CHAPTER I

THE PROBLEM AND ITS BACKGROUND

This chapter presents the project context, objectives, the scope and limitations of the project, significance of the project, and operational definition of terms.

1.1 Project Context

8JJ's Trading Incorporation, located at 625 Magallanes Street in Intramuros, Manila, is a well-established distributor of top consumer brands like Coca-Cola, San Miguel Beer, and Magnolia products. Founded and owned by Mr. Jose Caranto Jr., the company caters to small and mid-sized businesses, including retailers, restaurants, and outlets within Intramuros and its nearby areas. Their focus is to ensure these businesses are consistently supplied with essential products, especially those in bottled glass and plastic containers.

The process starts when a customer places an order, either by phone or in person. Orders are made on a per-case basis, with a minimum requirement of one case, and all payments are cash-only. The cashier records the order manually on an official receipt, processes the payment for walk-in customers, and then hands the receipt to the warehouse checker. The warehouse checker verifies the availability of the products ordered. For pick-up orders, the warehouse checker hands the products to the customer, completing the order. For deliveries, the warehouse checker hands the ordered products, along with the official receipt, to the delivery person. Once the delivery is completed and payment for phone orders is received, the order is considered finished. All items released are manually recorded by the warehouse checker in the product masterlist. Regular customers outside Intramuros have scheduled deliveries from Monday to Saturday. The company serves up to 50 customers or outlets daily.

Every Saturday, the warehouse checker conducts an inventory count, manually tallying the number of pallets and cases, and compares the results with the product masterlist. The company then places orders with suppliers based on the inventory. If any products have issues, such as misprints, improperly filled bottles, or damage, the company requests replacements from the suppliers once the required quantity is confirmed.

The current operations face several significant challenges that hinder efficiency and accuracy. First, manual order processing creates a high risk of errors, as cashiers must manually write receipts and process payments, especially during busy periods. This not only slows down transactions but also increases the likelihood of mistakes in order details. Similarly, inventory management is cumbersome and prone to human error due to its reliance on a manual system. Without a real-time inventory system, product availability is only confirmed during order processing or through weekly manual checks, often leading to discrepancies. Another issue arises with supplier products, as infrequent inspections upon receipt mean defects such as misprints,

damaged goods, or improperly filled products are often discovered only when customers return them. These problems are recorded manually, making tracking and resolution difficult. Additionally, delays in order fulfillment occur because coordination between the warehouse checker and the delivery team is inefficient, resulting in longer customer wait times for deliveries. Finally, the lack of a centralized system exacerbates these issues, as the entire process depends on manual tracking and paper receipts, making it challenging to monitor order statuses and inventory in real time. Together, these challenges highlight the need for streamlined processes and modernized systems to improve operational efficiency.

To address the operational challenges, several solutions can be implemented to streamline processes and improve efficiency. Transitioning to an automated order processing system would reduce errors and speed up transactions by allowing cashiers to input orders directly into a computerized system, which would also generate receipts automatically. Implementing a real-time inventory management system would eliminate discrepancies caused by manual checks, ensuring accurate tracking of product availability at all times. Improving coordination between the warehouse checker and delivery team through a centralized platform would ensure real-time updates on order statuses, reducing delivery delays and customer wait times. Finally, shifting from manual tracking and paper receipts to a computerized system that integrates order processing, inventory management, and customer tracking would enhance transparency, accuracy, and overall efficiency. These solutions would help 8JJ's Trading Incorporation reduce errors, improve service quality, and boost customer satisfaction.

1.2 Objectives of the Study

General Objective
The general objective of the study is to design and develop a **Digital Order and Inventory Management System for 8jj's Trading Incorporation** to enhance the operational efficiency and accuracy of the company by implementing a centralized, automated system for order processing, inventory management, and supplier product tracking, thereby reducing errors, streamlining workflows, and improving customer satisfaction.

Specific Objectives
Specifically, the study aims to achieve the following:

- **Automate Order Processing:**
  To develop a digital order processing system that reduces manual errors, generates printed receipts, and improves the accuracy of customer transactions.

- **Enhance Inventory Management:**
  To integrate a real-time inventory management system that provides accurate, up-to-date stock information, reducing discrepancies caused by manual inventory checks.

- **Optimize Order Fulfillment:**
  To streamline coordination between the warehouse and delivery team by introducing a centralized platform that tracks real-time order statuses, reducing delivery delays, and

enhancing customer satisfaction.

- **Reduce Manual Paperwork:**
  To transition from paper-based order tracking and manual receipts to a web-based system, enabling better data management, faster access to information, and improved overall operational transparency.

- **Enhance Customer Service Efficiency:**
  To minimize customer wait times by improving order accuracy and ensuring timely deliveries through a more efficient, automated system.

1.3 Scope and Limitations of the Study

Scope
The key stakeholders involved in the system are:

- **Cashier**:

  Processes customer orders and payment.

  View inventory status and place orders to suppliers.

- **Warehouse Checker**:

  Updates the system upon delivery of products from the supplier.

  Updates the system when orders are fulfilled.
  Records defective products identified during the fulfillment process and product returns.
  Updates the system after the manual inventory.

