcrafts. The company was established in 2007 and is located in Green Breeze, Piela, Dasmariñas, Cavite. It started as a small woodworking shop specializing in handcrafted furniture and gradually expanded into manufacturing custom cabinets for residential and commercial use. Rads Tooling serves an average of three clients daily, with each client typically requesting multiple cabinets. The average price of a cabinet is around PHP 14,000, contributing to a steady revenue stream. The company operates Monday to Saturday, from 8:00 AM to 5:00 PM, but does not operate on regular holidays.

Rads Tooling currently handles orders through traditional methods, including direct walk-ins and communication via email, Viber, and text messages. Clients must manually send their preferred design details, dimensions, and specifications. Once the order is confirmed, the details are documented either in written form or as screenshots. This manual process makes it difficult to track modifications, ensure accuracy, and maintain a seamless workflow. Additionally, there is no centralized system for recording orders, leading to potential errors such as miscommunications about cabinet sizes, wood types, or finishes. As a result, employees often have to double-check orders, causing delays and inefficiencies in processing and fulfilling customer requests.

Handling customer inquiries is another challenge for Rads Tooling. Clients typically inquire about product availability, pricing, materials, and customization options through multiple channels, requiring employees to respond manually. This method is time-consuming, increases the risk of inconsistent information, and may lead to delayed responses that can affect customer satisfaction. Since employees must frequently switch between platforms to address inquiries, there is a greater likelihood of overlooking messages or providing outdated information. Furthermore, potential clients who do not receive timely responses may choose to look for alternative providers, resulting in lost business opportunities.

When it comes to cabinet customization, clients currently provide their design preferences through reference images or verbal descriptions. They also choose from available wood materials based on the company's suggestions. However, without a visual representation of their customizations, clients may struggle to finalize their choices, leading to changes or dissatisfaction upon completion. Many customers find it difficult to imagine the final product, which sometimes results in unrealistic expectations. This can cause frustration when the delivered cabinets do not match their envisioned design, leading to revisions, returns, or refund requests, which place additional strain on the company's resources and production timeline.

Order monitoring and cancellations also pose challenges for Rads Tooling. Once an order is placed, clients have no convenient way to track its progress except by manually contacting the business. Any updates on production or delivery schedules must be relayed through individual messages, making the process inefficient. Additionally, Rads Tooling requires a 30% down payment before production begins, but cancellations or modifications must be handled manually, which can lead to disputes or delays in refunds. Customers who experience difficulties in obtaining updates may feel frustrated, leading to dissatisfaction and potentially negative feedback. Furthermore, manually handling cancellations increases the risk of accounting discrepancies, making financial tracking more complex for the business.

Addressing these challenges will provide significant benefits for both the business and its customers. A more organized and efficient workflow will help minimize errors, ensuring that customer orders are accurately recorded and processed. Enhanced communication channels will lead to better customer service, increasing client satisfaction and fostering long-term relationships. Additionally, reducing inefficiencies in order tracking and payment handling will contribute to a smoother transaction process, allowing the company to focus on production quality and business growth. Ultimately, improving these aspects will strengthen Rads Tooling's reputation, attract more clients, and support the company's long-term success in the competitive woodworking industry.

Purpose and Description

The purpose of this Web-based Ordering System with Customization is to improve business efficiency by providing an organized and automated platform for managing customer orders. This system addresses these challenges by allowing customers to place orders, communicate with the admin regarding pricing, and track their order status. Additionally, it provides a structured workflow for the business, ensuring smooth order processing and improved customer interactions.

The system will allow customers to submit orders directly through the platform, ensuring that every request is recorded accurately and systematically. This minimizes the chance of manual errors and avoids the confusion that often comes with verbal or paper-based ordering methods.

To support better communication, a chatbot feature will be available where customers and the admin can exchange messages to clarify customer inquiries. This chat support allows both parties to discuss pricing, design choices, and any special requests, helping to ensure that the final order meets the customer's expectations before it is confirmed.

The customization feature will allow customers to personalize their cabinet orders by choosing the layout and color. To enhance this experience, a 360-degree real-time preview will be provided, enabling users to visualize their design before confirming the order. This helps ensure the final product aligns with customer expectations and improves satisfaction. These features enhance user experience and improve overall business operations by reducing order errors, increasing customer engagement, providing better order visibility, and ensuring that customers receive exactly what they envision before finalizing their purchases.

Objectives

The study aims to develop a Web-Based Ordering System with Customization to improve the efficiency of the ordering process and enhance customer interaction.

- **To develop a module for order placement where customers can view order status updates**

  This module will allow customers to place orders after confirming their design and agreeing on the price with the admin. The current manual process lacks an effective tracking system, often leading to confusion and delays. With the proposed module, customers can seamlessly place orders and monitor their progress in real time whether it's in queue, in progress, or completed. This will improve transparency, reduce the need for constant follow-ups, and enhance the overall ordering experience.

- **To develop a module for cabinet customization with a 360-degree real-time preview**

  The system will allow customers to personalize their cabinets by selecting preferred layouts and colors while visualizing the final design through a 360-degree real-time view. The existing process does not support design customization or provide any form of preview, which can lead to miscommunication and dissatisfaction. This objective aims to give customers more control over their orders, improve decision-making, and minimize design-related errors.

- **To develop a built-in chatbot module for handling customer inquiries and assistance**

  This module will enable customers to directly communicate with the admin regarding pricing, design adjustments, and other concerns. Currently, discussions are held through external platforms like Viber and email, which may cause message loss or delays. Integrating a chat feature will allow customers to easily reach out with their inquiries, improving support efficiency and overall customer satisfaction.

Scope

The four target user levels are the following:

- Administrator – Can add and manage different user levels within the system to delegate responsibilities and maintain secure access control

- Owner - Has full access to all system modules and settings, including order and account management, content updates, payment verification, and user role assignments.

- Secretary – Has limited access to customer records, order tracking, and chat support. This role assists with day-to-day administrative tasks but does not have access to system settings or financial verification.

- Customer– Customers are the end-users of the system who can register, customize cabinets, place orders, make payments, track their order status, and confirm order completion once the product has been delivered and approved.

1. ADMIN FEATURES

1.1 Order Management Module

Administrators have full access to order processing and management, including updating order statuses, verifying payments, and scheduling deliveries. The system allows for automatic notifications to be sent to customers regarding their order progress.

1.2 Product Customization Management Module

Administrators can configure available customization options such as cabinet types, sizes, colors, materials, and pricing. This ensures flexibility as the business updates its offerings.

1.3 Account Management Module

Administrators can oversee registered users, review customer profiles, manage account statuses, and handle any flagged accounts. This ensures that only legitimate transactions are processed, reducing the risk of fraudulent activity.

1.4 Report Generation Module

The administrator can generate various reports including sales reports and order reports. These reports can be filtered by date, product type, or customer, providing valuable insights to support business monitoring.

1.5 Content Management Module

Admins can create and manage homepage banners, promotions, and announcements to keep the website updated with the latest offers and company news.

1.6 Customer Chatbot Module

The admin can respond to customer messages via the built-in chat system, enabling clear communication about design choices, payments, and order updates.

1.7 Customer Feedback Module

To enhance user experience, the system includes a feedback and rating feature, allowing customers to review their orders and share their experiences. This helps the business identify areas for improvement and maintain high customer satisfaction.

1.8 Payment Verification

After customers upload proof of payment or complete their QR transaction, admins verify the down payment before the order moves forward. Verified orders are flagged for production.

2. CUSTOMER FEATURES

2.1 Home Page Module

The home page serves as the main interface where customers can browse through the available cabinet designs, product categories, and recommended items based on trends or previous orders. This section will also feature ongoing promotions, discounts, and company announcements to enhance customer engagement.

2.2 Order Placement Module

After finalizing their customized cabinet, users can proceed with placing the order. The system gathers all selected specifications, calculates the cost, and prepares the order for admin review.

2.3 Product Customization Module

A key feature of the system is its customization capability, allowing customers to modify cabinets based on their preferences. Users can select different colors, materials, and sizes, and the system will provide a 360-degree interactive preview of the chosen design. This feature ensures that customers can visualize their customized cabinets before proceeding with an order.

2.4 Chatbot Module

Customers can communicate directly with the admin using the integrated chat feature. This is particularly helpful for discussing special requests, clarifying designs, or receiving updates.

2.5 User Registration with Email Verification

New users can register by entering their personal details and login credentials. Upon registration, the system sends a verification email containing a secure link that must be clicked to activate the account. This ensures the validity of the user's email address and enhances account security.

2.6 User Log-In

Registered users can securely log in to access their dashboard, place orders, view order history, and interact with the system's features. Only verified accounts can log in to the platform.

2.7 Order Tracking

Once an order is placed, customers can track its progress using live status updates such as Pending, In Progress, and Completed. This transparency helps customers feel informed throughout the process.

2.8 Generated QR Code for Down Payment

The system will have a unique GCash QR code for every confirmed order, allowing customers to scan and pay their down payment using any e-wallet or mobile banking app. This ensures a convenient and secure payment experience.

2.9 Payment Details Module

During the ordering process, if a customer chooses a partial payment (e.g., 50% down payment), the system will automatically calculate and display the required amount to pay and the remaining balance. This helps customers clearly understand their payment responsibilities and track what they owe after the initial payment.

2.10 Order Completion Module

Once the product has been delivered, customers must manually confirm the completion of the order by clicking a "Order Complete" button. This ensures that the product meets their expectations and that no revisions are required before the transaction is finalized.

LIMITATION OF THE STUDY

Payment Gateway

The system does not support direct online payment processing through an integrated payment gateway. Instead, it only provides a QR code for down payment, requiring customers to manually complete the transaction using their banking or e-wallet app. This is because integrating a full payment gateway requires additional security measures and compliance with financial regulations, which are beyond the scope of this project.

Non-Responsive Cabinet Design

The cabinet customization feature does not support a fully responsive design, meaning the cabinet dimensions remain fixed and do not automatically adjust to different screen sizes or devices. Implementing a responsive 3D model is complex and beyond the current scope of this project.

No Delivery Tracking

The system does not provide real-time tracking of deliveries. Once an order is completed, tracking is handled by the company's chosen courier service. Integrating a GPS-based delivery tracking system would require additional logistics support, which is not included in this study.

REVIEW OF RELATED LITERATURE/STUDIES/SYSTEMS

Review of Related Literature

E-commerce and Digital Platforms Improving Business Access and Customer Convenience

The growth and development of technology throughout the years paved the way for a revolutionized business environment. E-commerce concerns the digital participation of different kinds of businesses in trading and providing products or services to customers. With the use of the internet and technology, the majority of businesses are

evolving to e-commerce, positively impacting the industry through fast-paced transactions, wide market range, and convenience.

E-commerce continues to change the course of the business world by ultimately improving the lives of the customers and the sellers. It is mentioned that one significant factor of customer satisfaction and loyalty is the convenience of navigating transactions and accessing different products and services. Due to the accessibility and openness of the digital market, customers can easily compare products from various websites.

Other indicated benefits of e-commerce in the article of Jain et al. (2021) include product feedback or review that benefits both the buyer and seller, improvement of relationship with the customers, rise in customer loyalty and retention, promotes a broad brand awareness, and many more. However, despite these number of advantages of e-commerce, a few challenges are notable. Such as higher cost of services and products, possible problems with cyber security, and developing countries may find it hard to keep up with the conduct of e-commerce in developed countries.

It is evident that the utilization of e-commerce can continuously make the business industry competitive especially with the presence of the business in the digital market. Kedah (2023) mentioned that companies who are able to integrate technology in their business will acquire a competitive advantage and stay relevant in the market. E-commerce is still largely unused in the majority of Indonesia, but as time goes on and with the help of modernity, customers who prefer transactions in e-commerce can enjoy it in the major cities of Indonesia.

In modern times, e-commerce is becoming more broad with the help of social media. One example is the birth of TikTok, a platform for short-term video content. Because of its popularity and large number of users, it became a well-known channel for marketing. Aside from this, TikTok also incorporated e-commerce in their system and built an environment where people can sell and buy products. Ma and Yu (2021) discussed the advantages and disadvantages of e-commerce in TikTok using SWOT analysis and concluded that e-commerce of TikTok is equipped with a high user base and provides users with an increased level of satisfaction and customer loyalty. While the disadvantages of this include weakness and threat from large competitors and interface design.

