

**MPM Furniture Online Shop and Customization System with Cost Estimation**

**A Capstone Project Proposal  
Presented to the Faculty of the  
Information and Communications Technology Program  
STI College General Santos City**

**In Partial Fulfilment  
of the Requirements for the Degree  
Bachelor of Science in Information Technology**

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## **ENDORSEMENT FORM FOR PROPOSAL DEFENSE**

**TITLE OF RESEARCH:**                    **MPM Furniture Online Shop and  
Customization with Cost Estimation**

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

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## **APPROVAL SHEET**

This capstone project proposal titled: MPM Furniture Online Shop and Customization with Cost Estimation prepared and submitted by **Dia L. Centino, Rey B. Delator, Adrienne Carl J. Flores, Julius E. Gallego, and Rustan Jade L. Gawal** and 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.

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# INTRODUCTION

## **Project Context**

The progress of advanced technology is still a priority in present society. Technology has become more and more required by people's everyday life owing to the impact it makes on their lives.

Nowadays, since most of the things are done online, especially business operations, web development is necessary. Furniture stores running their businesses around the world face a lot of problems. It becomes even harder for these companies due to rapid shifts in tastes and preferences among customers as well as managing global supply chain intricacies. Whether they are traditional physical retailers or contemporary online merchants, they all have comparable concerns regarding inventory accuracy, ensuring enough options to customize clients' purchases and working out how to source furniture from various parts of countries.

In addition, customers are always demanding more than before. It is a challenging time for furniture firms nowadays. According to (Olkowicz & Grzegorzewska 2014), these challenges surround effectively managing their operations amidst ever-changing consumer preferences as well as complex global supply chains. In this case, proponents will consider things like limited possibilities of personalizing items, problems with storage, many complications in distribution chains and growing consumer demands among others. These predicaments make it difficult for furniture companies to effectively compete with their rivals as well as satisfy their clients' ever-changing needs. The proponents take a closer look at these issues and try to find ways that can help furniture shops survive in the current high-speed world. Efficient management and meeting the differentiated expectations of varied customers remain a major challenge for furniture industries in the Philippines. One of its biggest concerns is limited access to technology, which prevents it from adopting advanced management systems and providing tailored solutions to its clients. Also, amidst stiff competition among domestic and international firms, furniture companies should engage themselves in innovative practices if they want to attract and retain consumers.

This calls for customized options nevertheless, introducing such initiatives is not feasible as far as the furniture industry is concerned because of the lack of necessary technological infrastructure. These issues therefore require unique dynamics that would solve them within the Philippine furniture industry context. Maximizing available technology despite limitations is important for greater efficiency in terms of operating system, productivity and customer satisfaction. By tactfully planning this approach into practice, the Philippine furniture industries might overcome their challenges that are associated with technology and establish themselves firmly in those global markets. In this manner these enterprises can tap on their potential for sustainable growth through orderly scheduling and implementation.

MPM Furniture was established in 2014. Its major business is related to customizing and selling of furniture. Since the beginning of this business, it has had a small group of customers. The existing system of MPM Furniture is a manual one. While the company has been growing, the company has a higher number of customers. The amounts of data as well as the number of transactions per day have also grown. The manual sales processing is found to be insufficient to cope with the present business atmosphere. Thus, the website online is developed with the hope of increasing to serve the needs of customers both efficiently and reliably.

The proponents will develop "MPM Furniture Online Shop and Customization System with Cost Estimation" that helps in handling business operations that have user management, inventory management, sales transaction, payment options, customization, suppliers record, delivery status, and to reduce redundant processes. This system will provide convenient furniture online shops with customization options.

### **Purpose and Description:**

MPM Furniture Online Shop and Customization System with Cost Estimation is a web-based system that allows users to manage and interact with the system. This system helps

the business in terms of handling operations and various functions of the MPM Furniture business within the system. Admin is the one who manages and oversees various aspects, including user management, inventory management, sales transaction, customization, payment options, suppliers, and delivery status. The system provides a convenient online furniture shop where customers can browse, search, and purchase finished products. The system also offers customization options, where they can choose the type of furniture which are limited for table, bed, sofa, and storage unit and have an option to select with their preferred style, design, sizes, and other preferences with cost estimation.

