

**POINT OF SALE AND INVENTORY SYSTEM OF AMEGO DIGITAL
PRINTING SERVICES OF POBLACION NORTE,
BATUAN, BOHOL**

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ABSTRACT

Point of Sales and Inventory System is a system that is based on the process and data transaction of AMEGO DIGITAL PRINTING SERVICES, Poblacion Norte Batuan, Bohol. It aimed to convert manual recording of the transactions and sales into an automation process that will be helpful in fast processing, fast-tracking of records, and monitoring the sales in a fast and accurate manner. It also provides effective reports in data for management consumption and ensures secured and accurate information. The researchers sought the approval of the owner to conduct an interview to the staff to gather the data needed. The study was guided by the following questions (1) What are the operations and processes in Amego Digital Printing Services? (2) What are the problems and needs that need to address in Amego Digital Printing Services in running the business? (3) What are the possible solutions to the problems encountered with the current system? (4) What is the level of the system acceptability as perceived by the target user? The system was developed with the integration of local networking using a centralized server and with the following modules; point of sale, purchasing, administration, and implementation of business intelligence techniques for decision-support to the business such as real-time reports of sales and product inventory. The researchers implemented the system in Amego Digital Printing Services to meet the following ;(1) to ensure that the system meets more than the expectations and needs of the owner and its staff. (2) To detect the number of defective products in the inventory. (3) To test if the system is working properly. Based on the interview, the average weighted mean of the usability questionnaire is 6.7 with the interpretation of "Strongly Agree". Based on the findings and survey conducted, the researchers conclude that the proposed Point of Sales and inventory system is strongly agreed in terms of its usability. The system enables the users to maintain and to i organize sales records and inventory information for better customer services. It is then concluded and highly recommended to Amego Digital Printing Services that they must implement the Point of Sales and Inventory System. For business, it is a big help to the staff and owner because it provides not only a faster way of processing but also an accurate, efficient, informative, and effective system. The system enables the user to maintain organized sales records and inventory information for better customer service. It is then concluded and highly recommended to Amego Digital Printing Services that they must implement the Point of Sales and Inventory System. This implies a strong recommendation and implementation of the developed system. For the business, it is a great help for the owner and staff for it provides an accurate, fast, efficient, informative, and effective system. The results also suggested that the system provides high satisfaction to the owner and staff. Likewise, it reveals that the system is highly simple and is easy to use, effective, efficient, informative, and easy to understand and clear. Further, this implies also that the respondent has strongly agreed to the capability of the developed system, functions, and ease of the proposed system.

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TABLE OF CONTENTS

TITLE PAGE	I
APPROVAL SHEET.....	ii
ABSTRACT	iii
ACKNOWLEDGMENTS.....	iv
TABLE OF CONTENTS	vi
LIST OF PREVIEWS.....	ix
LIST OF FIGURES.....	x
LIST OF TABLES.....	xi
CHAPTER 1	
THE PROBLEM AND ITS SCOPE	
Rationale	1
Literature Background	2
THE PROBLEM	
Statement of the Problem	7
Scope and Limitation	8
Significance of the Study	9
RESEARCH METHODOLOGY	
Developmental Framework	16
Block Diagram	12
Developmental Model and Approaches	12

Software Development Tools	14
Environment and Participants	16
Data Collection	16

OPERATIONAL DEFINITION OF TERMS19

CHAPTER 2

PRESENTATION OF FINDINGS, ANALYSIS AND INTERPRETATION

Existing Operation and Processes	21
Present Event List	24
Context Diagram of the Present System	23
Event Specification	25
Needs of Present System	27
Proposed Narratives of Proposed System	28
Use Case Diagram	32
Use Case Narrative	33
Database Design	40
Class Diagram.....	40
Data Structure.....	42
Program Hierarchy.....	45
Functional Requirements.....	46
Non-Functional Requirements.....	48
Test Cases.....	49

Minimum Hardware Requirements.....	55
Minimum Software Requirements.....	55
Business Intelligence Integration.....	56
Screen Layout	59
Testing and Evaluation	65
System Usability	65
CHAPTER 3	
SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATION	
Summary of Findings	69
Conclusions	70
Recommendations.....	70
REFERENCES	72
APPENDICES	
Appendix A	74
Appendix B	76
Appendix C	77
Appendix D	82
CURRICULUM VITAE.....	87

LIST OF PREVIEWS

Preview

1	Inventory Report	56
2	Daily Sale Report	56
3	Damage Report	57
4	Stock In Report	57
5	Credit Reports	58
6	Screen Layout for User Log In	59
7	Screen Layout for Adding new Product	59
8	Screen Layout for Stock In Product Management	60
9	Screen Layout for Defective Items	60
10	Screen Layout for Available Items	61
11	Screen Layout for Defective Items	61
12	Screen Layout for Return Damage Items.....	61
13	Screen layout for Custom Inventory	62
14	Screen layout for Critical Stocks.....	62