Online Ordering Systems Enhancing Customer Experience and Business Reach

The advancement of technology brought rapid changes in the business industry. This allows companies to adapt different methods to increase sales without the need of increasing labor costs as well, while reaching a broader range of customers.

Hao (2024) talked about the evolving food sector that gradually improved how restaurants operate and interact with customers through technological breakthroughs like ordering over the internet. The popularity of e-commerce and meal delivery services has enabled food businesses to evaluate the benefits of online ordering services as it has revolutionized the preferences of people when it comes to food with the influence of accessibility and convenience which most customers now look for. Through the online ordering system, it became easier for people to browse menus, place orders, and pay using the internet anywhere and anytime they want to. This is most beneficial to those people who tend to be physically active and busy most of the time, families with young children or elderly, and those who want to avoid crowded areas. It was also discussed in the article that online ordering systems provide restaurants with an increase in the revenues they generate. One of the most compelling features of online ordering is the ability to attract and retain customers from a wide scope of areas within a region while offering convenience of ordering and delivering of food. The article of Hao (2024) posed a positive correlation between the rise in online ordering apps and sales revenue of restaurants over a period of time, meaning that online ordering system helps increase the total sales revenues of physical restaurants.

Egereonu (2024) published a study that presents an optimized web-based online food ordering system specifically designed for KFC Restaurant located in Enugu, Nigeria. The system's primary strength is its flexibility, streamlining the ordering process for both customers and restaurants. Orders placed through the automated order-taking process are automatically stored in a database and instantly displayed in a desktop app at the restaurant, showing clear order details. This automation reduces staff workload, minimizes errors, and speeds up processing, delivering a smooth and efficient experience for everyone involved. Egereonu used various methods in this study, namely Object-Oriented Analysis and Design

Methodology (OOADM), prototyping, expert system, Structured System Analysis and Design Methodology (SSADM). It was concluded in this study that developing an online food ordering system consists of several phases. Identified problems with information needs were carefully noted to serve as the foundation for the subsequent system design phase. It is also important to adhere to software engineering principles and practices.

An interdisciplinary study published by Li et al. (2020) discussed the positive and negative effects of online food delivery. While the system is proven to provide convenience and accessibility, some critics were notable. From an economic perspective, it has been criticized for the higher charges restaurants impose and questionable working conditions for the delivery people. From a social perspective, the effects of online food delivery to the relationship between people and their food, influencing public health. For the environmental perspective, people are concerned with the big carbon footprints online food delivery emits. Our technology is still continuously growing and developing, so do the different sectors of the business world. It is crucial for businesses to follow through the trends in the online world to stay competitive in the market.

Order Management Systems Supporting Efficient Order Processing and Tracking

The business industry is constantly growing and the demands of customers are increasing as well. Businesses are able to keep up with the pace of the industry through an efficient order management system. Order management consists of tracking orders from its placement up to its fulfillment. This system significantly helps businesses, suppliers, and customers to conveniently place orders, track its progress, and garner feedback.

Novinda and Widyatmaja (2025) aimed to design and develop a web-based ordering information system for PT. Mutiara Busana Indah, a business located in Indonesia, to ease the challenges it faces in efficiently managing customer orders, which worsen when the order volume continues to increase. This ordering system enables customers to place orders with ease without having to go to the physical store of PT. Mutiara Busana Indah. Moreover, the system is designed to improve the efficiency of recording customer orders to make the ordering process more organized. Data were collected through interviews that involved direct question-and-answer sessions with relevant stakeholders in order to gather

accurate information about the system requirements. The researchers also utilized a literature review by garnering references related to information systems, web-based technologies, and programming applications. The data that was collected from these methods served as the foundation for analyzing, designing, and implementing the proposed web-based ordering information system. The web-based ordering information system offers essential features such as product data management, online order placement, and order status tracking for customers. From the company's perspective, it supports more organized order management by efficiently recording and storing customer information which is expected to address the operational challenges faced by the business that leads to the improvement of customer satisfaction. This study shows that using web-based technology in the ordering process improves customer accessibility and boosts the company's operational efficiency. Ongoing system development helps the company stay competitive in a fast-changing market.

To further expand the efficiency of a web-based ordering system, a published study conducted by Oghenekaro and Okafor (2023) studied the development of an automated restaurant management system for Sammies restaurant, a business located in Port Harcourt, Nigeria. This idea stems from the problem associated with its existing system that uses the HashMicro system to complement the manual method of keeping information in the restaurant. The HashMicro system is limited because of its operation on Macintosh computers on a Lan only and does not offer remote access or food ordering capabilities. The restaurant personnel of Sammies make use of a computerized management database information system in gathering and processing data, as well as keeping it for future use and product ordering. This proposed management system of the researchers was executed through HTML/CSS for the user interface and PHP and MYSQL database for the back end. The study also adopted a structured system analysis and design methodology. The web-based integrated restaurant management system has proven to be more cost-effective and provide a scalable solution for the Sammies restaurant through enabling users to access the application features such as the shopping cart for placing orders and making payments, administration privilege of managing the activities of the restaurant, and display of available meals in the food list page which is updated depending on the meals available at every given moment. These features of the system produced a robust application that

optimally managed restaurant operations, which resulted in decreased long queues and improved customer relationship.

To furthermore expand the usefulness of web-based order management systems, Ilyas et al. (2021) designed an android application in which customers can order and purchase recipes and ingredients through an admin portal that is web-based. Included in this system are the provided list of categorized recipes, ordering system, and the option for users to upload their own recipes. Moreover, the system offers video guides for cooking specific recipes, along with features like search history, direct chat, and recipe ratings. A web-based admin panel manages orders and user data. After numerous tests conducted to try its functionality, the system is found to be working without bugs, errors, or crashes. This kind of ordering management system ultimately provided ease to the sellers and customers that buy ingredients and recipes.

Customer Preferences Shaping Web Design to Influence Online Shopping Behavior

The emergence of online shopping undoubtedly has improved the quality of purchasing of consumer goods. This opted customers to lean on the convenience of purchasing online instead of going to physical stores. However, there are factors that heavily influence the decision of customers to purchase online. One of these factors is the preference of the customers in regards with their needs and the quality and performance of the products.

To further identify the valuable factors that contribute to the purchase decisions of customers, a published study by Kuncoro and Kusumawati (2021) identified the factors that influence consumers to buy sleeping products to find out the attributes of the product preferred by them. With five focus independent variables product related value, social related value, personal related value, sales promotion, social media marketing and purchase decision as the dependent variable, quantitative methods were used through surveying and studying a variety of literature. The researchers gathered data by conducting a non-probability sampling with a minimum of 200 respondents aged 17 to 26 years old residing in Jabodetabek and Bandung Indonesia. The data were then analyzed utilizing multiple linear regression methods to examine the relationship between the variables. The findings and results of the study opened for several conclusions that helps understand the customer

preferences and factors that influence their purchasing decisions, specifically for sleeping products. The multiple linear regression analysis showed a significant positive impact of the five variables product related value, social related value, personal related value, sales promotion, social media marketing to the purchase decisions of customers. Additionally, this study confirmed that customers are influenced by their needs, product quality, and performance in purchasing decisions.

Expanding the discussion about customer preference, Shi et al. (2022) explored the relationships between customer preference measurement accuracy, manufacturing flexibility, customer participation, and customized product quality. A questionnaire survey was conducted to 241 directors responsible for mass customization in an apparel industry in China and tested the hypotheses with structural equation modeling (SEM). The results and findings indicated a direct positive influence of customer preference measurement accuracy on customized product quality and an indirect positive effect on manufacturing flexibility. This means that getting customer preferences right contributes to improvement of product quality and makes the production process more adaptable. Being able to recognize and study customer preferences highly contributes to sales growth and customer loyalty.

Deepa et al. (2021) conducted a research to determine the customer preference product prediction through tracking of customers' frequent clicks of a product. By doing so, businesses will be able to find the product choice of the customers and help them add the products according to user preferences. The researchers focused on the concept of Single Page Application framework which is a web application that interacts with users dynamically and redirects to every page of the site easily, as well as tracks the product click by the user and product search by categories, brands, and price. It is concluded that one factor that contributes to the growth of online shopping website sales is the customer product preference prediction.

Product Customization Letting Customers Choose What They Want

As our world continues to move towards advancement, the demand and needs of the consumers progress as well. Innovation is essential to ensure that these needs are always met to bring in continuous flow of revenue to the businesses. One practice of innovation is meeting the personal demands of customers through personalization and customization of products. This is an innovation that helps businesses establish a strategic marketing technique that would attract customers.

Wang et al. (2022) investigated the impact of customization as a marketing strategy of providing personalized products on consumer's word-of-mouth (WOM) behavior. The researchers conducted a field study using customer order data from a Chinese retailer and word-of-mouth data from Amazon's website. The data were matched to filter out 463 online reviews among the 6,892 customized orders. Various methods have been used to analyze the data, such as Heckman's two-staged model, logistic regression, ordinary least squares regression, Tobit regression, analysis of covariance, and Lind-Mehlum U Test. The investigation led to the findings that indicated customization level motivates word-of-mouth behaviors–including posting and speed. After analyzing the data, it was revealed that there is an inverted U-shaped relationship between customization level and customer rating. It was concluded that product customization level has a significantly positive impact on word-of-mouth helpfulness, but not on its length.

Pech and Vrchota (2022) further expanded the idea of mass customization and personalization in the digital strategies of the manufacturing industry. The paper aimed to develop and validate a conceptual model for leveraging the industry and digitalization that supports product customization.. The published study utilized Structural Equation Modeling (SEM) in testing the hypotheses. Partial Least Squares (PLS) method was used to estimate the process model which considers the relationship between technology readiness, digitalization, internal and external integration, internal value chain, and customization. The results of the study emphasized the importance of digitalization and

technological readiness for product customization. For effective customization, models must consider both internal and external factors of the business environment.

Manufacturing firms use digital transformation to create smarter products and drive growth in declining markets, but often struggle to turn these efforts into sales. Schulz et al. (2023) finds that smart customization capability, which is the ability to tailor products to different customer needs, helps bridge that gap. When combined with integrated data across sales and service channels, this capability boosts the impact of digitalization on sales. Based on the results of the survey and archival data of 136 smart product manufacturers, the research highlights the resource and capability setups essential for successful digital transformation and shows how smart customization modernizes mass customization by enabling personalized solutions at scale.

Review of Related Studies

Chat Support and Improving Online Communication Between Businesses and Customers

In today's progressive world, businesses take advantage of the rapid advancement of technology. One innovative feature businesses adopt is the presence of live chat and chatbot in online commerce.

Malanik (2024) conducted a study to evaluate the difference of customer satisfaction between live chat and on-call customer service in Finland. Malanik formed a theoretical framework that discusses the roles of different kinds of customer service in the business context. Both qualitative and quantitative analyses were used in the study, utilizing questionnaires that were sent to people living in Finland and interviews with two interviewees who are both experienced in the field of customer service. The data results from the survey showed that a significant factor that contributes to customer satisfaction rate is mainly the responsiveness of the customer support to their inquiries. The interview results revealed that although on-call is more cost-efficient for the business, live chat is

more preferred by the customers due to its convenience. Live chat has revolutionized the concept of customer service in Finland, with the continuous growth of its usage by various companies. However, the emergence of live chat does not indicate the disappearance of on-call customer service.

To further expand the remarkable contribution of chatbot usage to online businesses, Kenih (2021) examined the impact of live chat and chatbot to the growth of businesses. One-on-one in-depth interviews with three interviewees were conducted to gather essential data. The results stated that utilization of live chat systems, especially automated ones give rise to business growth with four main factors. This includes more time spent online, demand for faster interactions, the impact of personalization on growth, and the customers' need for authentic and trustworthy relationships with the businesses. The results of this study recommend online businesses to implement a live chat support to examine their customer acquisition, retention, and engagement. With live chat and chat bot integrated in the online businesses, it is important to evaluate what promotes customer retention and engagement.

In the study of Dong et al. (2024), the results of the econometric model indicated that affective and informative signals, along with customers' prior experience positively play a vital role in the purchase decision of customers. Affective signals from the study include politeness and sentiment valence, while informative signals mentioned consist of information quantity and response timeliness. Studies have shown that the implementation of live chat and chatbot has significantly contributed to online traffic, customer satisfaction, and digital marketing–increasing the sales of businesses.