The system has various functions for the admin, including monitoring, tracking, and updating products to the inventory. Admin can view all available products grouped by categories. Admin shall be able to add a new product by entering product name, description, quantity, price, and image. Also, to edit and update each product as needed. Admin shall be notified when stock levels are low and need to be restocked. Admin monitor and track the quantity of daily sold product by categories and shall view the availability of each. Admin monitors sales trends, popular products such as the top selling products. Admin also monitors and updates the incoming and outgoing supplies. On sales transactions, admin shall view all orders placed by the customers with the details such as order ID, customers details, and product purchase details. Admin can monitor daily sales revenue based on the total amount of the quantity of sold product, recorded by the staff. Admin shall be able track and monitor monthly total revenue, average order, and the top-selling products. Admin shall monitor payment, including online and cash receipts, which serves as proof of successful purchase and for tracking sales records.

Admin provide the types of furniture that are available to customize, including the table, bed, sofa, and storage unit. Admin sets customization options for the customers to select based on their preferred style, design, sizes, and other customer's preferences with cost estimation, in which the added price will display for every detail of customization and it will automatically calculate the total cost. Admin setup payment options online via Gcash or Maya with billing information, and cash on delivery. Admin shall verify payment receipt to confirm the successful transaction. Admin can track the status of orders of their customers. They can also monitor customer's feedback and can respond to their reviews.

Admin shall be notified about the return and refund request. They will review and confirm order information, and validate if the return meets the requirements outlined in the return policy. Admin handles supplier's information and supplies record, where admin can add new supplier by entering relevant details, and shall edit and update information as needed. Also, regarding the incoming supplies from the supplier, after receiving supplies, admin shall be able to update inventory accordingly.

For the Staff, they can only access the module based on the assigned roles and permission, including the inventory where staff allows access to the status of stock level and shall update the admin when stock levels are low and need to be restocked. Staff allows to update the quantity of daily sold product based on sales and shall update the availability of each. Admin will be able to view sales trends, popular products such as the top selling products and also the available products by categories with the details such as product name, description, quantity, price, and image. Staff can handle sales and transactions, in which they process orders, verify payment, and prepare items for shipping. They generate and attach shipping labels to packages, including customer address details and shipping information. Staff will notify the customers about the status of their orders as out of delivery or delivered. They will be immediately informed of any delays or changes in schedule, along with the estimated delivery date. Staff can read the customer's feedback and respond to their reviews. Staff will be notified about the return and refund request. They shall notify the customers if their request is approved or disapproved.

For the Customers, they can create an account by providing username, password, name, contact, email, and address. For the existing customers, they can login using their login credential. Customers shall manage their account details and update profile. They can also read the terms and conditions after logging in with the system. Customers can browse finished products and view different types of furniture. They can easily find furniture items by applying filters, searching keywords on the search bar. Customers can customize product, where they can choose the types of furniture they want to customize that limited only for table, bed, couch, divider, and desk, then they can select their preferred design, style, sizes and other preferences with cost estimation, where they can view the added pricing for every detail of customization and will automatically calculate the total cost



estimation.

Customers can add multiple products to the cart, including the customized product. They shall view a list of added products by category. Customers shall enter shipping details, including the postal/ZIP code. The customer reviews the order summary, confirms the details, and completes the purchase by making a payment or selecting payment method then place order. After checkout process, customers receive an order confirmation with details, order number, and estimated delivery timeframe. Customers can track their orders online to monitor the progress and receive notifications when the order is out for delivery or delivered. They will be informed of any delays or changes in the schedule, along with new estimated delivery dates. After receiving the item, customers can leave a feedback, star rating or written rating for the purchased item. Customers can request return and refund by completing the request form and entering information such as the reason for returning the item, item's condition, and their choice between return or refund.

### **Objectives of the study:**

The objective is to develop and implement a system entitled “MPM Furniture Online Shop and Customization System with Cost Estimation”.

The specific objectives are as follows:

- To develop a feature where customers can customize products with cost estimation.

*This objective will allow customers to customize products by choosing furniture types such as table, bed, sofa, and storage unit and selecting their preferred style, design, sizes, and other preferences with cost estimation that is displayed for every detail of customization.*

- To develop a feature where customers can browse, search and filtering, view different types of furniture, add to cart and purchase products.

*This objective will allow customers to browse finished products, search to easily find the item, to view each item with the details such as product name, image,*

*description, quantity, and price. Customers can add multiple products to the cart. They can view all lists of added products which group by category.*

- To develop a system that can accept online and cash payment from the customers.

*This objective will allow admin to set up payment options for the customers to choose to pay online via Gcash or Maya during checkout process or choose cash on delivery.*

- To develop a system where admin monitors inventory management.

*This objective will allow admin to monitor available products with the details such as product name, description, quantity, price, and image. Admin can add new products, edit, and update each product. Admin shall be notified by the staff when stock levels are low and need to be restocked. Admin monitors and tracks the quantity of daily sold product by categories and shall view the availability of each. Admin shall also monitor sales trends, popular products such as the top selling products.*

- To develop a system where admin monitors and handles sales transactions.

