

## INFORMATION SYSTEM DEVELOPMENT PLAN FOR MANOLETTE BAKESHOP

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### ABSTRACT

Most businesses have remained strong up until now using information systems. IS is essential for the existence of an organization. Market competitions continue to prosper, and information systems allow businesses to maintain and survive the competition or to provide them a competitive edge over opponents. The Sales and Inventory System has been designed to provide a system to handle the present issues inside this firm. No existing system means that sales and inventory transactions are complicated, and reporting is delayed. Keeping track of things inside and out is another challenge that should also be taken into account. Researchers suggested the Sales and Inventory System overcome the current problems. The user requirements are studied to determine the information demands of end-users, the organizational context, and the current system. The user wants to computerize consumer orders, order internally, item information, and manually buy orders. The objective of the research is to automate the business's sales and inventory procedures, conveniently monitor its inventory, simplify the process for inventory reports, and provide accurate inventory reports in due time. These goals will help maintain efficient operational flows while producing rapid and precise information for submission and compilation.

**Keywords:** Business process and routines, Sales and Inventory System, IT infrastructure, Transaction process, Transaction Processing System, Maintain and Survive.

### INTRODUCTION

The advantage of information systems is that they can give the users the data necessary to do any activity efficiently. Computer databases and paper records supply data, but IT provides the correct user-friendly data on the tasks per user[1]. Every day businesses undergo processes to fulfill their objective. The more efficient the firm is, the better its procedures. Certain businesses think their procedures to be a strategy for obtaining a competitive advantage. A procedure that meets its objective can distinguish a business. A cost-reduction technique can reduce or maintain more earnings for a corporation[2]. Significant changes have occurred in the setting in which businesses. Increased competitiveness, globalization, Internet impact, and international events impact organizations' performance and survival worldwide[3]. The internet has revolutionized how businesses are acquiring and serving clients and maintaining their relationships with providers. This changes the access, communication, shopping, and entertainment of people and the competition and operation of businesses. With its broad use and engagement with the internet, companies have evolved into Web-centric information systems. A web-centered information system connects all different information systems using web-based technology and interfaces within a company[4]. Innovative products and services are also provided online by organizations that use the internet. Users in businesses are seeking more effective and efficient information

systems employed by the organization. Therefore, businesses are required to invest extensively in deploying information systems to get value and advantage in this new environment and remain competitive[2].

An information system performs specialized services, including payroll, storage of personnel records, and the preparation and storage of corporate documents and credit card processing. The information system may arrange activities and operations when your organization runs a production line while preserving quality records. Many enterprises, such as graphic designers or publicity firms, manufacture their products or services using the information system[5] A Review of Computerized Payroll Systems. The information system can enhance the efficiency and productivity of employees in supporting activities. Monitoring and tracking employee actions are fundamental to information systems. This applies in particular to financial transactions where management must avoid fraud and robbery. The safety of the IT system is essential since managers rely on it to track consumer payments and invoices received from suppliers. The system enables only authorized personnel to connect and access the related services by imposing its control features[6].

### 1.1 Background of the Company

For thousands of years, baked products have been around. Early in the Roman Empire, baking was established. It was a very renowned craft, as Roma people liked baked products and often requested key events like parties and weddings. In 300 v. Chr. baking was established as a business and a decent job for Romans because of the renown of baking art[7]. Bakers started preparing bread in an oven at home, using mills to grind grain into meals. The desire for baked products remained, and in 168 BC in Rome, the first baker's guild was formed. The need for baked products fostered Europe-wide baking and spread to East Asia. Bakers at home began to bake and sell bread and other foodstuffs on the streets[8].

In 1993 Mr. Pedro L. Barrios founded Manolette Bakeshop. Then he got a short lesson on the basics of baking with the assistance of a bit of loan from his father, who resigned as a staff member of a rural bank. Pete has expanded the company in numerous cities, especially in the Southern Mindanao region, with his business skills, entrepreneurial abilities, and good economic outlook. By 2009, the company would develop to 200 branches, particularly in the Batangas area in the southern half of Luzon[9]. In the future, the company's emphasis will be on improving quality and innovative goods, improving business processes, the safety and better compensations of employees, profitability and sustainability for owned or franchised companies, and more participation in community service.

### 1.2 Current routines and business processes

A baker is an individual who produces various bread, pastries, and other baked products to combine the ingredients according to the recipe. After creating these items, they are sold to the client as food services. Before making the baked products, the baked goods are tested on the quality of the ingredients which are to be made of the baked products, but also on the essential utensils to prepare products and quantity of the ingredients. The baker combines the different ingredients in the mixers and properly mixes them all.