Customer Satisfaction and How Good Website Design Keeps Users Coming Back

The growth of various online platforms for selling and buying different products or services pave way for a more dense market. Therefore, businesses must create an exceptional customer experience for their customers to ensure that they are happy and satisfied, resulting in customer loyalty and retention.

Guo et al. (2023) evaluated the nature of the relationship of customer satisfaction to usability, trust, and design of a website. The researchers studied 96 Chinese youths who use two distinct online shopping platforms. The research employed structural equation modeling to test and validate proposed hypotheses concerning the influence of specific web design features. The results of the study led to the findings that revealed that each design element influenced usability and customer satisfaction in unique ways. Notably, both usability and satisfaction served as mediating variables in the relationship between navigation/information design and customer loyalty. In the case of visual design, satisfaction alone acted as the mediator. These results suggest that different aspects of website design contribute to the user experience and loyalty through various customer shopping experiences.

Widagdo and Roz (2021) examined the effect of website quality, hedonic shopping motivation, and impulse buying behavior on customer satisfaction on online shopping in Indonesia. The research focused on eight online marketplace, using a quantitative approach with a structural equation research with data obtained from 177 students through an online survey with a five-point likert scale. The findings of this study indicate that a quality website boosts customer satisfaction in online shopping. The quality of a website is found to significantly affect a customer's impulse buying behavior as the quality of online websites influences people to make purchase decisions impulsively due to attractive promos such as cashbacks and discounts. Additionally, web design quality significantly affects customer satisfaction as well through the execution of transactions based on the ease of use, information provided in the website, and the active interaction between the buyers and sellers.

The impact of web design on customer satisfaction and purchase intention is further examined by Tomić et al. (2025) to establish a comprehensive understanding of the main factors that contribute to website quality and its importance to customers. The researchers gathered data by utilizing a questionnaire that was distributed among youth where they were asked to rate the importance of 11 parameters related to website quality. Consecutively, the data collected were analyzed using various statistical tests,

which includes descriptive statistics, Chi-square independence test, and factor analysis. The quality of the webpage depends on layout, visual complexity, color, usability, speed, and reliability. This exploratory study used a feature vector and surveyed 117 social media users to assess these factors. Key findings of the research indicated that the level of customer satisfaction with a website plays an important role in establishing enduring relationships fostering loyalty among customers.

Mobile Payment with QR Codes as a Modern Way to Pay

Online platforms for businesses provided customers and sellers ease and convenience. To further enhance the convenience that e-commerce brings to people, QR code generation for payment methods emerged for easy transactions.

Alam et al. (2024) studied the intention of customers towards using QR codes in mobile payments, focusing on generation Y and Z in Bangladesh. Google forms were used to collect data from 300 responses of the questionnaire which were then meticulously analyzed using structural equation modeling, grounded in the theoretical framework provided by UTAUT. The research findings highlight the substantial impact of effort expectation, performance expectation, and subjective norms on users' utilitarian perspective and satisfaction with QR payment technology. These factors play a crucial role in driving broader acceptance of the technology. The insights gained from this study offer valuable understanding of the key determinants influencing users' willingness to adopt QR payment solutions. Service providers can leverage these findings to tailor their offerings more effectively, aligning with customers' needs and preferences to enhance adoption.

Furthermore, Azizah et al. (2021) conducted a study to determine the factors of continuance intention to use QR code mobile payment DANA on urban millennials in Indonesia. The study utilized quantitative methods, conducting a questionnaire survey assisted by a software that utilizes partial least squares. The data was analyzed using structural equation modeling and yielded a finding that DANA QR code mobile payment users are more likely to continue using the service if they experience trust, an enjoyable user experience, and

overall satisfaction. Building trust with users requires a reliable system, high service quality, and an understanding of user needs. Users enjoy a smooth and pleasurable experience when transacting with the QR Code. To further boost customer satisfaction, enhancing the quality of information and service outputs is key. This could include improving customer service utility or even replacing traditional human support with AI-driven customer service solutions.

The study of Djayapranata and Setyawan (2021) investigated the key factors that influence millennials to use the QR code in payment transactions. The study focused on mobile usefulness, trust, attitude, and behavioral intention. This study aimed to determine whether users are mostly influenced by useful or trust when utilizing QR code payment through surveying 165 Indonesian millennials. The results indicate a direct positive effect of usefulness on using QR code payments, while trust showed a large indirect effect. These studies about the intention of usage of QR code payments guide future web developers to create an effective and efficient QR code generation that satisfies the needs and expectations of customers.

Customer Convenience as a Key Factor in Online Business Success

Ever since e-commerce became popular and frequently used, both businesses and customers have embraced online marketplace as a cheaper and more convenient alternative for shopping. Online shopping enables people to shop and purchase anywhere and anytime they wish to do so. Great price deals are also offered in online shopping platforms through vouchers and discounts, which allows customers to save costs.

Palacios and Jun (2020) widened the knowledge and understanding of online shopping convenience and customer satisfaction using the critical incident technique that allowed them to evaluate and classify the underlying key factors of stories or reviews of customers who post their online shopping experiences who most likely had satisfying or dissatisfying shopping experiences, or critical incidents as data. The researchers content-analyzed 1,134 critical incidents—online shopping customer reviews—through the Consumer Affairs'

website, focusing specifically on interactions between customers and service firms that are satisfying or dissatisfying. The analysis of the critical incidents revealed that there are nine key online shopping convenience dimensions and fifty one subdimensions for online shopping convenience. The nine key dimensions of online shopping convenience include access convenience, search convenience, evaluation or selection convenience, configuration or customization convenience, transaction convenience, delivery convenience, possession or in-use convenience, service recovery convenience, and post-purchase communication convenience. These dimensions tend to have a significant impact on customer satisfaction or dissatisfaction, depending on its performance levels.

Further evaluating the online shopping customer convenience, Le-Hoang (2020) aimed to explore, measure, and analyze the relationship between online convenience, online customer satisfaction, buying intention, and electronic word-of-mouth of customers by using the Exploratory Factor Analysis and three model regression. The researchers conducted qualitative research through group and expert discussions before administering the quantitative research of issuing a questionnaire survey to online customers living in Ho Chi Minh City. To analyze the data gathered, the researchers assessed its reliability through Cronbach's Alpha coefficients, Exploratory Factor Analysis, and three regression models in order to find the relationship between the seven convenience dimensions—access, search, evaluation, attentiveness, transaction, possession, and post-possession convenience—online customer satisfaction, buying intention, and electronic word-of-mouth. The data yielded a result that indicated online convenience affects online customer satisfaction and influences online buying intention and electronic word-of-mouth.

Moreover, Saha et al. (2022) investigated the effects of online convenience and shopping experience on customer satisfaction, as well as their purchase decisions in the future through gathering and analyzing data from 226 Chinese customers who buy online using the Partial Least Squares Structural Path Modeling. This study resulted in the findings that customers' intention to purchase online is enhanced by customer satisfaction and shopping experiences, with customer satisfaction mediating the relationships.

3D Visualization for Interactive and Personalized Product Design

The advancement of technology continuously makes room for innovation that makes everyone's lives easier. Businesses keep up with the fast paced world by adapting different innovations into the business while satisfying the needs and demands of customers. Due to the popular rise of e-commerce, new features have been introduced to enhance customer experience and compensate for the loss of physical contact with the products. One innovation would be optimizing 3D visualization of products to elevate customer experience and satisfaction.

Hwangbo et al. (2020) studied the fundamental meaning of 3D virtual try-on to customer experience and examined its effects on online sales through actual data. The researchers created a 3D body model and added more diverse and detailed body size and types based on the customer measurement, making it more realistic and natural looking. The process of creating a 3D general body modeling consists of 3D model creation wherein the human body has been digitalized and over 1,000 body measurements were analyzed from the researchers' database through 10 line JavaScript code, garment photography by shooting on automated mannequin handling system, and digitalization where the photographed clothes image were cut out and rendered into the 3D model. The study showed that customers responded positively to the more detailed size and type based on the customer management which decreased the return rate by 27%. For convenience, virtual try-on enables customers to check the size and fit of apparel well, filtering the wrong size or fit which results in the high percentage of decrease in return rate. The study concluded that virtual try-on provides convenience, enjoyment, and a profound experience that comes with a positive effect on purchasing, boosting purchase intention and sales.
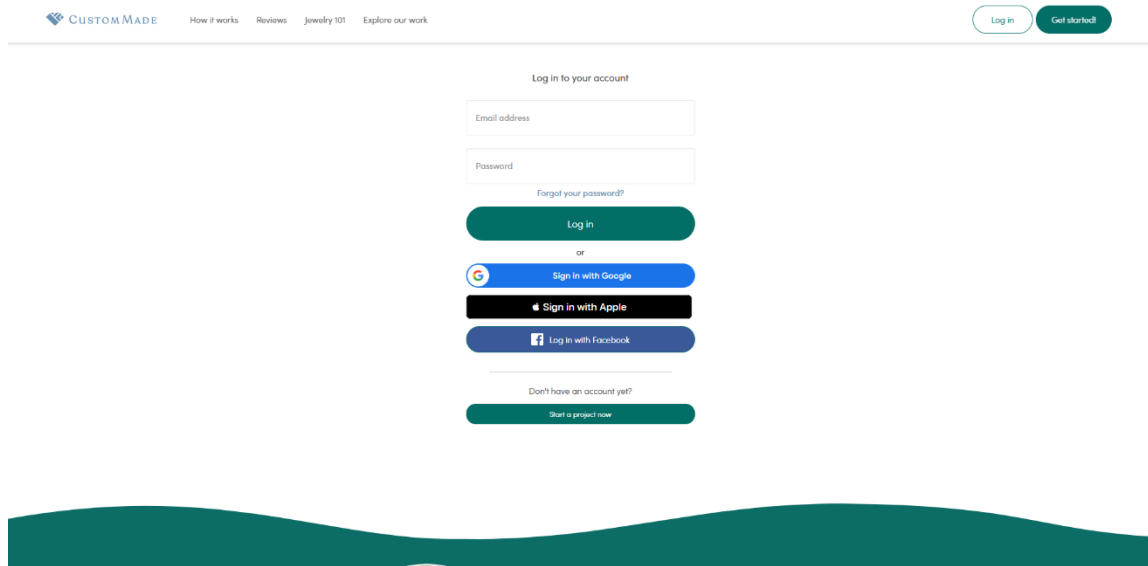
Yunanto et al. (2024) developed a website that incorporates a 3D catalog with product customization features in order to enhance the customer experience and promote PT. Kekean's unique products, an e-commerce website focused on sustainable fashion with batik, weaving, and embroidery based on Indonesia. Waterfall development method, a structured approach consisting of sequential phases, was utilized in gathering, designing,

developing, testing, and developing the data for the website. In addition, the Delone-McLean model was used in assessing the effectiveness of the implemented website in terms of system quality, information quality, service quality, user satisfaction, and impact on the user and business. The study resulted in the findings of effectiveness of 3D visual object technology in the online market environment, resulting in a significantly enhanced customer experience, evidenced by the 79.4% "good" rating in the website's testing. This study further emphasized the importance of incorporating 3D visual object technology in improving customer engagement with products.

Choi (2022) developed a 3D dynamic fashion garments with changeable styles, colors, and textile patterns using a 3D virtual simulation system, as well as examined its potential possibilities in online fashion platforms. To design and develop the 3D dynamic fashion garments, CLO3D and After Effects were utilized with a collaborative effort between a fashion designer and a group of motion graphic artists. To visualize the aesthetic and technological explorations of 3D dynamic fashion garments, ten samples of a ready-to-wear collection were developed. The study also conducted focus group interviews with professional fashion designers and digital experts, which indicated social and industrial possibilities of 3D dynamic fashion garments. Ultimately, the study led to discussions on the future of digital fashion design, emphasizing key implications based on design criteria such as digital technology, dynamic range, wearability, expressivity, interactivity, sustainability, and context.

Related System

CustomMade

Figure 1. CustomMade Login Interface
Retrieved from: https://www.custommade.com/studios/login/

CustomMade is a website where users can customize rings for gifting or personal use. It offers features that allow users to choose ring types, adjust design details, and communicate directly with creators to personalize their orders. The platform includes a real-time design preview that instantly updates the visual whenever a user makes changes to the ring's style or elements. The website layout is clear and easy to navigate, helping users explore different customization options smoothly. The design includes a combination of rectangular and oval-shaped buttons and a small font size, which form part of the overall visual presentation of the platform.