*This objective will allow admin to monitor daily sales revenue based on the total amount of the quantity of sold product, recorded by the staff. Admin can track and monitor monthly total revenue, average order, and the top selling products. Admin shall collect and verify payment details, including online and cash receipts, which serves as proof of successful purchase and for tracking sales records.*

- To develop a feature that allows staff to notify customers regarding the status of their orders

*This objective will allow staff to process the order placed by their customers, they shall notify customers about the status of their orders through system notification. Customers will receive notification regarding their order status.*

- To develop a system where admin handles supplier information and supplies

*records.*

*This objective will allow admin to add new suppliers with their relevant details, they can also edit and update supplier's data as needed. Admin handles incoming supplies from the supplier, and shall update the inventory accordingly.*

- To develop a feature where admin provide return and refund.

*This objective allow admin and staff to be notified about the return and refund request of the customers. The customers shall complete the request form by entering information such as the reason for returning the item, item's condition, and their choice between return or refund.*

- To develop a feature where customers can leave reviews and ratings for the purchased item.

*This objective will allow customers to leave feedback, star or written ratings after receiving the item if they are satisfied or not.*

## **Scope and Limitations:**

### **Scope**

#### **Admin:**

- User Management - a scope allows users to have their account and manage login information.
  - Admin Module - a module that provide user interface where admin manages the system
    - Policies - Admins can update terms and conditions, return/refund policies, and privacy guidelines. They ensure that policies are clear, consistent, and compliant with regulations.

- Staff Module - where admin creates and manages staff accounts within the system. Admin shall assign roles and permission to their staff.
- Inventory Management - a module that provides a user interface that allows admin to monitor, track, and update inventory.
  - Product Category - display all available products grouped by categories with the details such as product name, description, quantity, price, and image.
  - Product Listing - admin can add new products, edit, and update each product.
  - Stock level - admin notified when stock levels are low and need to be restocked.
  - Inventory Record - admin monitor and track the quantity of daily sold product by categories and shall view the availability of each.
  - Inventory Report - detailed report on sales trend, popular product such as the top selling products.
- Sales Transaction - a module that provides a user interface that allows admin to monitor and handle sales and transactions.
  - Ordering - admin monitor all orders placed by the customers with the details such as order ID, customers details, and product purchase details.
  - Sales Record - shows daily sales revenue based on the total amount of the quantity of sold product.
  - Sales Report - admin track and monitor monthly total revenue, average order, and the top selling products.
  - Payment - admin will monitor payment, including online and cash receipts, which serves as proof of successful purchase and for tracking sales records.

- Transaction History - shows all past transactions, such as orders and payment details, this serves as for references.
- Customization - a module that provides a user interface where admin sets furniture types and customized options with cost estimation.
  - Furniture Type - a list of products that are available to customize, including table, bed, sofa, and storage unit.
  - Customize Options - admin sets customization options for the customers to select based on their preferred style, design, material, sizes, and other customers preferences.
  - Cost Estimation - where admin sets up cost estimation, in which the added price will display for every detail of customization and it will automatically calculate the total cost.
- Payment Option - a module that provides a user interface where admin setup payment options online via Gcash or Maya with billing information, and cash on delivery.
- Shipping Status - a module that provide label where admin can track the status of orders of their customers.
- Reviews and Ratings - admin monitors customer's feedback and can respond to their reviews.
- Return and Refund - admin shall notified about the return and refund request. They will review and confirm order information, and validates if the return meets the requirements outlined in the return policy.
- Supplier - a module that provides a user interface where the admin handles supplier's information and supplies records.
  - Supplier List - a list that displays all supplier's information.

- Supplier - admin can add new supplier by entering relevant details. Admin shall edit and update information as needed.
- Supplies Record - admin handles incoming supplies from supplier.

**Staff:**

- Staff Module - a module that provides a user interface where staff can only access the module based on the assigned roles and permission.
- Inventory Management - a module that provides a user interface where staff allows them to update stocks and reports to the inventory.
  - Product Category - staff can view all available products by categories with the details such as product name, description, quantity, price, and image.
  - Stock Level - staff allows access to the status of stock level and shall update the admin when stock levels are low and need to be restocked.
  - Inventory Record - staff allows to update the quantity of daily sold product based on sales and shall update the availability of each.
  - Inventory Report - view sales trends, popular products such as the top selling products.
- Sales Transaction - a module that provides a user interface that allows staff to handle sales and transactions.
  - Ordering - staff allows to process orders, verify payment, and prepare items for shipping. They generate and attach shipping labels to packages, including customer address details and shipping information.
  - Sales Record - where staff allows to record daily sales revenue based on the total amount of the quantity of sold product.

