

INFORMATION SYSTEM DEVELOPMENT PLAN FOR TASTE TEA TREATS

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ABSTRACT

Inventory management is a challenging problem area in all supply management. Every small company or small business needs inventory to meet customer demand. As a result, inventory management's task is to avoid overstocks, lack of stocks, income loss, and lack of infrastructure, and to find the number of inventories that will meet demand. This article presents a case study on inventory management for a small firm called "Taste Tea Treat."

The relationship between inventory management and business success was assessed using inventory days. Based on the interview days, researchers discovered that the company Taste Tea Treat has a few inventory issues, including unorganized arranging, a lack of infrastructure, a lack of income, and no accurate records.

Keywords: Inventory management, business, problems, demanding, relationship

INTRODUCTION

1.1 Background of the Company

The company began in 2020 when Mr. Buen chose to advertise it, yet it remains a pandemic online business. The company is TASTE TEA TREATS, which provides rice, milk tea, pizza, and barbecues for delivery, which depend on the location of the consumer. In the beginning, it wasn't simple to market because there was only time for an online presence but it was inspired by the love of the family to run the business correctly and responsibly. It's a hobby every day. And at Purok 7, Brgy, he chose to rent a tiny tea house. In front of the Pedo Davao Del Norte Hospital Ising, Carmen, Davao De Oro. 2020 October, the grand opening of Taste Tea Treats was celebrated in public. It employs 6 people that help and deliver the order of consumers. Automated online the staff in snacks of tea will prepare to provide food with the ordered food manually and depend on the location of the client for free delivery. For the customers the company is fair. It is a first-coming treat for the client and they respect the client completely.

1.2 Current routines and business processes

1.2.1 CURRENT ROUTINES

The company has several daily routines such as sales, cleaning, food and ingredients sanitation, and the supplier purchases of stock if food inventories are gone. They are always clean to guarantee a clean, clean and

fresh area and food product. The shift of employees runs from 7 a.m. to 5 p.m. It is open till 7 p.m. in the delivery period.

Table 1. Event Table of Taste Tea Treats

Task	Start time	End time	Duration Time
Cleaning and Preparing	8:00 AM	8:30 AM	30 minutes
Working	8:30 AM	11:00 AM	2hrs and 30 minutes
Lunch break	11:00 AM	11:30 AM	30 minutes
Resume Time	11:30 AM	7:00 PM	7hrs and 30 minutes

1.2.2 Business Process

The taste tea treat business is open from 8 AM to 7 PM and it is located in Carmen Davao del Norte nearby hospital owner by Mr. Dwight Mari Ylanan Buen. The business is online and not online processing if the customers are want to order through an online automatic the employee in the taste tea treat are going to prepare to deliver the food with manual receipt of the ordered food and with free delivery it depends on the location of the customer. The business is fair for the customers it is a first come first serve treat for the customer and they fully respect the customer.

1.3 Problem Found

- **Inventory.** The problem that most attracted our attention during our interview with the owner was their manual inventory method.
- **Lack of IT infrastructure.** During our interview with the owner, we observed that they were not looking for IT infrastructure because the owner did it for their business.
- **Lack of Stocks.** According to our interview, it is common for their transactions to run out of merchandise because their company has a large number of customers.
- **Lack of Income.** Based on our interview owner said that the loss of income seldom because of the pandemic.
- **Lack of Capital.** We observed that during an interview the owner said sometimes they are out of capital since their business is loss of income.

1.4 Goals and Objectives

1.4.1 General Objectives

The researcher aim:

Propose an IT infrastructure for an efficient inventory process, a Transaction Processing System (TPS), and a Decision Support System (DSS) to help with the inventory process, increased sales efficiency, and company management.

1.4.1 Specific Objectives

The specific objection to this study is to improve the business process.

The researcher aim to:

- To provide the business owner with accurate and well-organized data about their inventory with the help of IT infrastructure and Transaction Processing System.
- To provide information of their stock and Income with the use of IT infrastructure and TPS.
- To provide faster service for the customer through the help of IT infrastructure and the help of TPS.
- To provide proper decisions and solutions using Decision Support System.