KabinetKingUSA
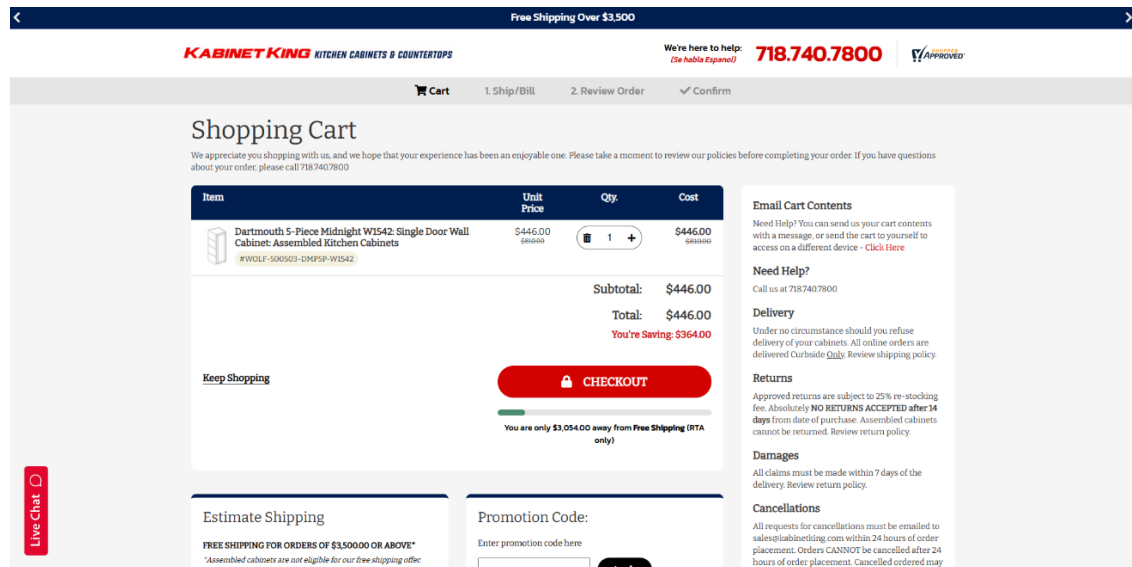
Figure 2. KabinetKing Order Processing Interface
Retrieved from: https://www.kabinetking.com

KabinetKingUSA is a website where users can browse and order ready-to-assemble cabinets. It offers features like "Shop by Room" and detailed product specifications to help customers choose the right cabinets for their space. The navigation is simple and clear with an upper action bar that shows labeled categories, making it easy to find different cabinet options. The website uses a mix of colors, including red, blue, orange, black, grey, and white, which all contribute to its overall visual design. The layout is structured to guide users through the browsing and ordering process with ease.

NIKE BY YOU
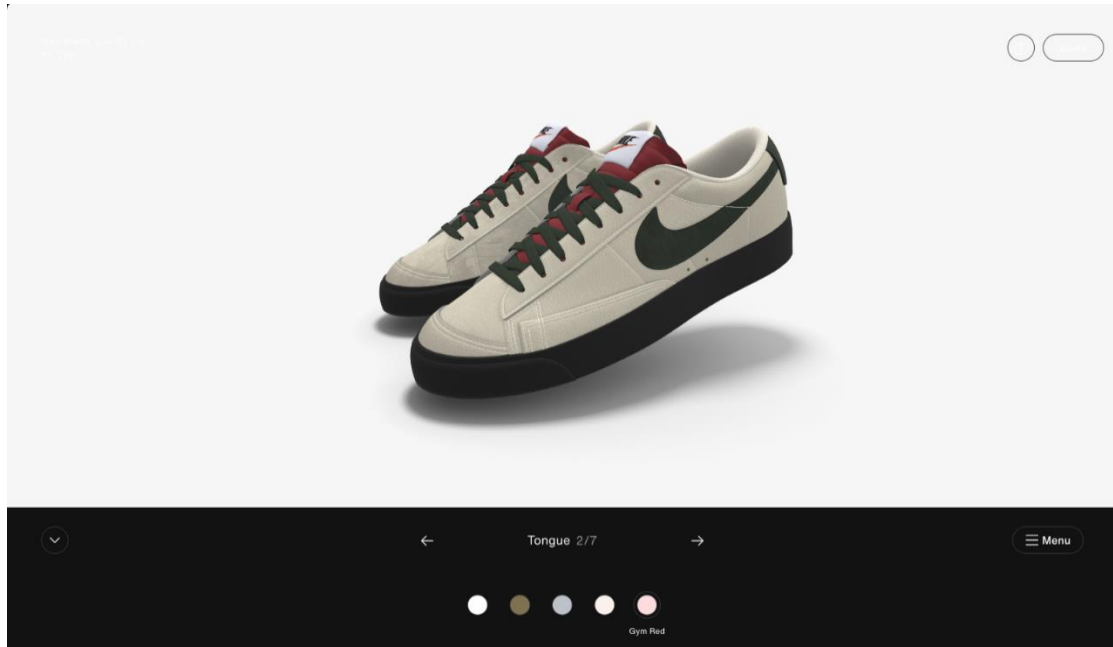
Figure 3. Nike By You Customization Interface

Retrieved from: https://www.nike.com/ph/u/custom-nike-blazer-low-shoes-by-you-10002126/7255088557#Builder

Nike By You is a website where users can design their own Nike shoes. They can choose the colors, materials, and even add their name or custom text to make the shoes more personal. One of the best features of this system is the real-time design update every time a user changes a color or part of the shoe, the design updates instantly, allowing them to immediately see the result. This makes it easy to experiment with different styles and be creative. The layout is simple and clear, so even first-time users can easily understand how the customization process works.

ALIBABA
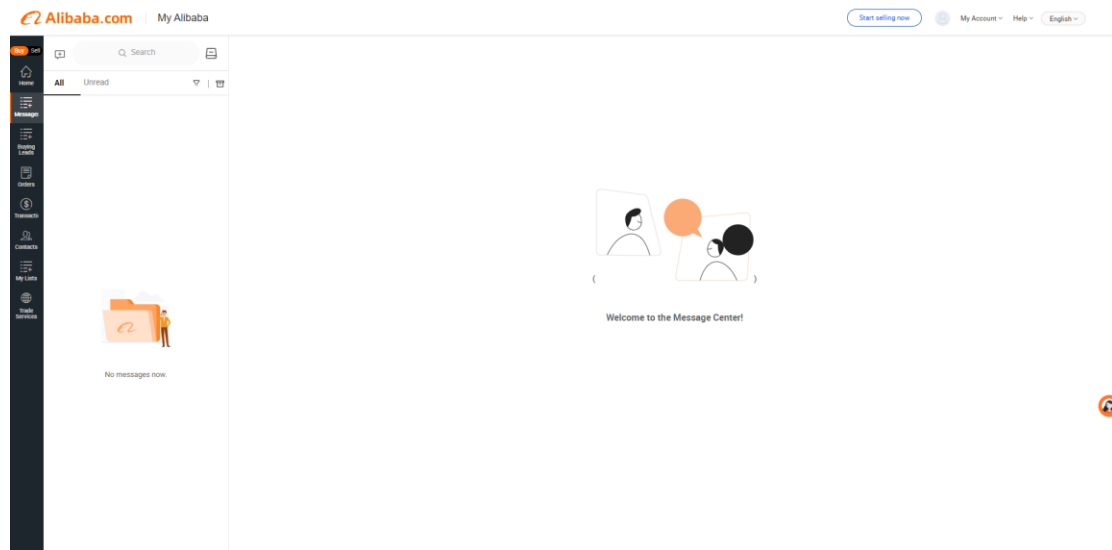
Figure 4. Alibaba Chat Support Interface

Retrieved from: https://message.alibaba.com/message/messenger.htm#/

Alibaba's Message Center is an interface where users can view and manage their communications with suppliers and buyers. It features a sidebar on the left that organizes messages into folders such as "All," "Unread," and other categories allowing users to filter and locate conversations easily. The main section displays a welcome message when no chats are selected, with simple graphics to enhance visual engagement. The top navigation includes options for starting a sale, accessing account settings, and changing the language. The interface is clean and minimal, designed to help users navigate messages and conduct business communications efficiently.

APPLE
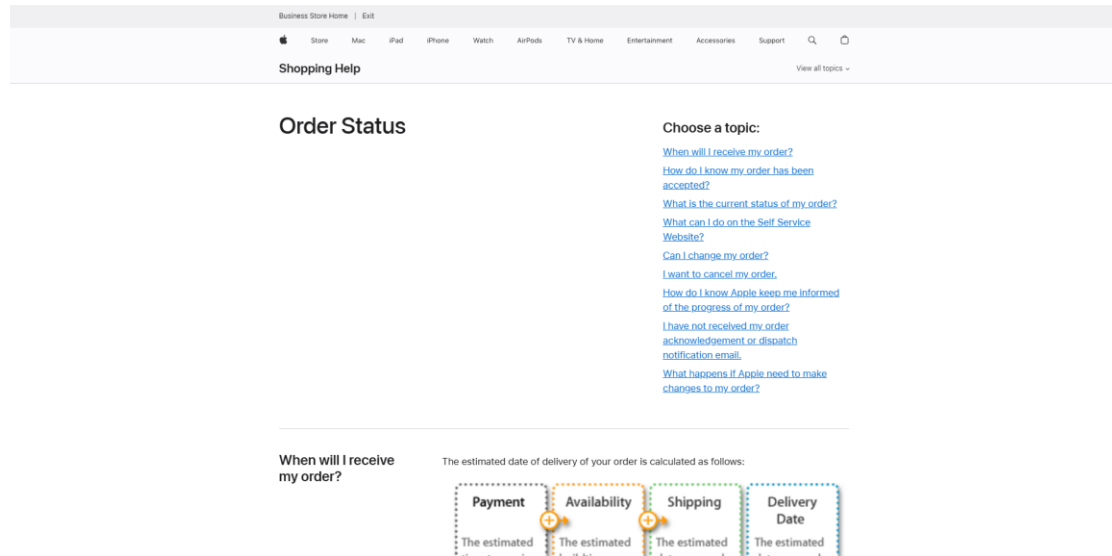
Figure 5. Apple Order Status Interface

Retrieved from: https://www.apple.com/ie-business/shop/help/orderstatus

Apple's Order Status page is part of its Shopping Help section, designed to assist users in tracking and managing their orders and the page features a clean and minimal layout with a main heading labeled "Order Status" followed by a list of common customer questions presented as clickable links. These include topics such as delivery dates, order acceptance, progress tracking, and order modifications. Additional information, such as the estimated delivery timeline, is visually supported by a simple graphic that outlines steps from payment to shipping and final delivery. The interface provides users with quick access to detailed support related to their order inquiries.

SYNTHESIS

Nowadays, businesses are moving from manual ordering to modern web-based systems. Traditional ordering methods often cause delays, miscommunication, and errors, which can lead to customer dissatisfaction. With the availability and ease of access provided by the internet, customers now prefer to browse and customize products online rather than visiting stores in person.

A web-based ordering system proves its importance by making the ordering process faster and more convenient. Through a web customers can choose and personalize cabinets based on their preferences. The integration of real-time previews and chat support is also important. Customers can ask questions and get quick answers, reducing misunderstandings. Additionally, automation in processing orders minimizes human errors and saves time for both customers and the business. Having features like order tracking and report generation also helps businesses monitor progress and manage orders efficiently. This shows how an ordering system can increase customer satisfaction and help the company grow.

Ordering systems also lead to better customer experiences. Customers feel more in control of their orders and can make better decisions when they can see real-time previews. Another important factor is the User Interface. A good UI improves User Experience making it easy for customers to navigate and customize their orders. Poor UI design can frustrate users, while a well-designed UI encourages customers to complete their purchases.

In conclusion, integrating a web-based ordering system with features like real-time previews, chat support, and good UI design is beneficial for both the business and its customers. It improves business operations, enhances customer satisfaction and helps build stronger relationships between the business and its clients.

