

# Information Systems Development Plan for Gagang Grocery Store

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## ABSTRACT

Due to its consumer and price-friendly products, there numerous resources available many at no cost to entrepreneurs. A daily information includes a non-stop activities of the store such as transaction of a large volume products, the customer requesting more discounts, and the price may not the same as what the shelves are displaying the employees play an essential role in the grocery store. This paper intended to improve transaction process, business process and routines by proposing Information Systems and sophisticated computer technologies. EASYCASH system is commonly used by companies worldwide in different functional areas especially for paying debts.

To construct a better relationship between customer, we the researcher consider that the EasyCash payment process to avoid going to the grocery for just to pay-off their debts, also their employee check their daily time record for their attendance.

**Keywords:** Business process and routines, EasyCash System, IT infrastructure, Transaction process, EasyCash Processing System.

## 1.INTRODUCTION

### 1.1 Background of the Company

Gagang Grocery Store was established on May 2002, and they celebrates their anniversary every 20<sup>th</sup> day of November. Located along the barangay gym in Purok1 Dalisay Village, Panabo City, Davao del Norte.

Hence, they named it into Gagang Grocery Store, Mr&MrsFacun is the owner of the business, they named it to Mrs. Facun's nickname and it was Gagang. They're just hiring people who are close to them as their relatives. The store is consumers friendly for its price is affordable, and its place is not intimidating.

On the other hand, Gagang Grocery Store offers a varieties products like

frozen goods, school supplies, and other essential goods which can be purchased at their store.

The business employs they used EasyCash process for those who have debt who cannot afford to their store. However, they allowed to use a credit card to pay in their store.

## **1.2 Current routines and business processes**

### **1.2.1 Current Routines**

The daily routine of the store are cleaning that will start in the morning (6:00am-7:00am) and before closing it (6:30pm-7:00pm). They also have a report regarding of the problem of the store. Every 3 days the employees have a rotation, so they will know their respectively task.

### **1.2.2 Business Process**

The business opens 9hrs since it is a grocery store. It is overseen by one of the owners of the store for it is a family business. When they got into the lane, the customers render their chosen products together with the payment. Usually, alcoholic drinks are in demand in that hour which is supported by the barangay captain. There are also available videoke in front of the grocery store, which makes the place more attractive and also lively. After drinking, the customers must leave the bottles in that area.

### **1.2.3 Existing technologies**

One way to create an immersive experience that will encourage consumers back in stores as the world reopens is to used technology because, After the shocks of the coronavirus on brick-and mortar retail, stores have to work harder than ever to compete with each other, and with consumers increase appetite for ecommerce. Generally speaking, most grocery store retailers have added technology at a conservative pace over the years. New solutions need to demonstrate quick payback through increased sales and profits, and/or reduced costs to the operation. Technologies designed to improve the customer's experience in the grocery store, such as faster checkout, or ways to provide additional information to the customer are sometimes difficult to justify when chains are focused on their bottom line. The impact of new system deployment, training, maintenance, and support can add to a retailer's reluctance to simply accept the next new technology. As technology has evolved over the years, most grocery stores retailers have switched their operations to the latest tools and techniques except using older systems. Few drawbacks of existing technologies are given below:

- Many systems either do not connect, or are connected in a cumbersome manner that requires manual processes.
- Information is difficult to retrieve, and new releases are resource-intensive to manage.

- Some software purchased through vendors lack consistency in capability, have overlapping scopes, and are rarely integrated in terms of function or data.
- Many older applications are based on outdated architecture and are inflexible, making it difficult to change processes and business rules, add new devices, and so on, without touching the source code. This can present a competitive disadvantage for retailers as new innovations are made available over time.

Furthermore, Grocery stores of Gagang must use technology in various ways: for experiential purposes, increase convenience for shoppers, to make them feel safer especially for paying their debts through online.

### **1.3Problems Found**

Customer. The owner sight that customers who are big and indebted, are currently struggling to pay because of the test they are facing now that is pandemic. There is a customer who asks for and extension days to repay the loan due to the difficulty of the household situation and because the daily income is only enough for the family's purchases and needs. there are also customers who would have paid but the store is too far away from their houses and due to the ban on face -to -face communication, the debts are even more unpaid, so the store will no longer lend because the profit has been greatly

reduced and the store is no longer known because the number of shoppers has gradually weakened due to the fact that the remaining stocks are no longer very important.