- Sales Report - shows monthly total revenue, average order, and the top selling products.
- Payment Receipts - staff shall collect and verify payment details, including online and cash receipts, which serves as proof of successful purchase and basis for recording daily sales.
- Transaction History - shows all past transactions and order history, this serves as for references.
- Shipping status - staff will notify the customers about the status of their orders as out of delivery or delivered. They will immediately informed of any delays or changes in schedule, along with the estimated delivery date.
- Review and Rating - staff allows to read the customer's feedback and responds to their reviews.
- Return and Refund - staff will notified about the return and refund request. Staff shall notify the customers if their request is approved or disapproved.

#### **Customers:**

- User Management - a scope that allows customers to interact with the system.
  - Account Creation - where customers should register accounts by providing their personal details, and shall create login credentials.
  - Profile Page - where customers are allowed to manage account details and update profile. Customers shall also read the term and conditions within the system.
  - History of transaction - where customers view their order history, payment details

- Gallery - a module that provides a user interface where customers can browse finished products and view different types of furniture.
  - Product Category - where customers can view and search the product which categorizes based on the types of furniture.
  - Product Display - customers can browse each product that displays with image, name, description, quantity, and price.
- Search and Filtering - a feature where customers can easily find furniture items by applying filters, searching keywords, or browsing categories.
- Customization - a module that provides a user interface where customers can personalize furniture products based on their needs and preferences with cost estimation.
  - Furniture Type - customers can choose types of furniture that they want to customize that are limited only for table, bed, sofa, and storage unit.
  - Customized Options - customers can select their preferred style, design, material, sizes, and other preferences.
  - Cost Estimation - where customers view total cost added for every detail of customization.
- Shopping Cart - a module that provides a user interface where customers can add multiple products to the cart, including the customized product. They shall view a list of added products by category.
- Ordering - where customers shall enter shipping details, including the postal/ZIP code. The customer reviews the order summary, confirms the details, and completes the purchase by making a payment or selecting payment method then place order. After checkout process, customers receive an order confirmation with details, order number, and estimated delivery timeframe.



- Down payment - Customers have to make a down payment when customizing, securing their purchase while deferring the full payment.
- Delivery Cost - If the postal/ZIP code is in the list of eligible areas, the system applies a free delivery option. If it's not on the list, the system calculates the delivery cost based on standard shipping rates.
- Payment Options - a module that provides a user interface that allows customers to choose to pay based on their preferred payment options, such as online via Gcash or Maya or in cash.
- Shipping status - customers can track their orders online to monitor the progress and receive notifications when the order is out for delivery or delivered. Customers informed of any delays or changes in the schedule, along with new estimated delivery dates
- Reviews and Ratings - a feature where customers can leave a feedback, star rating or written rating for the purchased item, after they received the item.
- Return and Refund - customers shall complete a request form by entering information such as the reason for returning the item, item's condition, and their choice between return or refund.
  - Approved - if the return request is authorized, the customer will receive an email notification with return instructions, which may also include a return shipping label.
  - Disapproved - if the return request is denied, the customer will be informed along with a reason.

### **Limitations.**

- The system has a customization option that limited only for various types of

furniture such as table, bed, sofa, storage unit.

- MPM Furniture communicate realistic lead times for customized orders based on the complexity of the design, availability of material, and existing production schedules.

## **REVIEW OF RELATED LITERATURE/SYSTEMS**

In this chapter, the proponents will be presenting past published studies, as well as literature that will rationalize the significance of using the furniture management system.

### **Related Literature**

The furniture industry is an important sector of Niger state's economy, providing employment opportunities and contributing to the state's GDP (Aghimien and Oseghale, 2014). The industry is made up of small and medium-sized enterprises (SMEs) that specialize in the production of wooden furniture such as chairs, tables, beds, and cabinets (Ademiluyi et al., 2019).

The industry is concentrated in the state capital, Minna, where most of the furniture workshops are located, although there are smaller furniture workshops in other towns and villages across the state. These workshops typically employ a small number of workers, with some being family-owned and operated.

The furniture industry in Niger state faces a number of challenges, including a lack of access to modern equipment and technology, limited access to finance, and a shortage of skilled labor (Aghimien and Oseghale, 2014). These challenges have made it difficult for furniture producers in the state to compete with larger manufacturers in other parts of the country.

However, the industry also presents significant opportunities for growth and development. With the right support and investment, furniture producers in Niger state could improve their productivity, quality, and competitiveness, leading to increased employment and economic growth (Ademiluyi et al., 2019).