METHODOLOGY

Technical Background
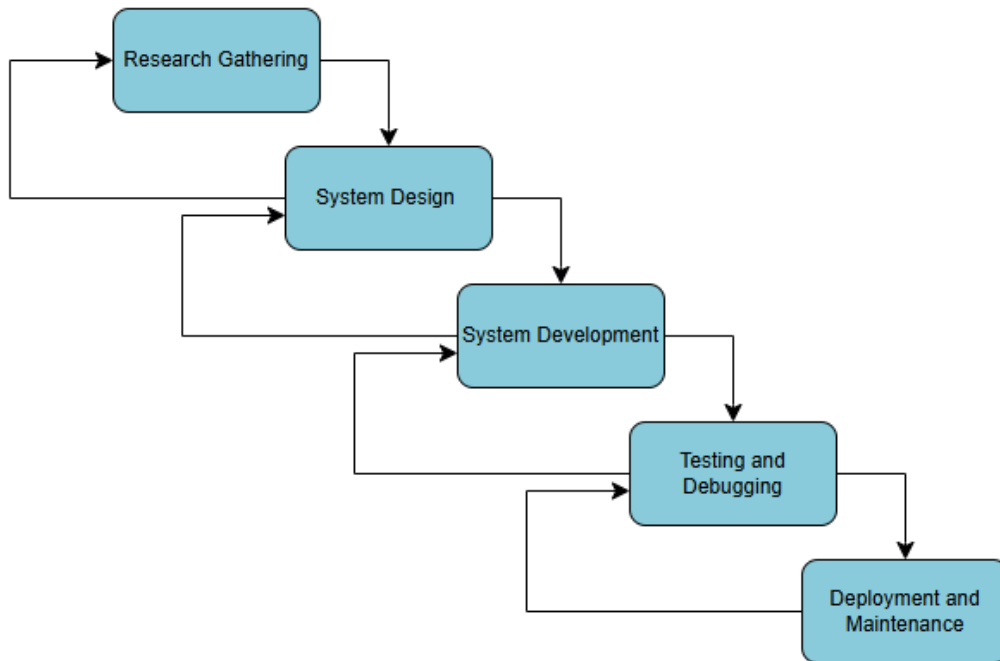
Figure 6. Modified-Waterfall Method

The proponents will use the Modified Waterfall Method in developing the capstone project titled "Web-Based Ordering System with Customization for Rads Tooling". This method provides a structured yet flexible approach allowing clear progress tracking while still making minor adjustments when necessary. By following sequential phases such as research gathering, system design, development, testing and deployment the team ensures that the system is developed systematically, minimizing the risk of overlooking important features.

The first phase is Research Gathering. During this phase, the proponents began with client searching and preparing the project proposal and they also created and finalized the data-gathering tools to better understand the existing system. Once sufficient data had been gathered, they proceeded with finalizing gathered information and started writing the required documents

including Chapter 1, 2 and 3. Revisions were also made to align with updates and feedback from advisers. This phase ensured that the project had a clear direction and purpose based on actual needs.

The second phase is System Design. After gathering the necessary information the proponents moved to the design phase where they created user flow diagrams, wireframes and the database structure. They used Figma to design the layout and Blender to create the 3D cabinet model needed for the customization feature. Part of this phase also included creating the base cabinet model for the system's 360-degree preview function. During this time, the team also prepared for their mock defense presentation to validate the planned design approach. This phase ensured that the interface would be efficient and easy to use for both customers and admins.

The third phase is System Development. This is the part where the proponents began translating the system design into actual code. They worked on the frontend using HTML, CSS, JavaScript, and Three.js for the 3D preview functionality. For the backend, PHP and MySQL were used to handle server-side operations such as order management, user accounts and chatbot communication. Visual Studio Code served as their development environment and XAMPP was used to simulate a local server for testing. During this phase the proponents also prepared for their title defense while completing system functionalities.

The fourth phase is Testing and Debugging. Once development was complete the system underwent two levels of testing. First, Unit Testing was performed to check if individual modules like login, order placement, and payment processing were working properly on their own. Then System Testing was conducted to test how all components worked together as a full system. Key features such as cabinet customization, order submission, GCash QR payment and chatbot messaging were evaluated. Any bugs found were documented and fixed right away. At the same time the team started writing Chapter 4 and Chapter 5 to report the testing results, user feedback and implementation details.

The final phase is Deployment and Maintenance. After successful testing, the system was deployed to a live server to be accessed by real users. During this phase the team also collected feedback

from users and monitored system performance. Minor adjustments and updates were done as part of the maintenance activities, including applying patches, creating backups and making improvements based on user suggestions. This phase also included finalizing the entire project paper and completing all document revisions for submission.

Technologies to be used

The proposed system will use several tools and technologies to build and run the Web-Based Ordering System for Rads Tooling. HTML, CSS, and JavaScript will be used to design the website layout and interactive features. Three.js will help display the 3D view of customized cabinets. PHP will be used to process orders, logins, and admin actions, while MySQL will store order and payment history. XAMPP will be used to run the system locally during development. For design, Figma will help plan the flow of the system, Blender will be used to create the 3D cabinet models, and Canva will be used to create page images and layouts and GCash QR code generator will also be added so customers can pay easily using their phones.

Color Theory

Color Theory helps make websites look nice and easy to use. It explains how different colors work together and how they can affect a person's feelings and attention. Warm and cool colors, contrast, and color combinations help guide users and make the website easier to read and explore. In this system, color theory helps improve the design so that customers enjoy using the site and know where to click.

Design Theory

Design Theory is about how a website looks and works. It includes things like layout, spacing, balance, and making sure everything is easy to find. A good design helps users move around the system without getting confused. For this system, design theory helps organize the pages so that customers and admins can use the features quickly and easily.

Customization Theory

Customization Theory says that people like it when they can make changes based on their own needs or preferences. In this system, customers can choose the color, size, and type of cabinet they want. This makes the experience more personal and gives users more control, which helps them feel happy and confident with their orders.

Ordering Theory

Ordering Theory focuses on the steps people take to place an order and it helps make sure the process is clear and smooth from choosing a product to checking out. In this system, ordering theory helps set up a simple step-by-step process for customers so they can complete their order without problems or delays.

Database Theory

Database Theory is about how to store and organize data properly and it helps keep information clean, complete and easy to find. In this system, the database is used to save customer orders and payment records. This theory helps make sure nothing is lost, repeated, or mixed up in the records.

CALENDAR OF ACTIVITIES

	COMPLETED		ONGOING

GANTT CHART

PHASE	TASK	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
Reserach Gathering	Client Searching	▓											
	Project Proposal	▓											
	Quuestionnaire for Interview		▓										
	Client Interview			▓									
	Finalizing Gathered Data			▓									
	Chapter 1				▓								
	Revising Chapter 1				▓								
	Chapter 2				▓								
	Revising Chapter 2				▓								
	Chapter 3					▓							
	Revising Chapter 3					▓							
	Finalization of Project Paper						▓						
System Design	System Brainstorming					▓							
	Design Wireframes (Figma)						▓						
	Creating Cabinet Model				▓	▓	▓	░	░				
	Mock Defense					▓							
	Title Defense					▓							
System Development	Frontend development (HTML, CSS, JS)						░	░	░	░	░		
	Backend developement (PHP,						░						
Testing and Debugging	Unit Testing							░	░	░	░	░	
	System Testing							░		░	░		
	Chapter 4							░	░	░	░		
	Chapter 5							░	░	░	░		
Deployment	Deployment											░	
Implementation	Implementation												░

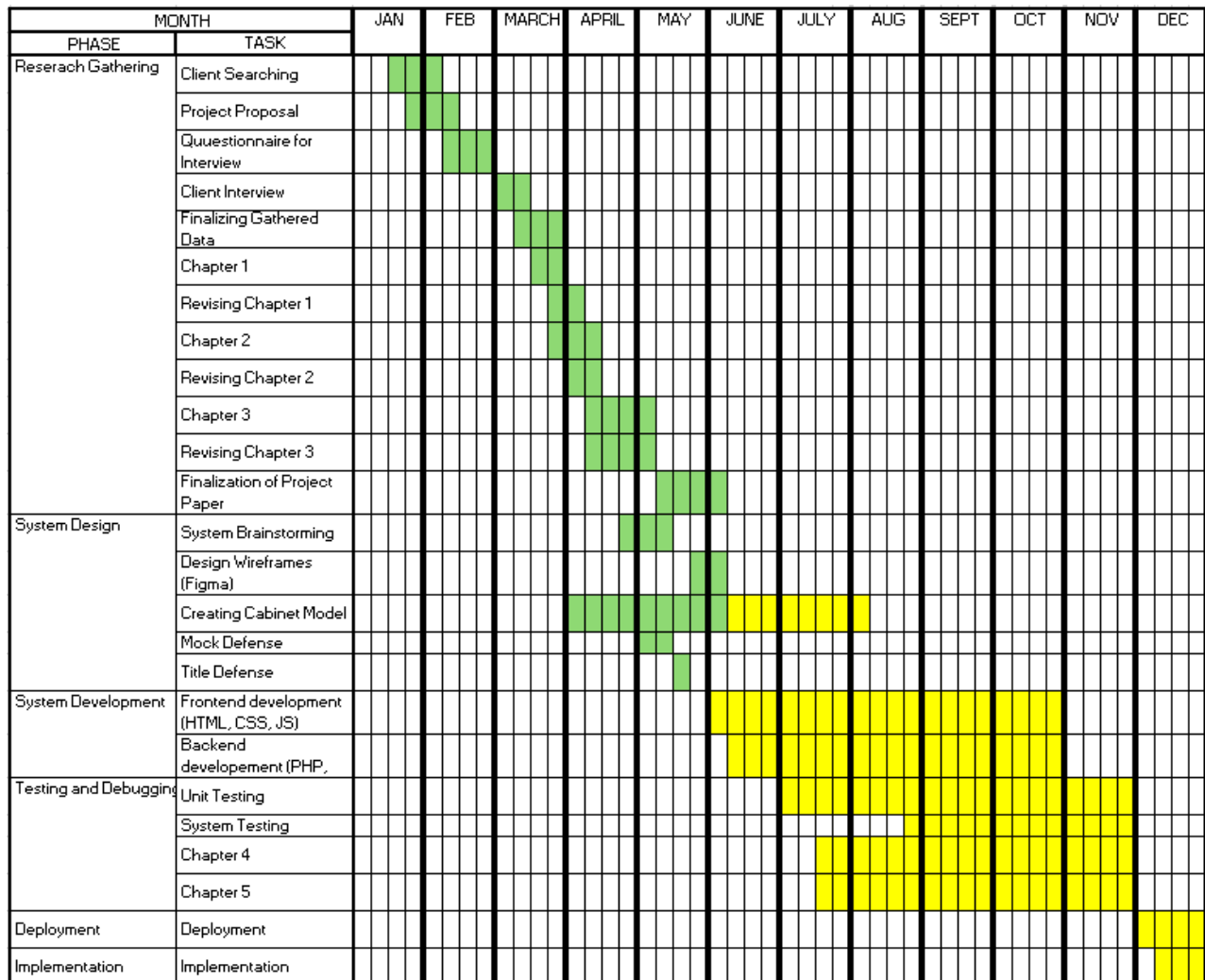*Figure 7. Gantt Chart of Activities*

RESOURCES

- HARDWARE

  ➢ Desktop
  ➢ Laptop
  ➢ Monitor
  ➢ Keyboard
  ➢ Mouse

- MINIMUM SPECIFICATION
  ➢ Operating System: Windows 10 Pro
  ➢ Processor : AMD Ryzen 7 5700X 8-Core Processor 3.40 GHz
  ➢ RAM : Skihotar 16 GB
  ➢ Graphics Card : PNY GeForce RTX 4060 8gb
  ➢ HDD : 500GB
  ➢ SSD : 1TB
  ➢ PSU : MSI MAG AB650N 80 Plus Bronze

- SOFTWARE

  ➢ Visual Studio Code
    The proponents will use Visual Studio Code as their main development environment. It
    will be used to create the Web-Based Ordering System

  ➢ Languages:
    The proponents will use HTML to build the structure of the website like forms and buttons.
    CSS will be used to style the pages such as colors, fonts and layout. JavaScript will add
    interactive features like showing messages and handling page actions. Three.js will be used
    to display the 3D cabinet preview in real time. PHP will handle back-end tasks like saving
    orders and processing logins. MySQL will be used to store order history, payment records
    and other data. All these languages will be used together in Visual Studio Code to develop
    the system.