1.5 Organization Structure



Figure 1: Organizational Structure of Taste Tea Treats

1.6 Stakeholders

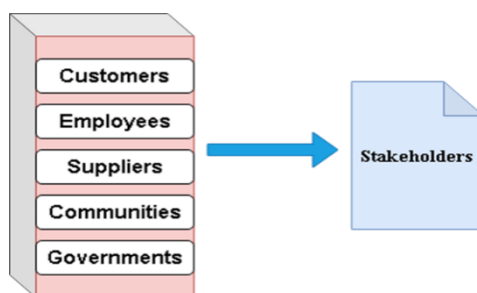


Figure 2: Stakeholders of Taste Tea Treats

PROPOSED INFORMATION SYSTEM

The researcher proposed a Transaction Processing System with the Decision Support System to achieve an efficient inventory, transaction, and decision-making process that helps monitor stocks and profit and stimulate business growth.

2.1 Review of Related Study

2.1.1 Related Literature

There are companies, including small and new companies, which struggle with their business transactions. Transactions are any activities that involve two or more people exchanging money. It is capable of capturing, retrieving, storing, and entering data that is relevant to business operations (Rumambi et al., 2018). There are two types of transactions, internal and external transactions. The internal transaction is the changes of the company's department to another that changes something in the accounting equation, whereas an external transaction is a transaction that involves two or more people that exchange their resources such as purchasing, sales, payments, etc. (Jonsson & Mattsson, 2016). A business transaction is considered broad and critical that needs attention to attain an efficient and effective transaction process. The transaction process includes an activity of sorting, calculating, storing, and retrieving, and summarizing. There some studies show the effectiveness of the TPS or transaction Processing System that can solve business transaction problems. And these issues may be solved with the help of a specific type of program and computer technologies transaction program that is in charge of managing data to keep it in a consistent condition (Ghodeswar & Vaidyanathan, 2008). A Transaction Processing System allows an organization to maintain its seamless operation in data handling through automated processing. It will aid in the speeding up of a lengthy procedure that takes too long for businesses to complete and will provide correct data and information promptly, boosting the company's growth (O'Brien, 2005). A transaction processing system is a collection of data that processes data transactions in a database system and keeps track of transaction programs. It is a tool used by businesses to increase the efficiency and productivity of their operations. This system is extremely important and difficult

to manage to keep data and information safe, and it needs constant monitoring. Understanding its functions and purchasing the necessary gear will help the firm increase its earnings.

2.1.2 Related System

Finding a suitable system for the business is a factor that has to consider. Since there's a lot of techniques that exist. The TPS (Transaction Processing System) along with DSS (Decision Support System) is used by most organizations. TPS is a business transaction information processing system that collects, modifies, and retrieves all transaction data. Transactions can be processed in two ways: in batches or in real-time. Transactions are aggregated over time and processed as a single unit, or batch, in a batch processing system. A business, for example, may update its sales data every day after it closes. Alternatively, a payroll system might analyze all time cards every two weeks to calculate employee wages and generate paychecks. In a batch system, there is a time delay between the actual occurrence and the processing of the transaction to update the organization's data, regardless of the time. In a real-time processing system, transactions are processed in real-time as they happen, with no need to wait for them to aggregate (Mahar, 2003). Online transaction processing or OLTP is another term for real-time processing. In this circumstance, the system's records always reflect the present situation. Airline ticket bookings are a good example of a real-time processing system. A decision support system gathers and analyses data, synthesizing it to produce comprehensive information reports. In this way, as an informational application, a DSS differs from an ordinary operations application, whose function is just to collect data (Voratas, 2018). According to some studies, TPS is extremely beneficial to the company in streamlining business processes, which is recognized by organizations as a form of necessity to survive and succeed in the competition of the business environment. TPS also helps the business in making customers satisfied with their service. The more TPS you provide, the better. The more customers you have, the more you'll be able to attract and keep them. However, to keep the organization moving forward, TPS should be supplemented with a Decision Support System. Many businesses believe that by using this approach, they would be able to save money. It is a specialist portion of a company that is incorporated into their day-to-day operations for this system to handle problems in complicated and unpredictable situations. This company's goal is to transform an optional system into a necessary survival tool.