In recent years, there has been a growing interest in the potential of the furniture industry in Niger state, with the state government and private sector actors working to promote the

industry and attract investment. Initiatives such as training programs for furniture craftsmen, provision of equipment and finance, and the establishment of furniture markets and exhibitions have helped to support the growth of the industry (Okoli et al., 2018).

Overall, the furniture industry in Niger state has significant potential to contribute to the state's economy, but more support and investment is needed to help furniture producers overcome the challenges they face and take advantage of the opportunities presented by the industry.

Furniture craftsmen are skilled artisans who specialize in the design, production, and installation of wooden furniture. They play an important role in the economy of Niger state, providing employment opportunities and contributing to the growth of the state's GDP. The furniture industry in Niger state is made up of small and medium-sized enterprises (SMEs) that specialize in the production of wooden furniture such as chairs, tables, beds, and cabinets (Ademiluyi et al., 2019).

Furniture craftsmen in Niger state typically work in small workshops and employ a small number of workers. They use traditional woodworking tools and techniques to create a range of furniture products that meet the needs and preferences of their clients. These products are often customized to fit specific client requirements, with furniture craftsmen taking into consideration the client's taste, budget, and space requirements (Aghimien and Oseghale, 2014).

The skills and expertise of furniture craftsmen in Niger state are highly valued by clients, who often seek out their services for their craftsmanship, attention to detail, and ability to create unique designs. In addition to meeting the demands of individual clients, furniture craftsmen in Niger state also supply furniture to schools, hospitals, hotels, and other commercial establishments (Okoli et al., 2018).

However, furniture craftsmen in Niger state face a number of challenges that limit their productivity, quality, and competitiveness. These challenges include a lack of access to

modern equipment and technology, limited access to finance, and a shortage of skilled labor. Most furniture craftsmen in the state still rely on traditional hand tools and equipment, which limits their capacity to produce large quantities of furniture and to compete with larger manufacturers in other parts of the country (Aghimien and Oseghale, 2014).

To address these challenges, a number of initiatives have been launched to support the development of furniture craftsmen in Niger state. These initiatives include training programs to improve the skills of craftsmen, provision of equipment and finance to improve productivity, and the establishment of cooperatives and networks to facilitate collaboration and knowledge sharing among craftsmen (Ademiluyi et al., 2019).

For instance, the state government of Niger has established a Furniture Market in Minna, the state capital, to provide a platform for furniture craftsmen to showcase and sell their products. The market also serves as a hub for training, capacity building, and networking among furniture craftsmen in the state (Okoli et al., 2018).

Overall, furniture craftsmen in Niger state play an important role in the state's economy, and with the right support and investment, they have the potential to improve their productivity, quality, and competitiveness. This will lead to increased employment and economic growth in the state (Aghimien and Oseghale, 2014).

Furniture craftsmen in Niger state also employ quality assurance measures to ensure the consistency and reliability of their products. This includes the use of standard operating procedures (SOPs) for each stage of the production process, as well as the use of quality metrics to measure and monitor product quality. By establishing and adhering to these quality assurance measures, furniture craftsmen can ensure that their products meet the necessary quality standards and provide consistent performance to customers (Olawale et. al, 2020).

## **Synthesis**

From the information gathered, the proponents came up with an idea of proposing a management system that is relevant to the needs of the establishment, highly efficient to meet their needs and most of all simple, easy to use system. Based on observation and interview, proponents have found many problems such as time consuming listing the customer's information to the log book or receipts that errors occurred most of the time. The System is easy-to-use management software that can manage your furniture shop. Easy to use, track customers and avoid double delivery.

Overall, the furniture industry in Niger state has significant potential to contribute to the state's economy, but more support and investment is needed to help furniture producers overcome the challenges they face and take advantage of the opportunities presented by the industry

## **TECHNICAL BACKGROUND**

### **Overview of Current Technologies to be used in the System**

In developing and implementing a system, it is important to leverage current technologies to ensure efficiency and effectiveness. The proponents used both hardware and software for the proposed web-based system, whereas hardware such as the laptop serves as the primary development platform that enables the proponents to access essential software tools. Software to be used include Bootstrap, for a front-end framework to create responsive and visually appealing user interfaces. Visual Studio Code, serves as the versatile code editor for software development, enabling efficient coding and collaboration. XAMPP, an open-source web server solution, which facilitates the development and testing of the system locally. MySQL for storing, managing, and retrieving data. Google Chrome, a widely used web browser, essential for testing and optimizing the system's compatibility and performance. Additionally, the draw.io for creating visual representations and diagrams. The proponents will also use Microsoft Presentation for visual presentation and Microsoft Word for text documentation

### **Calendar of Activities**

## Gantt Chart of Activities

The Gantt chart presents the summary of activities. Listed are the activities and opposite them are their duration or periods of execution.