➢ XAMPP
The proponents will use XAMPP to create a local database for the system records logs.

➢ MySQL
The proponents will use MySQL for storing records history like order and payments.

➢ Figma
The proponents will use Figma to visualize the flow of the system

➢ Blender
The proponents will use Blender to create 3D cabinet layouts

➢ Canva
The proponents will use Canva to create page images and layouts

Requirements Analysis

I. There are four different user roles in the Web-Based Ordering System for Rads Tooling each assigned to specific tasks within the platform. The Owner has full access and manages orders, customer accounts and payment approvals. The Administrator is responsible for content management and handling customer inquiries/orders. The Secretary has limited access and assists in monitoring system logs as well as supporting customer inquiries. The Technical Support role is responsible for updating order statuses and managing the database to ensure that confirmed orders and payment records are properly logged and maintained.

II. Rads Tooling faces several issues with its traditional ordering process, such as receiving orders via walk-ins, Emails, and Viber. These methods often cause delays, errors in cabinet measurements, and difficulty tracking order updates. With multiple clients daily, each requiring unique designs, manually managing information increases the risk of confusion and customer dissatisfaction. A centralized digital system is necessary to streamline order collection and minimize human error.

III. The business operates in Piela, Dasmariñas, Cavite, and has been offering handcrafted cabinets since 2007. They serve an average of three clients daily, each order averaging PHP 14,000 in value. Rads Tooling operates from 8:00 AM to 5:00 PM, Monday to Saturday, excluding holidays. The system will allow customers to place orders online 24/7, offering greater flexibility and convenience even outside business hours.

IV. The system has been developed to align with business operations before deployment. The team ensured that features such as cabinet customization, chat support, payment tracking, and order management were functioning smoothly. From a business point of view, the system was reviewed to confirm it fits the day-to-day tasks of both customers and employees, streamlining communication and simplifying the ordering process.

V. Currently, Rads Tooling depends on Emails, Viber, and verbal agreements to receive and manage orders. These methods result in missed details and long response times. With the new system, customers can browse cabinet templates, customize their designs, and receive real-time 360-degree previews. A built-in chat system allows direct communication with the admin, and a GCash QR code is generated for every confirmed order for down payments.

VI. Each process within the system was created to improve order accuracy and customer convenience. Order customization and placement are available 24/7, while staff manage incoming orders and updates during working hours. Order status (e.g., Queued, In Progress, Completed) keeps both sides informed and aligned. The system's design responds directly to the business's problems such as unclear orders, late responses, and missing payments.

By addressing these problems, the system helps Rads Tooling deliver faster service, reduce errors, and provide a better overall experience for both staff and customers. Its features like chat support, customization previews, and QR-based payments make ordering simpler and more reliable, fulfilling the business's goal of streamlining operations while improving customer satisfaction.

Requirements Documentation

During the initial consultation with the client, it was made clear that their main requirement for the system is a reliable and easy-to-use Web-Based Ordering System with Customization. The client expressed the need to simplify how cabinet orders are received and processed, as their current process involves switching between multiple messaging applications such as Emails and Viber. This setup often results in missed messages, untracked orders and delayed customer replies. The client emphasized that a centralized system would reduce confusion and manual errors while improving the overall order handling workflow.

The client stated that the system would streamline and simplify their operations particularly by reducing the inefficiencies caused by using multiple platforms for handling orders and inquiries. They want a solution that supports a smooth and organized flow one that enables customers to place orders, send payments, and ask questions all in one place. The system must be capable of

handling payments through QR code, provide instant responses to common inquiries and track order status. With a centralized and easy-to-use platform, the client aims to provide customers with a more convenient ordering experience while ensuring that all orders and their history are recorded in an organized.

Although no advanced features were requested the client emphasized that the system must remain simple, user friendly and focused only on essential tasks. The platform should be accessible to both customers and admins with minimal training required. In short the system must support the client's operations by providing a clean and organized platform for taking orders, managing communication, receiving payments, and maintaining records ultimately improving the accuracy, speed, and overall productivity of their business process.

Design of Software, System, Product, and/or Processes

The system will be designed using standard software development practices to make sure it is reliable, easy to use and fully functional. The system's structure will support future growth, allowing it to handle more users and features as the business expands. A modular design approach will be used so that each part such as the cabinet customization form, order tracking, chatbot and payment system can work on its own while still being connected to the whole system. Security and responsive design will be prioritized to make sure the website is safe and works well on different devices like computers, tablets, and smartphones.

User-centered design will guide the development to make sure the system is simple and clear for both customers and admins. The team will use Figma to create wireframes and mockups that show how the pages will look and work. The client's feedback will be used to improve the layout and make sure it meets user expectations. For example, the customization feature will be designed to make it easy to choose cabinet types, sizes, and colors. Order status will be clear and easy to follow and the chatbot will be placed in an easy-to-access part of the website. These changes will help reduce user effort and improve satisfaction.

The system will be developed using HTML, CSS, JavaScript, PHP, and MySQL. Three.js will be used to show the 3D cabinet previews. XAMPP will serve as the local testing environment and generated QR code will also use for payments APIs will also be used for features like GCash QR code generation and real-time updates. The final system will be easy to manage, secure, and aligned with the client's needs and brand.

Conceptual Model of the Study

Input	Process	Output
Customer Information • Name • Address • Contact Number • Email • Login Credentials • Feedback & Ratings **Order Details** • Cabinet Type • Size, Color, Layout, Material • Quantity **Payment Details** • GCash QR Payment **User Roles** • Customer • Admin • Owner • Secretary **System Requirements** • Chat Inquiry • Order Tracking • Cabinet Customization • Email Verification	**Web-Based Ordering System with Customization for Rads Tooling**	**System Modules** **A. Homepage** • View products & announcements **B. Registration/Login** • Email verification • User authentication **C. Cabinet Customization** • Real-time 360° preview • Layout, color, size selection **D. Order Placement** • Auto-price calculation • Submit order **E. Chatbot Module** • Admin-customer chat support **F. Order Tracking** • View status (Pending, In Progress, Completed) **G. Payment Module** • QR code generation • Payment verification • Payment Details **H. Order Completion Confirmation** • Confirm order to complete transaction

		I. Admin Panel • Manage orders & customers • Post content/announcements • View feedback and reports from sales and orders

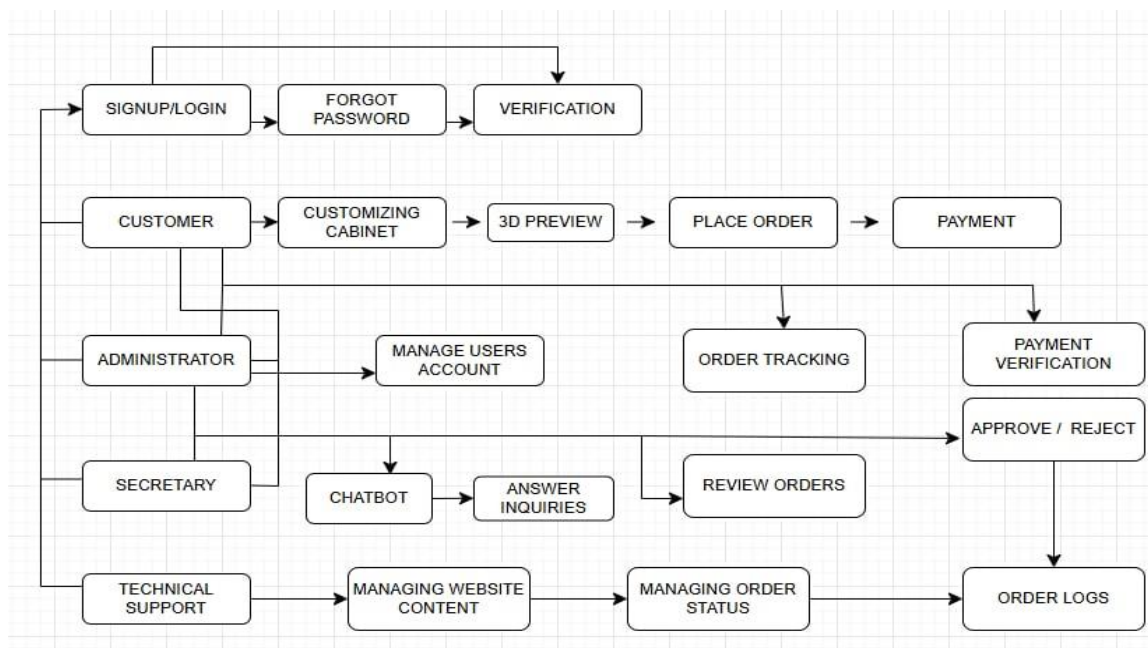*Table 1. Conceptual Model*

Figure 8. Web-based Ordering System with Customization Data Flow Diagram
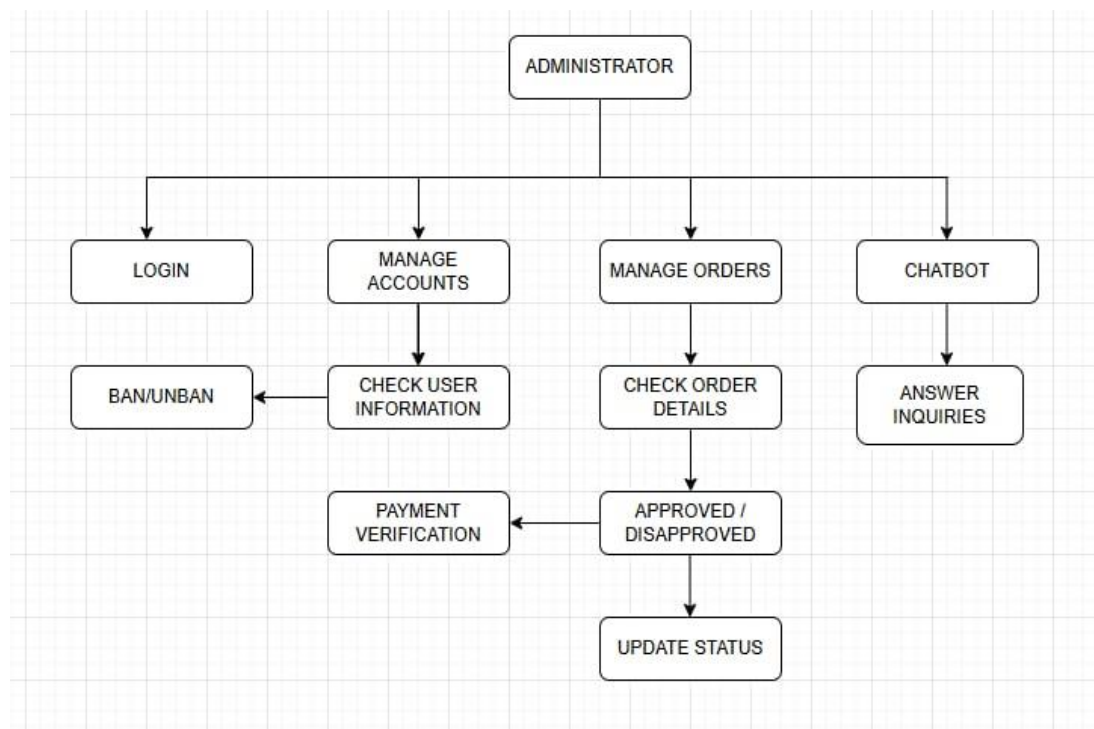
Figure 9. Web-based Ordering System with Customization HIPO Diagram (Administrator)
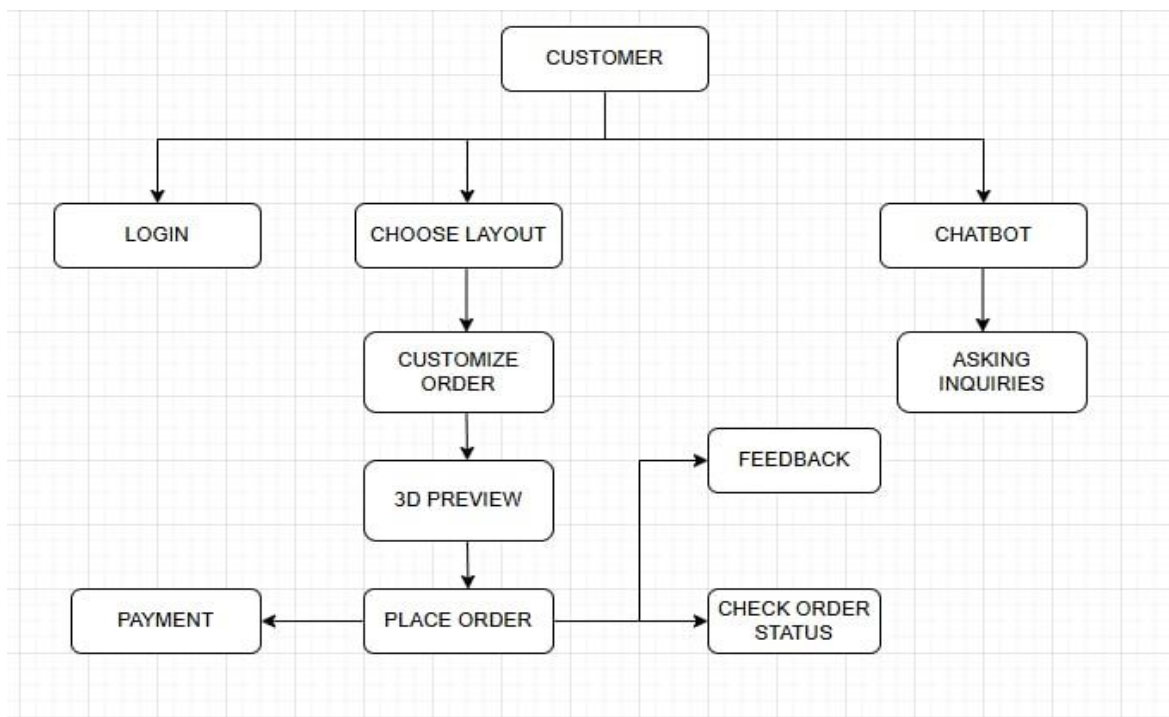