The bakery comprises the essential items, such as the delicious taste of the baked products, which are sold to customer to everyday consumers and offered with the consumers the highest quality items at competitive prices. The bakery additionally considers that it concentrates on customer satisfaction to gain its customers' confidence and preferences and, if necessary, deals with any adjustments to the goods and upgrades.

Table 1. Event Table of Manolette Bakeshop

times	TASK/ROUTINE
6:00 AM – 9:00 AM	* Staff is wiping the glass and cleaning the floor, and preparing the things needed.
9:00 AM – 11:00AM	* Operations start like catering to customers.
11:00 AM – 12:00 PM	*Starting wiping the surfaces of the glass, so it is not dirty to the customer's eye.
NOON – 1:00 PM	*Break time.
1:00 – PM – 5:00 PM	*Performing regular operations.
5:00 PM – 6:00 PM	*Computing the daily sales and reporting the ingredients used for baking.

### 1.3 Problems Found

#### - Lack of IT Infrastructure

The bakeshop does not invest in IT, we saw during the interview. It is necessary since it benefits them a lot and can attract more customers if they invest in IT and assist them with their processes.

#### - Transaction Process

Their transaction process is manual. Sometimes, they lose essential data about their business.

#### - Inventory

Manual inventory is being used for stock for their products in the bakeshop.

### 1.4 Goals and Objectives

#### 1.4.1 General Objectives

##### The Researcher's aim to:

Improve the business processes, Payroll, and helps for their stock inventory using the System we proposed.

#### 1.4.2 Specific Objectives

The specific objective of this study is to enhance the business process.

The researchers aim to:

- To give the manager correct data regarding their inventories and stock using the system we proposed.
- Helps the manager for the decision he make for better grow of the business.
- To make the transaction process better and help the bakery clerk to make it easy.
- To provide the best IT infrastructure fit in their business to manage and help grow the business and make a big profit.

### 1.5 Organizational Structure

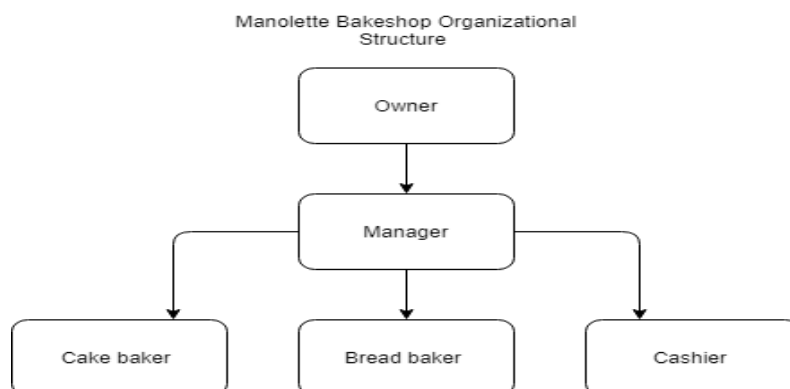


Figure 1: Organizational Structure of Manolette Bakeshop

### 1.6 Stakeholders

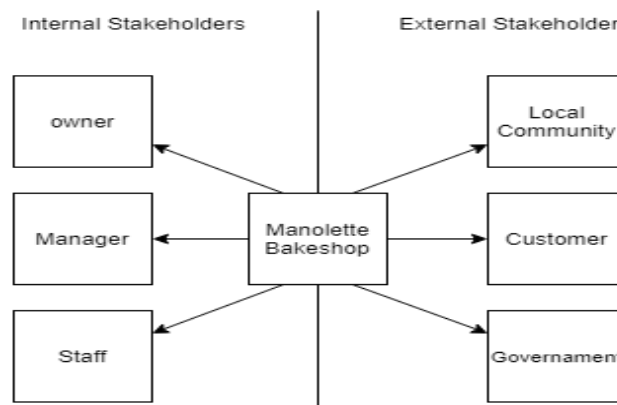


Figure 2: Stakeholders of Manolette Bakeshop

## **PROPOSED INFORMATION SYSTEM**

The researchers proposed a System to help perform a proficient transaction process, inventory process, and that will support the growth of the business.

### **2.1 Review of Related Study**

A computer-oriented system is a complex system. It's more precise, quicker and notably easier to work with. But some choose to cling to the method that requires no technology. This makes the program crucial for small and large enterprises and is intended to provide the most outstanding services. You are encouraged, since we know that it helps enhance the efficiency and productivity of the business, to change from the manual to the high-tech automated system. Even small and medium-sized enterprises have relied on the computerized inventory management system in today's economic climate. The promoter gains insight into the processing of files and reports generations via this study, as indicated in this study. The application was intended to produce reports, inventory records, sales invoices and service items.