MONTH																																	
ACTIVITY	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV																							
Course Orientation																																	
Formation of Groups																																	
Selection of topics																																	
Selection of Project Adviser																																	
Creating Proposed Title																																	
Data Gathering																																	
Weekly Consultation																																	
Chapter 1: Introduction																																	
Chapter 2: RRL																																	
Chapter III: Technical Background																																	
Creation of DFD																																	
Creation of CFD																																	





## Resources

- **Hardware (for what?)**
  - Laptop (Minimum Requirements)
    - Processor: At least 7<sup>th</sup> Gen Intel Core i5
    - System type: 64-bit operating system, x64-based processor
    - Intel HD Graphics at least 5500
    - RAM: At least 8GB
    - Storage: At least 512 GB, SSD
    - OS: Windows 10
- **Software (for what?)**
  - Bootstrap - for a front-end framework, will be utilized for responsive web design, ensuring a visually appealing user interface along with CSS and JavaScript.
  - Visual Studio Code - a popular code editor, will be used for software development, for coding, debugging, and collaboration.
  - XAMPP - an open-source web server solution, will facilitate the development and testing of the system locally.
  - Google Chrome - a widely used web browser, will be essential for testing and optimizing the system's compatibility and performance.
  - MySQL - a popular open-source relational database management system (RDBMS) that is widely used for storing, managing, and retrieving data.
  - Draw.io - for creating visual representations and diagrams for system

architecture and design planning.

- PHP – used in creating customized content and creating logins and sign up.
- Microsoft PowerPoint Presentation - used for creating visual presentation.
- Microsoft Word - used to type, edit, and save text documentation.

## METHODOLOGY

(With Diagram of chosen Model)  
Waterfall Model?

The studies and research applied by the proponents should incorporate the needs and specifications the system has to accomplish. In designing the proposed system, it has to consider the visual appearance of its each interface with regards to the users' view, the number of user, the programming language to be used and so on. Prototyping method of research was used for this study.

It is an excellent way for the development team to confirm understanding of the requirements and ensure that the proposed solution is consistent with business expectations.

This covers the first phase in the development of the proposed system, which is the system planning. In this phase researchers begin with a formal request from the association that asks for an interview as ground work for the proposed system. The purpose of this phase is to perform preliminary investigation to identify the nature and scope of the problem. The preliminary investigation is a critical step where the outcome will affect the entire development process of the system.

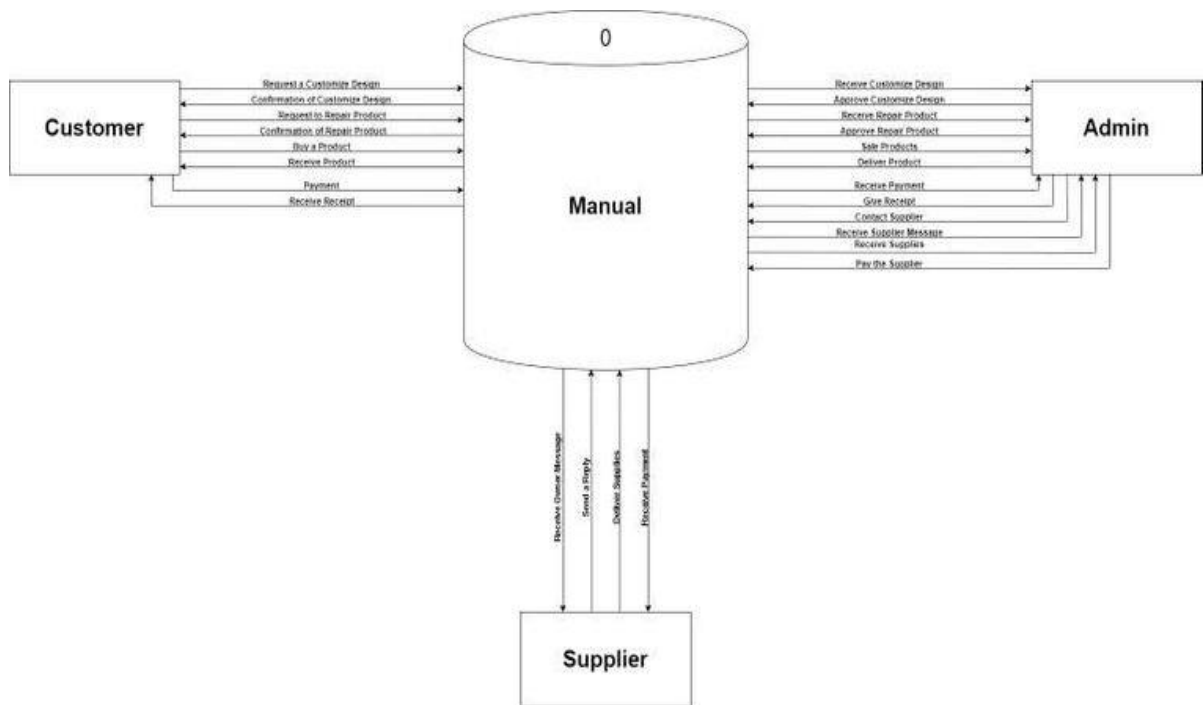
The proponents interviewed the key people of the association, took down notes and gathered all the data needed for the study. The information gathered gave the proponents a deeper understanding of the current manual system of the association. From these, the proponents were able to conceptualize a plan on how the current system could be improved.