Lack of entrepreneurial technology. Based on the interview conducted, the owner of the store has a problem because their technology is so lacking that they will have a hard time developing their business, they do not have POS that can be used for inventory, billing, pricing and to make it easier for people to pay in debt or loans.

Increasing competition. Based from the owner said that with emergence of the grocery store chains or supermarkets in developed countries, it's becoming more difficult for grocery store owners to establish and survive in competitive environment. With low labor costs, material costs, and low currency values, these emerging grocery stores can easily undercut established supermarkets. With the availability of fast international shipping, established grocery stores are constantly challenged to compete.

Sales are lack of customer demand. The owner stressed that one of the problem in a business was sometimes the sales were become lack of customer demand due to pandemics and calamities happenings. Most grocery store manager prefer to manage products for customers according to their needs and expectations. It is the responsibility of the grocery store manager to understand what the customer expects and to deliver the results they

require. Otherwise, the manager can expect to lose business quickly as customers are quick to switch to other grocery stores.

### Goals and objectives

#### General objectives

As a leading retailer distributor, our commitment is to provide an easiest ways of processing for customers and producers needs and services in a cost-effective manner, enabling grocery stores retailers to excel in serving their customers.

The general objectives of this study is to provide an information system that would help the company solve their problem regarding some traditional processes that would smoothen their work.

#### Specific objective

In line with the general objective, the specific aim of this study are;

- To recommend an information system to make customers aware of ways for paying their debts and to make their purchases easier.
- To implement an information system for online selling of the products and earn the highest profits possible.
- To develop an information system that customers more interested in one-stop shopping.
- To propose an information system that the business owner must become updated of the products

where in needs of the shopper's time to time.

### 1.5 Organizational Structure

#### Organizational Structure

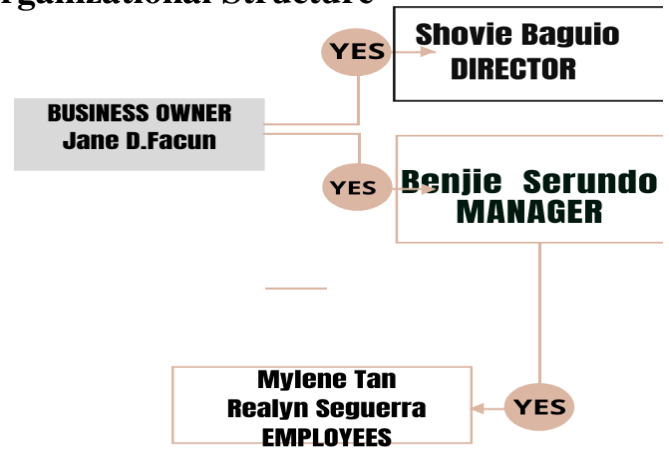


Figure 1, Organizational Structure of Gagang Grocery store

#### Stakeholders



Figure 2: Stakeholders of Gagang Grocery store

## **2.PROPOSED INFORMATION SYSTEM**

The researchers proposed a EasyCash system to attain an efficient that will stimulate the growth of the business. And allows to do banking transactions or payment transactions in just a few click.

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

#### **2.1.1 Related Literature**

**REVIEW OF RELATED LITERATURE** Individuals will select, purchase, and use the goods and services to meet their needs and wants (Vainikka, 2015) which starts, and ends with their satisfaction. In the modern world of marketing,customers will always have a room by choosing two different choices that persuaded them to buy or availthe product (Durmaz, 2014).

According to a survey by Gallup International, Philippines is third of thehappiest countries in the world. It resulted in 86% of the surveyed Filipinos telling that they are happy (Gallup International). A fact remains that Filipinos are still dependent on using cash and cheque mode of payments (Ching 2017).

Philippines is still striving to close the division of a technological gap among the Filipinos.These split the nation into two opposing positions, the connected and the unconnected (Estopace 2015).