#### **2.1.1 Related Literature**

In light of the seasonal food manufacturing cycles, fundamental ways of controlling stocks, which solve the current obstacles of bakery management, are vital to ensure food safety. The fact is that the bakery supply chain is crucial in transforming excess food in the future forms of reusability, hence improving sustainable food safety, as has been pointed out previously. However, a lack of capability to manage a stock monitoring system, including financial and infrastructural facilities, impacts bakery earnings and competitiveness, among other things. In the bakery supply chain, there are also inconsistent stock targets. This issue affects such complex supply chain operations as procuring facilities, buying raw ingredients, converting them into dough, baking them into bread and distributing them to end consumers. Therefore, choices on inventory policies are not made due to uncertainty. Bakers, for example, are not fully aware of the market's potential size. In anticipation of demand, they manufacture extra to secure more income.

On the other hand, suppliers are acting on conjecture, and future demand just in case surpasses projections and surpasses the goods. The suppliers mainly hold several brands and afterwards use a hawking approach to lower the number of goods on the shelf. This technique leads to an extensive inventory of storing expenses and dangers for health. Moreover, the predicted rivalry between products is neutralized by various brands' sales since demand from the famous brands, if unfulfilled, was replaced by unpopular, overwhelmed brands. Holding several brands at the same time leads to an unreasonable overhead allocation across the many bread brands. The result is illusory and has a negative influence on industry growth.

#### **2.1.2 RELATED SYSTEM**

The solution provides merchants with a toolkit containing retail shop administration, cash drawer control, payment processing, order management, customer profile access, accounting integrating software, and POS hardware integration, such as barcode scanners or receipt printer capabilities. Lightspeed offers a fully integrated eCommerce platform that allows clients to manage stocks, have a single customer view, and evaluate multichannel sales data in both stores and online stocks.

Multiple restaurant functions like stock sync are provided by the Retail POS system across all locations. The POS solution provides customers with inventory-management capabilities to generate, track, serial numbers and generate variants of goods, such as size, color, and material, utilizing a matrix system. Including profiles, history records, and insights of consumers, Lightspeed Retail delivers certain service options.

### **2.2 Lightspeed System**

Lightspeed has been chosen as the finest retail POS system because of the comprehensive range of features available to shops at a low price. Lightspeed provides a wide range of costing plans, subscription alternatives, and smart features for loyalty and stock management. The firm also facilitates online sales for brick-and-mortar enterprises, and it is a key element this day and perhaps the following years.

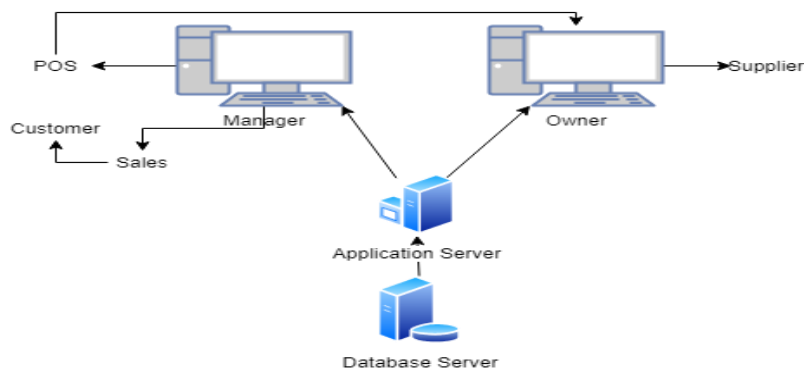
The retail software package of Lightspeed provides whatever a retail organization needs to function, including inventory, customer interactions, administration, and advanced reporting. You may also choose payment

processors, integrations, and approved means of payment. Lightspeed offers a comprehensive range of customer care solutions, including 24/7 telephone and email contact and free individual training.