The next phase is the system analysis phase. This is where the results from the data gathered are interpreted and analyzed in order to incorporate it to the proposed system. In this phase a logical model was built for the new system. It used the requirement modeling where the

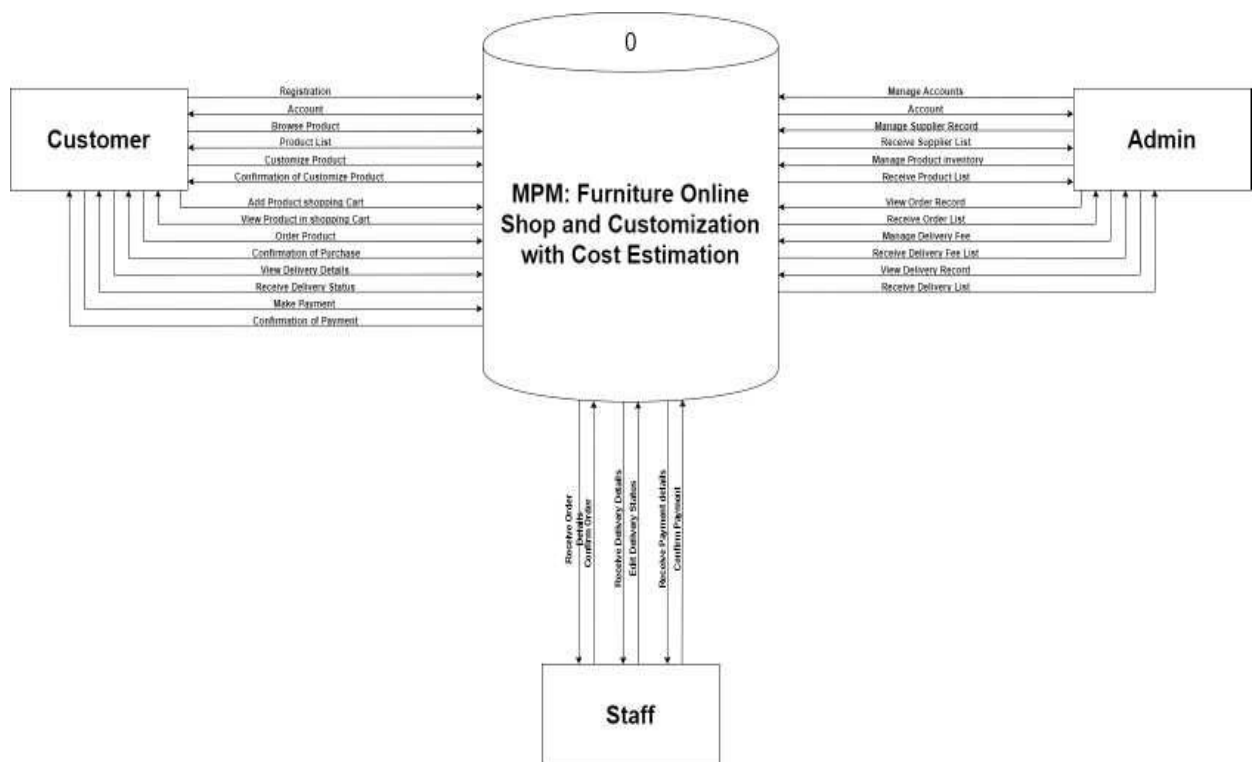
researchers perused the manual inventory system and document what the new system hopes to do.