Figure 10. Web-based Ordering System with Customization HIPO Diagram (Customer)
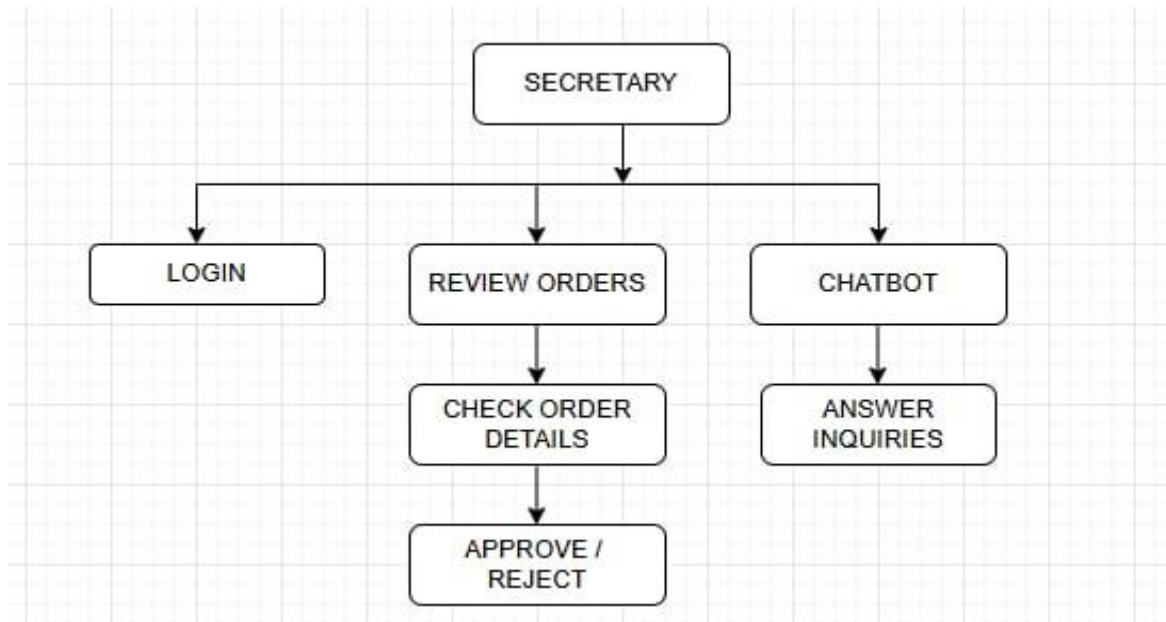
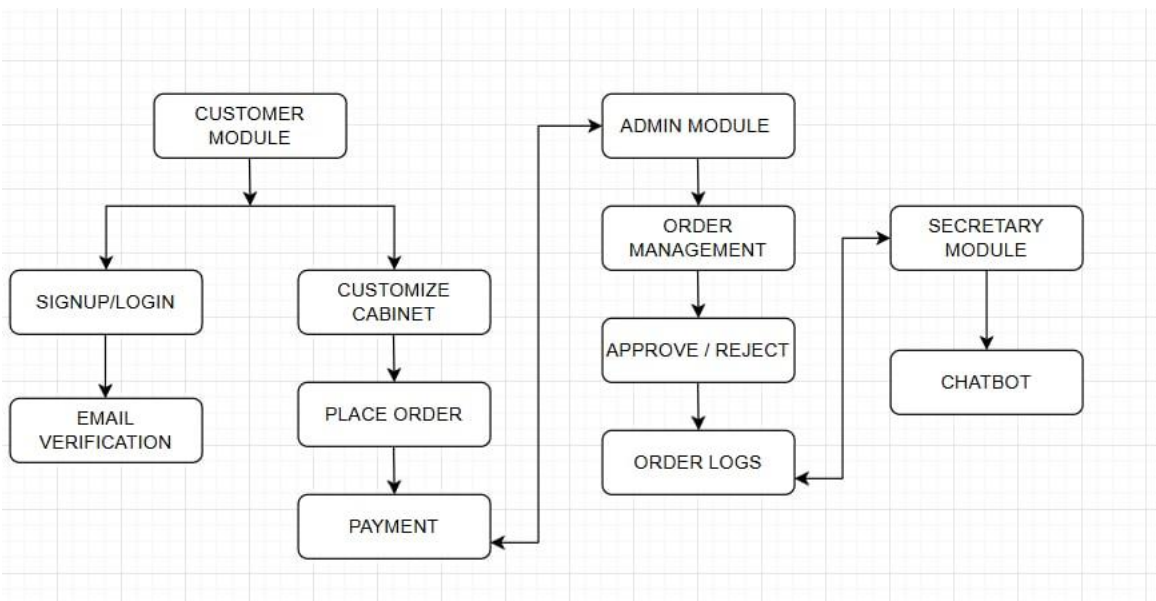Figure 11. Web-based Ordering System with Customization HIPO Diagram (Secretary)

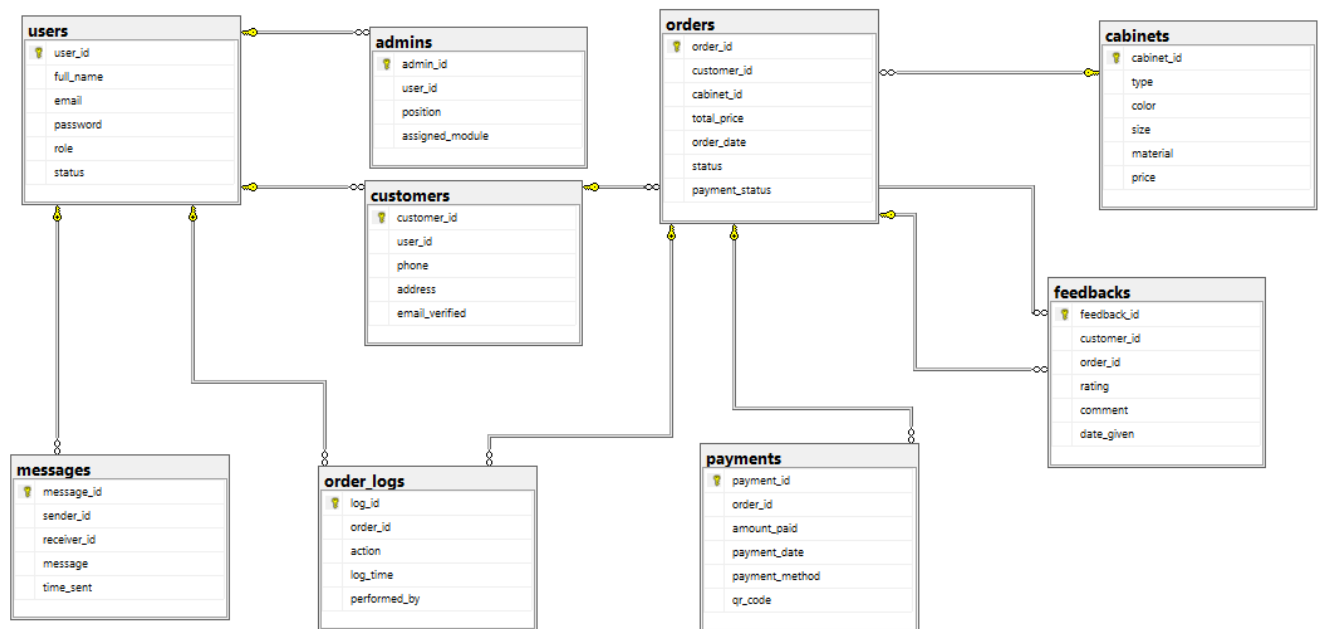*Figure 12. Web-based Ordering System with Customization Block Diagram*

Figure 13. Rads Tooling Entity Relationship Diagram (ERD)

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APPENDICES

Resource Person

Owner: Mr. Rodel Delo Santos

Mr. Rodel Delo Santos is the owner of Rads Tooling. He plays a pivotal role in the overall operations of the business.

Secretary: Ms. Abigail Canteras

Ms. Abigail Canteras the Secretary of Rads Tooling, provided insights and information during our interview.

Project Adviser: Ms. Venice Angelica Alcantara

Ms. Venice Angelica Alcantara serves as the adviser for the research project, providing essential guidance throughout its development.

Program Head: Ms. Maureen Royce Sacay

Ms. Maureen Royce Sacay serves as the program head at STI College Dasmarinas, providing essential leadership for the overall development of research projects.

Secapuri, Moenmar M.

Blk 4 Lot 47, Phase A, Laterraza

Subdivision, Brgy. Bucandala 3

IMUS CAVITE

moen.secapuri27@gmail.com

0993-706-0282

EDUCATIONAL BACKGROUND

Level	Inclusive Dates	Name of school/ Institution
Tertiary	2022 – Present	STI College of Dasmarinas
Vocational/Technical	2019 – 2022	Emilio Aguinaldo College Cavite
High School	2016 – 2019	APEC Schools Dasmarinas
Elementary	2010 – 2016	Maranatha Christian Academy

SKILLS

SKILLS	Level of Competency	Date Acquired
Java	Beginner	2022
C#	Beginner	2023
SQL	Beginner	2024
HTML	Beginner	2025
CSS	Beginner	2025
JavaScript	Beginner	2025
PHP	Beginner	2025

Curriculum Vitae of

Santos, Vien Ezekiel S.

Blk 18 Lot 99, Brgy. Severino Delas Alas

GMA CAVITE

viensantos98@gmail.com

0976-228-4470

EDUCATIONAL BACKGROUND

Level	Inclusive Dates	Name of school/ Institution
Tertiary	2022 – Present	STI College of Dasmarinas
Vocational/Technical	2019 – 2022	Christian Grace School of Cavite
High School	2016 – 2019	Christian Grace School of Cavite
Elementary	2010 – 2016	Area J Elementary School

SKILLS

SKILLS	Level of Competency	Date Acquired
Java	Beginner	2022
C#	Beginner	2023
SQL	Beginner	2024
HTML	Beginner	2025
CSS	Beginner	2025
JavaScript	Beginner	2025
PHP	Beginner	2025

Ballesteros, Benz Bryan S.