### 2.2.1 Functionality

- Management of customer detail It was incredibly helpful to maintain client information and to track together their prior purchases and recommendations.
- Cloud-based function
- Management of the stock to see stock levels in stores and the stock invoices so that you could know when and the history behind it was sold.
- eCommerce and retail synchronization
- Total store sales the overview was amazing how much was sold and displayed the essential data and the information was collected to be relevant.
- Mutli-store organization
- Payment processing

### 2.2.2 System Architecture



**Figure 3:** System Architecture of Manolette Bakeshop

### 2.2.3 Economic Feasibility

Table 2. Economic Feasibility of Health at Hand SPA HHS

Cost Description	Cost (php)	Total Cost
BakeFAST Software	18,000	
Training Cost	4,000	
Customization of software	5,000	
Software Maintenance	3,000	
		<b><u>30,000</u></b>

## PROPOSED IT INFRASTRUCTURE

### 1.1. Proposed Computer Hardware

We are improving their Sales and inventory processes.

#### Desktop Computer

A desktop computer that can perform fast can helps for their inventory management and sales.

Table 2: Proposed Computer Hardware

Computer Hardware	Specs	Cost (php)	Qty	Total Cost (php)
Ryzen 5	Ryzen 5 3400G(CPU) GIGABYTE B450M(MOBO) Kingston Hyperx 16GB DDR4(RAM) 240 (SSD) 1TB (HDD) Gigabyte P550B 550WATT 80 Plus Bronze (PSU)	29,699	1	29,699
				<b><u>29,699</u></b>

### 3.2 Proposed Operating System Platforms

Researcher have proposed Microsoft Windows for the Operating System since, most people are already familiar with this. That OS have manifested itself over many generations of quality service especially on businesses.

#### Microsoft Windows 10 Operating System

We proposed this OS because of its fits any kind of organization. Since the BakeFAST system is a database system, its OS cloud-based applications and storage will be an absolute fit for the system. It has a lot more functionality than other windows, after all.

Table 3. Proposed Operating System

Operating System	Unit Cost (php)	QTY	Total Cost (php)
Microsoft Windows 10 Pro	14,999	1	14,999
			<u>14,999</u>

### 3.3 Proposed Enterprise Software Application

We recommend BakeFAST System because it's fit the bakery that the bakery needs and helps the growth of the business.

Table 5. BakeFAST Features

<ul style="list-style-type: none"> <li>● <b>Inventory Management</b></li> </ul>	- Inventory plays an important part in any food industry, particularly in the baked goods and cakes sector, and refers in this sense to all the materials and final baked products themselves. BakeFAST inventory management system to help manage costs, etc.
<ul style="list-style-type: none"> <li>● <b>Bakery sales report dashboard</b></li> </ul>	- Reports allow the user to view the daily processes of bakery business metrics, including customer reservation, sales performance.
<ul style="list-style-type: none"> <li>● <b>Online order entry through BakeFAST POS</b></li> </ul>	- Customers can order online, and the chef will notify.
<ul style="list-style-type: none"> <li>● <b>Billing and Payments</b></li> </ul>	- Render a faster, continuous POS experience for your customers and staff.
<ul style="list-style-type: none"> <li>● <b>Finance</b></li> </ul>	- Has a Customer contact management, Customer and sales management, Invoicing, Import customers, and Import sales order that helps the bakery's management to prospers more.

### 3.4 Proposed Network and Telecommunication

Since BakeFAST system is cloud-based, an internet connection is a must. That always needed, so it runs smoothly and manages the customer request easily.

Table 6. Proposed Telecommunication Platform

Network and Telecommunication	Specs	Unit Cost (php)	Qty	Total Cost (php)
PLDT Enterprise	25mbps (HomeFiber)	1,699	1	1,699
				<u>1,699</u>

### 3.5 Coffee Vendo & Juice Dispenser Machine

Table 8. Proposed Coffee Vendo & Juice Dispenser Machine

Machine	Unit Cost (php)	QTY	Total Cost (php)
Coffee Vendo	14,999	2	14,999
			<u>14,999</u>

### 3.6 IT Man Power

Table 9. Proposed IT Man Power

IT Personnel	Job Description	Salary
IT Support Technician	Primary contact for technological issues. Train or support end-users on software and hardware and helps the owners use the computer effectively and efficiently.	15,000/month

## CONCLUSION AND RECOMMENDATION

### 4.1 Conclusion

Studies suggest that Bakeshop Manolette needs an information system and technology to modernize its operation. They keep to the old manual approach and are nevertheless capable of managing their company somehow. However, the researchers saw the potential to boost their organization's performance with this recommended design plan and increase their profits.

### 4.2 Recommendation

It will overwhelm the organization, turning it into an automated one. But we advise you to be patient and prepared to accept the new atmosphere to improve your company. This is why the BakeFAST system is recommended since it may be user-friendly for a business such as Manolette Bakeshop, which moves from current methods to an automated one. This will aid the organization but also create a competitive edge and Operational excellence.

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