2.2 Transaction Processing System

Data from the transactions for the organization are collected, recorded, processed, validated, modified, stored, and retrieved by TPS. With TPS, the firm's business routine can be improved, and the company's inventory can be managed more efficiently. The procedure has the potential to boost their revenues.

2.2.1 Functionality

- Provide manual receipt for the ordered product, online or not online order.
- Recorded the price of purchase food, number of products, and amount of the product.
- In every transaction, provide the owner with accurate data and information.
- Recorded the number of items sold and left and income every week.

2.2.2 System Architecture

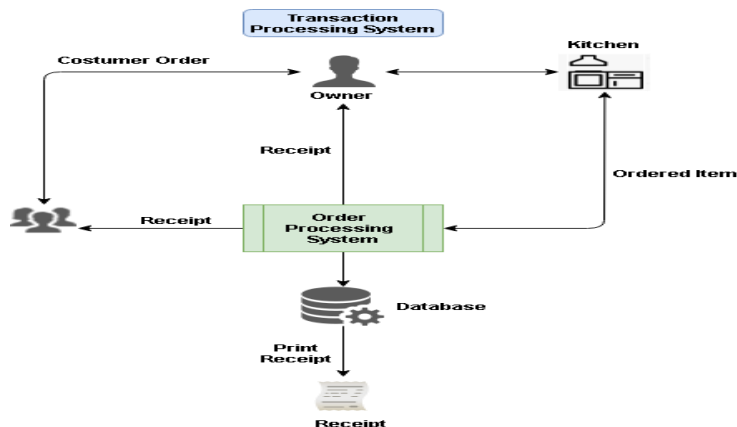


Figure 3: System Architecture of Taste Tea Treats

2.2.3 Economic Feasibility

Table 2. Economic Feasibility of Taste Tea Treats

Cost Description	Cost
Operational Cost	59,000
Maintenance Cost	33,600
Total	92,600

PROPOSED IT INFRASTRUCTURE

3.1 Proposed Computer Hardware

The researchers are suggesting Computer Hardware to the owner to improve their processing of the business.

Desktop Computer

A desktop computer is a type of personal device to use in selling online or other transactions.

Printer

A thermal receipt printer is a device that takes text and graphics output from a computer and prints it on paper usually the receipt of a product

Table 2: Proposed Computer Hardware

Computer Hardware	Specification	Unit Cost	Qty	Total Cost
Desktop computer	1 gigahertz (GHz) or faster 32-bit (x86) or 64-bit (x64) processor, 1 gigabyte (GB) RAM (32-bit) / 2 GB RAM (64-bit), 16 GB available disk space (32-bit) / 20 GB (64-bit), and DirectX 9 graphics processor with WDDM 1.0 or higher driver.	12,000Php	1	12,000Php
Thermal receipt printer	printer, printer receipt,	1,996Php	1	1,996Php
Overall Price				Php13,996

3.2 Proposed Operating System Platform

The Researcher proposed an operating system that can store files, inter-application, have memory control, keep itself secured and connected with the other peripheral device. Windows menu has a feature that can help them to search files on their devices.

Microsoft Windows 10 Operating System

Microsoft Windows is a collection of proprietary graphical operating system families developed by Microsoft. Each family focuses on a different aspect of the computing industry.

Table 3. Proposed Operating System Platforms

OS Platform	Specification	Unit Cost	Qty	Total Cost
Microsoft Windows	Windows 10 Home 64-Bit Software, New Version 1909	3,500Php	1	3,500Php
	Overall OS Platform Cost			3,500Php

3.3 Proposed Enterprise Software Application

To conduct a variety of business duties to increase the company's productivity.

Point of Sale System

The Point of Sales System (POS) allows to generate sales, send and track ordered purchases as well as vendor management. It also gives the owner information and reports about their sales/inventory and data statistics.

Sales and Inventory Management System

Sales and Inventory Management System enables generation, sending, and receiving both buying orders and managing suppliers. Sales/inventory data and thorough analytics also help store owners to manage reports and inventory.