Blk 15 Lot 17, Woodcress 1,

Lancaster New City, Brgy. Tapia

GENERAL TRIAS CAVITE

benzbryan2001@gmail.com

0977-044-6799

EDUCATIONAL BACKGROUND

Level	Inclusive Dates	Name of school/ Institution
Tertiary	2022 – Present	STI College of Dasmarinas
Vocational/Technical	2019 – 2022	National College of Business and Arts
High School	2016 – 2019	National College of Business and Arts
Elementary	2010 – 2016	Mother Lourdes Learning School

SKILLS

SKILLS	Level of Competency	Date Acquired
Java	Beginner	2022
C#	Beginner	2023
SQL	Beginner	2024
HTML	Beginner	2025
CSS	Beginner	2025
JavaScript	Beginner	2025
PHP	Beginner	2025

Cablao, Shan Rafaelle E.

Blk 8 Lot 8, Brgy. Piela, Sampaloc III

DASMARI ÑAS CAVITE

shancablao1@gmail.com

0918-445-9446

EDUCATIONAL BACKGROUND

Level	Inclusive Dates	Name of school/ Institution
Tertiary	2022 – Present	Sti College of Dasmarinas
Vocational/Technical	2019 – 2022	Christian Grace School of Cavite
High School	2016 – 2019	Christian Grace School of Cavite
Elementary	2010 – 2016	Zoe School

SKILLS

SKILLS	Level of Competency	Date Acquired
Java	Beginner	2022
C#	Beginner	2023
SQL	Beginner	2024
HTML	Beginner	2025
CSS	Beginner	2025
JavaScript	Beginner	2025
PHP	Beginner	2025

Endorsement Letter

Figure 14 . Endorsement Letter

TRANSCRIPT OF THE INTERVIEW

INTERVIEWER: Hello po, good morning po. I'm Moen Secapuri po, project manager po ng capstone group namin. And may mga interview questions lang po kami regarding sa business niyo po.

INTERVIEWER: So, ang ano po, kailan po ba na tayo yung...

INTERVIEE: Na-establish yung RADS tooling, August 28, 2007.

INTERVIEWER: Hmm, 2007 so bale ano na po almost

INTERVIEWEE: 17-18 years na gano'n.

INTERVIEWER: opo, so almost 2 decades na po nag ooperate.

INTERVIEWEE: oo

INTERVIEWER: So, ano po yung parang operating hours niyo po dito sa...

INTERVIEWEE: Ang sa office kasi is 8 to 5, Monday to Saturday. Pero dito sa

akin sa admin is 7 to 5 ako, so wala akong Saturday. So, nag-a-adjust ako ng

oras. Pero yung production namin is 7am to 3pm. So, pag nag-excess, overtime na

nila yun.

INTERVIEWER: ahmm, opo.

INTERVIEWER: So, kapag ano po ahm... Kunyari, pag holidays, open pa rin po ba?

INTERVIEWEE: ahm.. Hindi. Pag regular holidays, hindi kami nag-operate. Pero yung production, once na meron kaming urgent... Pag regular, wala eh. Pero pag special, nagpapapasok eh.

INTERVIEWER: ahh.. Opo Nagpapapasok parin kahit ano.

INTERVIEWEE: nag papapasok siya. Yung production lang.

INTERVIEWER: Ah, yung production lang. At kung kunyari, office? Wala po?

INTERVIEWEE: Wala talaga. Kahit special or regular, wala.

INTERVIEWER: Yung dun lang po talaga sa ano..

INTERVIEWEE: Special lang pinapasok nila. Yung regular, hindi. Hindi talaga sila

na pasok.

INTERVIEWER: So ahm, Sa tingin niyo po, parang ano pong naging uniqueness ng business niyo sa mga competitors, ganon?

INTERVIEWEE: Kasi yung sa'min kasi, yung mga binibigay kasi namin, quality, tapos at the same time affordable. Kaya siya. Kung baga, parang yun lang yung kaya naming iano sa ibang competitor na ano good quality, affordable naman din yung presyo ganon.

INTERVIEWER: So, ayun nga po. Nabanggit niyo po na quality and affordable. So, pwede ko pong matanong kung paano niyo po parang pinipresyohan yung mga ino-offer niyo na para sa mga clients niyo po?

INTERVIEWEE: Kasi pag nagpepresyo kasi kami sa ano, misan yung mga ibang competitor, Yung ibang client namin na ganito yung presyo ni ano, hanggat kaya namin

babaan o tapatan lang din.

INTERVIEWER: babaan opo.

INTERVIEWEE: Ganon kami magpresyo. Kung baga, Kasi misan nagbibigay din na

ganito yung presyo nung kalaban. O sige ma'am, kung kaya din naman namin babaan ng

konti. Kaya sige sila din naman. Kahit naman yung iba namin clients sa Quezon

City, ganyan din sila. Kung baga marami na rin silang ibang kinukuhanan, pero

nabalik at nabalik talaga sila dito samin.

INTERVIEWER: So, ang next question ko po is ano ahm, sa tingin niyo po, ano pong parang marketing strategy na parang pinakamagandang marketing strategy na ano po pinaka naging effective sa business po?

INTERVIEWEE: Ano kasi, pagdating kasi sa marketing strategy, si sir kasi more on hands-on talaga yan. Siya talaga yung boss talaga namin, napunta mismo.

INTERVIEWER: ah, pinupuntahan niya talaga.

INTERVIEWEE: Pagdating, oo, siya talaga yung pupunta doon mismo. Kaya, kung baga, hindi na yung client din na dumadirect sa amin, ganyan, mismong owner na yung nakikiano sa amin. Kaya pag meron silang gustong hingin ng discount, madali kasi na owner na yung mismong kausap nila.

INTERVIEWER: nakakausap nila..

INTERVIEWEE: Oo, pagdating kasi sa ganoon, owner na yun. Owner to client. Wala nang office na pumupunta, wala nang dumadirect sa amin. Yung boss na mismo namin, napunta doon.

INTERVIEWER: Tapos, ano po ahmm, tanong ko lang po, paano niyo po nahahandle yung mga customer feedback, both positive and negative po?

INTERVIEWEE: Ano lang, kapag sa positive naman, syempre, mas maganda yung impact na nun sa amin. Siyempre, kung baga, mas makikilala kami, ganyan. Pagdating naman sa negative, ini-improve lang namin kung ano yung mga kailangan pa nila, yung mga feedback nila yung nakukuha namin. Ini-improve lang namin hanggang sa makasatisfy na sila pagdating din sa product na binibigay namin.

INTERVIEWER: Tapos, ano po, paano po kayo nakakaatract ng bagong customer? Paano niyo po siya, parang, ina-advertise po yung ano...

INTERVIEWEE: Dito kasi hindi kami mismo yung parang nag-advertise.

INTERVIEWER: ahhh..

INTERVIEWEE: Kung baga, nire-refer kami ng mga client namin. Meron kami kasing client, nasa Quezon City, nire-refer kami na, dito kayo kumuha, ganyan. So kung baga, yung mismo kliente na namin yung nagre-refer sa amin. Kung baga, hindi talaga kami nag-fifilled, nag-advertise, wala kami ganun. Kung baga, sila mismo yung, nagugulat nalang kami ni-refer daw sila. ni ganito, ni ganyan.

INTERVIEWER: ahh, bale parang word of mouth po pala. Parang galing din sa ano. Okay po.

INTERVIEWER: Tapos... Ayun po pala. Ito po, last question po. Ano po yung parang business process nyo po dito? Parang paano niyo po siya... Parang... Minamarket ganon?

INTERVIEWEE: Minamarket?

INTERVIEWER: opo..

INTERVIEWEE: ano nga ulit?

INTERVIEWER: Yung business process po. Kunyare po, through... Yung parang pag-contact nyo po sa mga client. Ganon po.

INTERVIEWEE: hmm, bale ano eh yung tawag dito. sa kung paano... Ano kasi, through Viber lang kami tsaka email eh. Misan po number, follow up. Anong status? Ganon po.

INTERVIEWER: Wala po kayong ahm Facebook page ganon po?

INTERVIEWEE: ay wala..

INTERVIEWER: ay wala po? Okay po..

INTERVIEWEE: email lang talaga. Through email lang kami tsaka Viber.

INTERVIEWER: Okay po.

INTERVIEWER: tas ano po pala, anong tawag doon, paano niyo po kunyari nahahandle yung mga issue between, kunyari sa client po, gano'n, kanyari diba napag-usap po kayo ng client, tas parang, parang hindi po nag kasundo po doon sa parang ano, kunyari sa design gano'n, o sa ano.

INTERVIEWEE: Ang nangyayari kasi pag ganyan, pag halos repeat order lang, okay lang eh. Pero pag may mga bago silang design, pinupuntahan siya ng technical sales namin para sukatan, ayusin yung ano. Then pag binigay sa kanya yun, iddraw niya sa autocad, tapos ibibigay niya doon sa production.

INTERVIEWER: ahhh.. Okayy..

INTERVIEWEE: Ganon yung sistema samin. Pagka bago, pinupuntahan niya. Pero pag halos repeat order lang, hindi na naman na kami napunta masyado. Yung mga new design lang.

INTERVIEWER: Tapos, paano niyo po kunyari na hahandle yung ano? Kunyari po marami pong orders na napasok po, ganon.. Paano niyo po na hahandle yung ganon po?

INTERVIEWEE: Kasi pagdating sa orders, ah ano lang, pag maraming PO yan, ganyan, nilalagay lang namin siya sa board. Tapos lalagay din namin siya sa board doon sa production.

INTERVIEWEE: Ang pagdating kasi sa ganyan, kung ano talaga yung urgent, yun lang muna yung pinapatapos. Tapos minsan ginagawa naman namin pagsabay-sabay, halos pare-parehas lang naman din sila ng order. 30-30 lang. 30% muna, 30% doon sa isang client, 30%. Kasi tatlo silang pare-parehas ng order eh.

INTERVIEWER: ahh.. Okay po.

INTERVIEWEE: So yung tatlo na yun, gagawin namin, dedeliveran namin ng 30%, 30%, 30%. Ganon. Parang ano lang kami, partial-partial lang muna.

INTERVIEWER: ahh partial- partial muna

INTERVIEWEE: Oo, Kasi hindi kaya ng production pag ganon kadami.

INTERVIEWER: Tapos isa pa pong tanong ko po. Kunyari po, parang nagkausap na po kayo don po ng client. Ano po kunyari kapag ipapaka-cancel po nila? Ano po yung parang way niyo doon para ano...

INTERVIEWEE: Kasi pag ganyan kasi, malalaking order, nagre-require kami ng down payment. Pero pag...

INTERVIEWER: Mga ilang percent po yung down payment?

INTERVIEWEE: ahh 30%. 30% doon sa PO nila. Nagre-require kami. Kasi nga yun nga iniiwasan nga namin yung biglang cancel. So simula naman nung pumasok ako dito, wala

pa naman ako na-encounter na cancel order. Kasi yun nga, inaano din nila. Pag-cancel kasi nila, hindi na nila na-re-refund yung ano nila. Kaya na-re-require namin sila.

INTERVIEWER: So ano po, sa payment method po? Ano po yung payment method?

INTERVIEWEE: Yung iba, cash, naka-terms, tapos cheque deposit, tapos e-transfer. Yung lang naman yung ano namin po.

INTERVIEWER: So lastly po is, sa tingin niyo po, paano po makakatulong yung idedevelop po namin na system dito sa business po?

INTERVIEWEE: Siguro mas magiging madali yun para sa amin. Kasi ang lagi talaga naming issue pagdating sa order system is yung hindi sila, hindi nagkakaintindihan between client at saka yung mismong production namin. Kaya nangyayari, nagdoble yung gastos kasi usually ang pinupuntahan naming ung mismong client namin, Quezon, Binondo, Bulacan.

INTERVIEWER: opo..

INTERVIEWEE: So yung transpo, pabalik ka, skyway, syempre magastos, pabalik-balik kami. So siguro yung , pag yung pinropose niyo, mas magiging madali na sa kanila kasi kumbaga iaano nalang nila andon na lahat yung specific dimension, lahat. So magiging madali yan para sa amin. Kumbaga magiging madali sa amin, hindi lang sa amin, at the same time pati sa clients and magiging client namin.

INTERVIEWER: So pwede po magpakilala po kayo?

INTERVIEWEE: Ako si Abigail Canteras, admin dito sa RADS tooling. Undergraduate ako ng Computer Science sa Cavite State University, Silang Campus. I'm 27 years old.

INTERVIEWER: okay na po. Thank you po..

INTERVIEWEE: thank youu..