The next stage was the system design phase where the results and analysis of the data gathered were used. Here an outline that will satisfy all documented requirements for the system was created. In this stage, system designers used the interface and identified all the necessary outputs, inputs and processes. In addition, system designers created the internal and external controls, including computer based and manual features to guarantee that the system will be accurate, manageable, and secure.

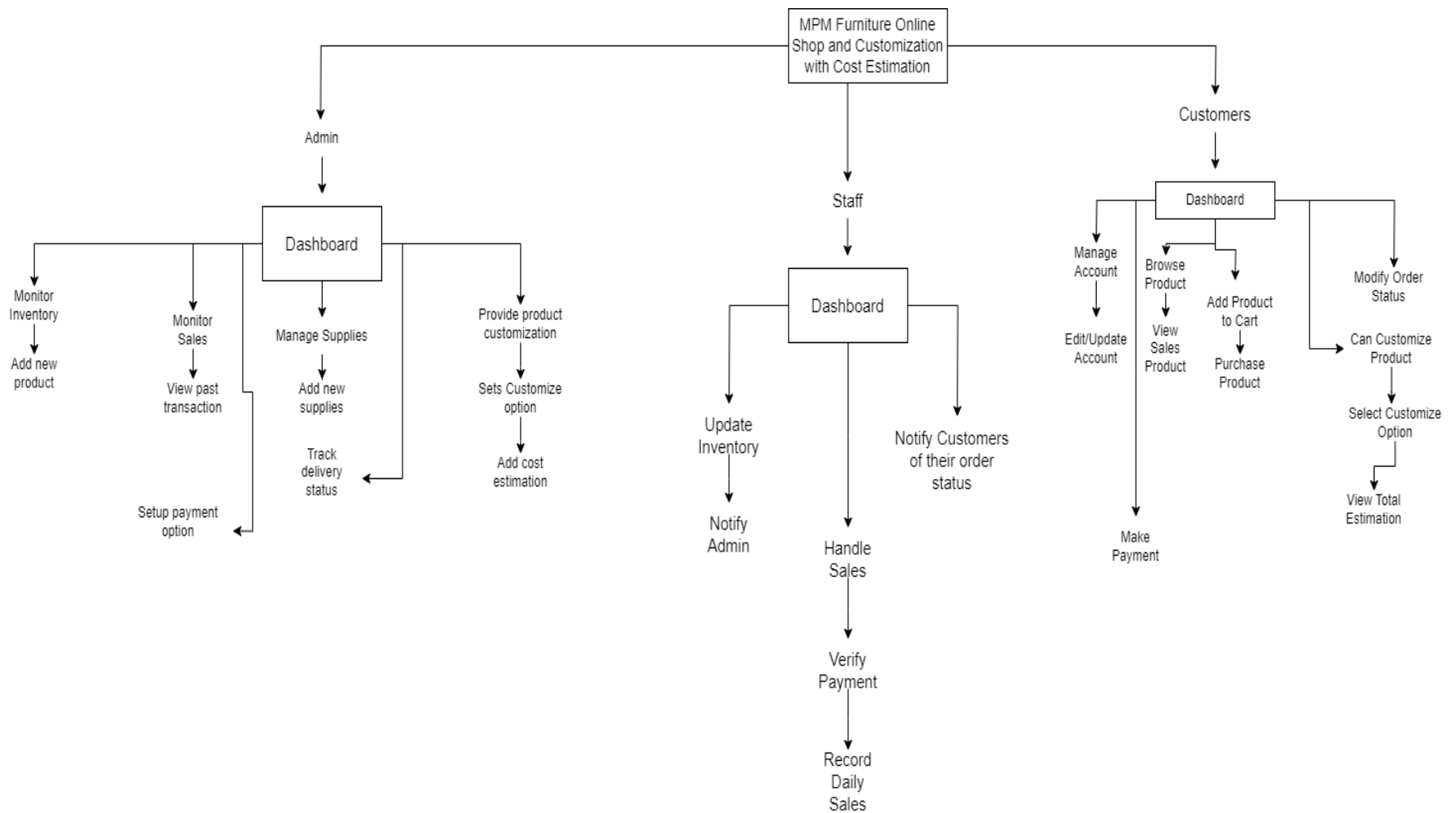
The system implementation phase follows where construction of the new system is done. This is where the program is written, tested documented and installed. The objective of the systems implementation is to deliver a completely functional and documented management system. This is followed by the last phase which is system operation, support and security; a phase where the system is maintained, enhanced and protected. Security controls and safeguards for the system from both internal and external threats are done.



**Context Flow Diagram (Manual)**



**Context Flow Diagram (System)**



**System HIPO Chart**

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