- **Delivery Team**:

  Accesses order details and delivery schedules.
  Updates the order status (e.g., "out for delivery," "delivered") in real time.
  Records payments for phone orders directly into the system upon delivery to be confirmed by the cashier.

- **Management**:

  Monitors real-time inventory levels, sales, and delivery status.
  Generates reports on sales, defective products, and inventory trends.
  Uses analytics for decision-making regarding restocking and supplier performance.
  Oversees system security and user access controls.

The planned modules of the system include:

- **Order Management Module**:

  Allows the cashier to process customer orders and tracks their balance status.
  Automatically generates official receipts.
  Displays real-time order status to the warehouse and delivery teams.

- **Inventory Management Module**:

  Provides real-time inventory status, stock threshold, and out-of-stock items.
  Tracks stock movements.
  Automates weekly inventory reconciliation.

- **Delivery Management Module**:

  Allows the warehouse checker to record defective products upon identification.
  Generates reports for defective products, aiding in supplier claims.

- **Reporting and Analytics Module**:

  Generates sales, inventory, and delivery reports.
  Tracks defective product records and trends.
  Provides real-time insights through visual dashboards.
  Includes exportable reports for management use.

- **User Management and Access Control Module:**

  Defines user roles and permissions (cashier, warehouse checker, delivery team, management).
  Ensures data security by restricting access to sensitive information.
  Allows management to create, update, or deactivate user accounts.

Limitations

The process for handling supplier products involves determining defective items upon receipt, which is challenging since products are counted by pallet rather than individually. Additionally, all interactions with suppliers are conducted manually, and they are not integrated into the system. On the customer side, payments are strictly made on a cash basis, meaning that all transactions require immediate payment in cash.

1.4 Significance of the Study

The development of the **Digital Order and Inventory Management System** will significantly benefit the following entities:

- **8jj's Trading Incorporation Management**: The management team will benefit from real-time analytics and reports generated by the system, which will aid in making informed decisions about inventory restocking, product demand forecasting, and sales trends.

- **Cashier**: Cashier will experience faster and more accurate order processing through the digital receipt system, improving transaction times and reducing the likelihood of errors during peak hours.

- **Warehouse Checker**: Warehouse checker will have access to real-time inventory data, which will streamline the process of verifying product availability and reduce human errors in inventory tracking.

- **Delivery Team**: The delivery team will benefit from clear and up-to-date delivery schedules and optimized loading instructions, allowing them to complete deliveries faster and more efficiently while ensuring products are not damaged.

- **Customers**: Customers will benefit from faster order fulfillment and more accurate deliveries, improving overall satisfaction with the company's services.

- **Researchers**: Researchers can use the results of this study as a reference for similar projects that involve digital order and inventory management systems, contributing to the growing body of knowledge in business process automation and information systems development.

- **Future Researchers**: Future researchers may expand on this study by developing more advanced features such as supplier integration, customer relationship management (CRM) modules, or mobile app extensions. They can also use this study as a foundation for further innovation in inventory and distribution system technologies.

1.5 Operational Definition of Terms

Upon implementation, the following terms are clearly defined both conceptually and operationally to facilitate better understanding:

- **Threshold**: Refers to the minimum quantity of products in the inventory at which point they are considered to be at a low level, necessitating replenishment. This is commonly referred to as "safety stocks," and the system will automatically alert management when stock reaches this level. The threshold is set at **5,000 cases** per product.
- **Digital Receipt**: An electronic version of a receipt that is generated by the system after a customer order is processed. It includes all relevant order details and serves as proof of purchase. It will replace the traditional paper receipt in the new system.
- **Supplier:** A business entity that provides the products distributed by 8JJ's Trading Incorporation. Supplier records such as delivered quantities, defective items, and restock dates will be manually entered into the system.
- **Customer:** Refers to individuals or businesses that place orders with 8JJ's Trading Incorporation. Customer transactions, order history, and payment status will be tracked in the system.
- **Product:** Any item being sold or distributed by the company, including Coca-Cola, San Miguel Beer, and Magnolia products. Products will be identified in the system with specific item names, stock quantities, and threshold values.
- **Defective Logo or print:** Refers to products with misprinted labels or branding issues that are identified during warehouse inspection or delivery. These are recorded in the system and reported for supplier replacement claims.
- **Bottle Contents:** Refers to issues found inside the bottle, such as underfilling, overfilling, or foreign objects. These are marked as defective in the system and excluded from inventory count.
- **Broken Item:** Any product that has been damaged physically during delivery, handling, or stocking. These are recorded in the system and not included in available stock.
- **Order Status:** Indicates the current state of a customer's order. Statuses include terms like "pending," "processing," "out for delivery," and "delivered," which are updated in real time within the system.
- **User Role:** The designation given to each system user based on their job function, such as cashier, warehouse checker, delivery team, or management. Each role has specific access and functions within the system.
- **User Permission:** The specific actions a user is allowed to perform in the system, based on their assigned role. This includes permissions like viewing, editing, or generating reports.
- **Exportable Reports:** Reports generated by the system that can be downloaded in digital formats such as Excel or PDF. These reports include inventory summaries, sales data, defective item logs, and delivery status updates for management use.