The unconnected will remain in hunger for financial inclusion and heavily on technological inclusion. According to Bangko Sentral ng Pilipinas (BSP), access to financial services will empower the poor tomanage their finances and will reduce their vulnerability of their financial distress, poverty, and debts.BSP will prioritize financial inclusion in all sectors that will cater Filipinos by the year 2040 (Espanilla, 2017).

According to BSP Consumer Finance survey results, around 86% of Filipino households does not have abank account. BSP recognizes the opportunities bought by E-money platform or cashless transactionsystem. This includes e-wallet, credit/debit cards, cryptocurrencies and such other payment methods thatdo not use a physical cash. Beep Cards, a prepaid card for transporters, are part of the arrival of the system. It has created opportunities and improvements in the country's financial inclusion and unbanked segment (Euromonitor International, 2017).

The government is fully supporting the introduction ofcashless system. This leads the BSP that financial inclusion will able to provide inclusive growth andbecome their main agenda. BSP believes that financial inclusion will provide the public their evolvingneeds. Financial cards and payments continues to expand in all areas of the Philippines (EuromonitorInternational, 2017).

BSP is supporting the growing industry since they are pushing online interbank transactions and the two dominant telecommunication companies are investing in the mobile payment technology. A research conducted by the Financial Times that most Filipinos are switching in using credit and debit cards as their modes of payment. It shows that 39% are users of debit card, 34% credit card and 31% who used only cash. This proves that there is a growing demand with the cashless system mode of payment with this research conducted by the Financial Times. Most Filipinos use this kind of payment method to purchase in online shop, some for money transfer, pay their bills and shop at the stores (Asian Nikkei, 2017). The increase in people's internet use paved the way for the rise of online payments for purchasing. Even online banking application of the consumers made the services innovative. Online payment instruments are not just supplementing traditional cashless payment instruments, but are increasing in dominating them (Bundesbank, 2017). Consumer confidence and spending intentions of the Filipinos also scored high in one of the studies conducted by Nielsen Global. In their study, job optimism, spending intentions, and financial confidence rise to 88%, 61%, and 86%, respectively (Euromonitor International, 2018). When it comes to the buying behavior of Filipinos, they always turn into brands that can offer them convenience and satisfaction. It is not just

homes that they are fond of buying but is also turning into a new set of services that removes the burden of ownership, termed as "sharing economy" (Goldman Sachs Global Investment Research). They are more open to manifest wide patterns of social habits. Filipinos are also fond of interacting with social media. According to the Digital Global Overview, fifty-eight percent of the 100 million plus population of the Philippines has active social media accounts. Filipinos tend to spend at least 4.17 hours a day on social media.

Following the birth of social media users, the growth of Filipino smartphone users also projected to grow from 40 million today to 90 million in 2021. (Ericsson Mobility Report, 2016). Thus, PayMaya and Gcash, companies currently leading the e-payment solutions in the Philippines, is convincing consumers to shop online and use their services. Even the Philippine Long-Distance Telecom (PLDT) are projecting that 30 million Filipinos will use the cashless transaction system. Yet, in the study conducted by Deutsche Bundesbank, cash is the most commonly used method of payment. It accounts for a total share of 53% of all transactions. Assortment of socio-demographic characteristics differentiate the amount of cash brought by different people. This entails that as the amount of cash carried increases, the level of net household income rises. However, the cash share has declined by almost 5% points. High-earners do not prefer it much, especially for them having

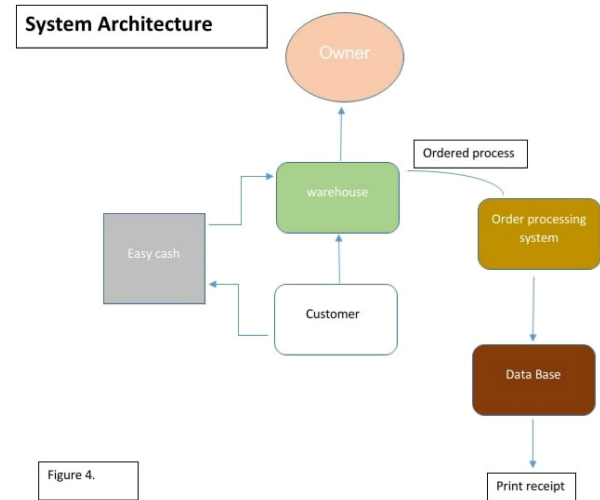
higher expenditures. Moreover, this drop is in line with the long-term trend in the market via cashless transactions (Bundesbank, 2017).