Table 4. Proposed Enterprise Software Application

Enterprise Software Application	Specification	Unit Cost	Qty	Total Cost
Point of Sale System	Enable to manage inventory, pricing, payments and enable to track attendance of the employees	10,500 Php	1	10,500 Php
Sales and Inventory Management System	Help the business to make an effective decision making for the supplier, purchasing product, and to the customer.	10,500 Php	1	10,500 Php
Overall Enterprise Software Application Price		Php 21,000		

3.4 Proposed Data Management

The researcher proposed this type of data management to obtain, validate, store, secure, and process essential data to guarantee that it is accessible, reliable, and timeless for its users.

Table 5. Proposed Data Management

Data Management	Specification	Unit Cost	Qty	Total Cost
Cloud Database	XAMPP/ phpMyAdmin		1	
Microsoft Office	<ul style="list-style-type: none"> • Excel • Word • PowerPoint 	6,000 Php	1	6,000 Php
Overall Data Management Cost		6,000 Php		

3.5 Proposed Network and Telecommunication

The researchers observe that the company is small space, researchers are going to propose a Personal Area Network no adjustment of space and no extra cost.

Personal Area Network

Within 10 meters to 30 feet, a personal area network (PAN) allows several devices or other equipment to be connected under one user's surroundings. These connections can be made both wired and wirelessly. With a few computer devices, telephones, video game consoles, electrical gadgets, laptops, PDAs, printers, smartphones, and other wearable computing devices, a PAN network may be established.

Table 6. Proposed Network & Telecommunication

NETWORK AND TELECOMMUNICATION	SPECIFICATION	UNIT COST	QTY	TOTAL COST
Personal Area Network	Transmitting information among gadgets such as PCs, cell phones, tablets, and other electronic devices computerized aids for individuals.	7,500 Php	1	7,500 Php
UTP Cable	10M Gigabit Cat6 Cat6E UTP Cable Patch Cord Patch Cable with RJ45 CAT6E 10M High Quality - Orange Patch Cord Cat6	120 Php	1	120 Php
Overall Price				Php13,996

3.6 Internet Platform

It gives a lot of benefits for the consumers and producers to easily sell and buy the merchandise and also allowing trades online, this is called electronic trade

E-commerce

Online business or otherwise called online or electronic commerce or web, permits the customer to order online and to pay online bills. It allows clients advantages to paying the bills conveniently. It may also, however, relate to any form of corporate transaction on the internet.

Table 7. Proposed Internet Platforms

Internet Platforms	Specification	Unit Cost	Qty	Total Cost
E-commerce	Customers order a product allows online.	Free	1	Free
Overall Price		Free		

3.7 IT Manpower

The researcher proposed an IT professional to help the owner managing their IT infrastructure and give the owner advice, suggestion, and recommendation or proposals for more efficient and productive company operations.

Table 8. Proposed IT Manpower

IT Manpower	Job Description	Proposed Salary
Computer Technician	To maintain and update the hardware, software, and network and also resolve the problem of a computer device.	Php 11,300 per month

3.8 Prototype

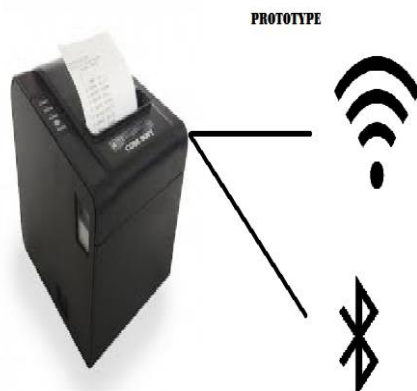


Figure 4: Prototype for Taste Tea Treat

Thermal receipt printer

Since the business wants to improve, this prototype can help consumers to supply printed receipts. This prototype will work if Bluetooth is on and WIFI is connected. This device will all print the price, name of the company, and quantity of the requested merchandise.

CONCLUSION AND RECOMMENDATION

4.1 Conclusion

The study concludes that Taste Tea Treat Meals Store needs a system that will aid their routines and boost company process efficiency based on the findings. To attain operational excellence and substantial revenues, IT infrastructure must be proposed. This helps the firm grow.

4.2 Recommendation

The study implies that acquiring an information system and IT infrastructure is necessary to optimize the business process and enhance inventory management. To succeed in the business, the researcher has advised a system of transaction processing and decision support.

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