### 2.2.1 Functionality

- It can transfer money from one account to the other without going physically to the bank to withdraw or deposit the money to your account.

- It will automatically record the price, number of items, amount of the purchased product.
- Provide printed receipts for the customers.
- Fasten the tabulation and inventory process.
- Record the number of items sold and left and income (daily, monthly, and annually).
- Provide accurate data and formation in every transaction to the owner.

### 2.2.2 System Architecture



**Figure 3:** System Architecture of Gagang Grocery Store

## 3. PROPOSED IT INFRASTRUCTURE

### 3.1. Proposed Computer Hardware

We are improving both efficiency and speed working.

#### Desktop Computer

A desktop computer or a personal computer designed for regular use at a single location on or near a desk or table due to its size.

#### Printer

A barcode printer is a computer peripheral for printing barcode labels or tags that can be attached to, or printed directly on physical objects. Barcode printers are mostly used to label cartons before shipment, or to label retail items with UPCs or EANs.

**Table 2:** Proposed Computer Hardware

Computer Specification	Unit Cost	Qty	Total Hardware Cost
Desktop Computer	FX-6000 Series FX-6300 (3.50GHz) Windows 10 Professional 64-bit 16 GB HyperX Fury DDR4 1 TB HDD NVidia GeForce GTX 1050 4GB	1	Php 18,283
Printer	132hjum- k="	1	Php 4,227
Barcode Scanner	USB Portable 4.6 ounces Area Imager	1	Php 5,203
<b>Overall Price</b>			Php 27,713

### 3.2 Proposed Operating System Platform

Researchers plan an operating system that defines how a computer stores files, transfer between different application, control memory, keeps itself secure and connects with peripherals like printers and cameras. The Windows Start menu has helped generations of user search programs and files on their devices.

#### Microsoft Windows 10 Operating System

A gathering of a few graphical working framework families, which are all evolved, advertised, and sold by Microsoft. Every family takes into account a specific segment of the processing business.

### 3.3 Proposed Enterprise Software Application

To perform various business functions to boost the productivity of the company.

#### Point of Sale System

Point of sale system allows to generate, send, and receive purchase orders as well as manage vendors. It also allows store owners to manage reporting and inventory with sales/ inventory reports and detailed analytics.

#### Sales and Inventory Management System

Sales and Inventory Management System lets the user generate reports to help to take business decisions in purchasing, suppliers, customers and distribution. This help business to



increase the level of productivity in managing stocks, distribution, and customer management.

**Table 4.** Proposed Enterprise Software Application

Enterprise Software Application	Specification	Unit Cost	Qty	Total Cost
Point of Sale System	manage pricing, inventory, payments, enables business to track time and attendance of employees	9,000	1	9,000
Sales and Inventory Management System	helps make an effective decision in purchasing, suppliers, and customers.	to 9,000	1	9,000
<b>Overall Enterprise Software Application Price</b>				<b>20,500</b>

### 3.4 Proposed Data Management

Data Management,

The proposal data management of the researchers are the following: Database, data Warehouse. Database is an organized collection of structure information, or data, typically stored electronically in computer system. Data Warehouse is a type of data managementsystem that designed to enable and support business intelligence activities, warehouse are solely intended to perform queries and analysis and often contain large amounts of historical data.The data within a data warehouse is usually derived from a wide range of source as application log files and transaction and application.

### 3.5 Proposed Network and Telecommunication

In business, telecommunication is important to share Information globally. It allows the business to communicate with the supplies as well as to their valued customers. Through networking and telecommunication, a business can surely have the potential of having a connection to other businesses.

Telecommunication				
Network and Telecommunication	Specification	Unit Cost	Qty	Total Cost

Personal Area Network	PAN provides information transmission among gadgets, such as, PCs, smartphones, tablets and individual computerized aides.	9,000	1	9,000
UTP Cable	UTP Cable Patch Cord with RJ45 CAT6 10m LAN Cable	120	1	130
Overall Network and Telecommunication Cost		9,000		

### 3.6 Internet Platform

Internet Platforms Internet use to speed up daily task, The Internet platforms is very much useful in every customer. It is conveniently pay for purchases online and in-store for spend, just debit with EsayCash. Internet platforms use to good advantage offered by grocery store. Convenience of Marketing Internet marketing enables you to open to be open for business around the clock without worrying about store opening hours or overtime for staff, offering products on Internet is also convenient for customers. Online platforms mean's the secure area to the websites where the clients able to place orders and view previous transactions.

#### E-Commerce

Online business, otherwise called electronic trade or web trade, alludes to the purchasing and selling of merchandise or administrations utilizing the web, and the exchange of cash and information to execute these exchanges. Web-based business is regularly used to allude to the offer of physical items on the internet; however, it can likewise depict any sort of business exchange that is encouraged through the web.

**Table 7.** Proposed Internet Platforms

Internet Platforms	Specification	Unit Cost	Qty	Total Cost
E-commerce	allows customers	Freeto	1	Free

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pay via online

Overall Internet Platforms Free  
Cost

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### 3.7 IT Manpower

It helps the company in hiring the required manpower implementing the proposed Information Systems.

### Barcode Scanner

This prototype suits to the business that aids to improve the transaction process. This device will scan the barcode of the product, which will automatically attach the information of the product (the name, price and quantity) in the system. Moreover, the mobile at the upper part of the barcode scanner will enable the owners to determine the number of items sold, which will help make an inventory.

**Table 8.** Proposed IT Manpower

IT Manpower	Job Description	Proposed Salary
Computer Analyst	helps the owners use the computer efficiently and effectively, write and publish technical reports and oversee installation of new system	Php 15,000 per month
Computer Technician	maintains, the repairs computer hardware, software networks, resolves computer problems.	Php 150,000 per session

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## **4.CONCLUSION AND RECOMMENDATION**

### **4.1CONCLUSION**

Base on the findings, the study concludes thatGagang Grocery Store needs a system that can help them easier to pay their debts and shop online.

Otherwise, using contactless payments like EasyCash system customers could have quicker transactions and shorter queues at the checkout.

Therefore, EasyCash is becoming a trend in modern society (like pandemic). It paved the way to convenience that made transactions of every costumer easy.

### **4.2 RECOMMENDATION**

- We recommend EasyCash system to achieve the optional excellences.
- It allows to pay bills, purchase goods and services.
- EasyCash has made financial transactions easier.
- And it's truly helped to revolutionize the way customers transact.
- Researchers recommend EasyCash system to save money

## **4.3 REFERENCES**

- [1] Vainikka, B. (2015). PSYCHOLOGICAL FACTORS INFLUENCING CONSUMER BEHAVIOUR (p.1). Centria University of Applied Sciences. Retrieved from [https://www.theseus.fi/bitstream/handle/10024/96405/Vainikka\\_Bianca.pdf.pdf?squence=1&isAllowed=y](https://www.theseus.fi/bitstream/handle/10024/96405/Vainikka_Bianca.pdf.pdf?squence=1&isAllowed=y)
- [2] Durmaz, D. (2018). The Influence of Cultural Factors on Consumer Buying Behavior and an Application in Turkey (pp. 1-2). Turkey. Retrieved from [https://globaljournals.org/GJMBR\\_Volume14/4-The-Influence-of-Cultural-Factors on.pdf](https://globaljournals.org/GJMBR_Volume14/4-The-Influence-of-Cultural-Factors on.pdf)
- [3] Ching, M. D. (2017). Challenges and Opportunities of Electronic Payment Systems in the Philippines (Unpublished master's thesis). De La Salle University, Manila, Philippines.
- [4] Asian Nekk. (2017, November 21). Telcos and banks battle over Philippines cashless payments. Retrieved February 03, 2018, from [https://asia.nikkei.com/Features/F-T-Confidential\\_Research/Telcos-](https://asia.nikkei.com/Features/F-T-Confidential_Research/Telcos-)

and-banks battle-over-Philippines-cashless-payments?page=1

[4] <https://www.finder.com/ph/how-to-get-quick-and-easy-cash-through-pautang-apps>

[5] <https://www.linkedin.com/company/easycash-lending-company-inc>

[6] <https://5starsloans.com/loans/easycash/>