15	Screen Layout for Unpaid Creditors	62
16	Screen Layout for Suppliers Information	63
17	Screen Layout for Administration Module	63
18	Screen Layout for Other Services.....	63
19	Screen Layout for View Items	63
20	Screen Layout for Administration Module.....	64

LIST OF FIGURES

Figure

1	Conceptual Framework	11
2	Block Diagram	12
3	Rapid Application Development Model	13
4	Context Diagram of the Present System	23
5	Top Level of the Present System	24
6	Customer/Staff Inquire Product.....	25
7	Customer Purchase Product	25
8	Customer Credit Sales	25
9	Customer Return Items	26
10	Customer Damage Replacement	26
11	Supplier Restock Item	26
12	Owners Report	26
13	Use Case Diagram	32
14	Class Diagram	41

15	Top Level Program Hierarchy	44
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LIST OF TABLES

Table

1	Summary of Respondents in the System Usability	17
2	Interpretative Guide of the System usability	17
3	Database for the Security Login	41
4	Database for Supplier Information	41
5	Database for Updating Product Information	42
6	Database for Product Stock-in	42
7	Database for Return Item	42
8	Database for Storing Cash Transaction	42
9	Database for Sold Item	43
10	Database for Purchase Order	43
11	Database Creditors Information.....	43
12	Database for Credit Purchase Transaction	43

13	Database for Services	44
14	Distribution of Respondents in the System Usability	66
15	System Usability Result	67

Chapter 1

THE PROBLEM AND ITS SCOPE

Rationale

Computer has changed the way people work especially in the field of business industry. Most businesses have used this in carrying out different business transactions. Computer has been greatly valued for its skill to execute tasks more hastily and more accurate than any human being had. These tasks include storing necessary information and organizing files that can be used by management and other departments in the business or the company in making economic decisions. This is where the Information System occurs; it is the process of entering and verifying data. Thus, an information system requires a database system that will handle the stored information.

According to Hamlett (2017), primary use of the periodic inventory system occurred prior to the introduction of point-of-sale scanners and computers. Companies such as drug and hardware stores that sold lots of small merchandise found it easier to update their inventory balances periodically instead of trying to account for every item sold on a daily basis. The periodic inventory system allows a company to record sales of merchandise in a special account. When merchandise gets sold, the company records the revenue but does not record a cost of goods sold (CoGS) entry. Likewise, the introduction of point-of-sale systems and computers greatly advanced the use of the perpetual inventory system. Perpetual inventory records each sale of merchandise and

places an entry in the company's inventory account. This system also immediately reduces sold inventory from stock and adds inventory back to stock when a customer returns merchandise. On the other hand, Mohr (2017) identified four types of inventory valuation under the perpetual inventory system namely: FIFO or the first in first out method of valuation applies the cost of the oldest inventory units to the cost of goods sold. This results in the inventory account on the balance sheet which closely approximates the most current value. This can artificially boost net profit. LIFO or the last in first out method of valuation applies the most recent inventory costs to the cost of goods sold. Here the income statement best approximates current costs. The inventory left over is valued at the oldest cost making the inventory in the balance sheet outdated when prices are rising. This valuation is not being used anymore. Average cost of valuation takes all of the units of inventory purchased and comes up with an average cost that is applied to both units still in inventory and those that have been used.

According to Analyn et al. (2019) of the Trimex Colleges, Biñan, Laguna, Philippines, with the guide of Point of Sale System with Inventory, the executives can without much of a stretch make predictable, dependable, and convenient choices. On the off chance that records are required, these can be gotten to in mere seconds by merely seeking significant data on the screen. All the data can be put away in a single document, rather than having reams of paper and different records for every item that would require filtering through to access in the manual framework.

According to Alaiza et al. (2015), Jochsen Hardware and Construction Supply, the client needs software or a system that would help the owner with the problems in terms of the different processes. Automation is mandatory, thus automated report generation is to be included in the proposed system. .

Amego digital printing services is a business which uses traditional method in the sales and inventory procedure. This establishment is located at Poblacion Norte, Batuan, Bohol. It is operated by the owner himself, Mr. Joel A. Dampog. The business offers a variety of printing services and website designing. The manual method in recording and monitoring of its sales and inventory and also the job ordering sequence of the business had resulted in the following problems such as redundancy of records due to difficulty in sorting particular type, difficulty in accessing and reviewing of documents of the transactions for the monitoring of all services. Not to mention this method is time-consuming and labor-intensive. This business establishment proves that it has a great room for improvement to be more productive. The sales and inventory system designed Amego Digital Printing Services will convert the manual recording procedure to automation modules such as acquisition, sales, administration and reports are designed to handle the transaction and it will also have a job ordering sequence. This will eliminate all the shortcomings of the present procedure.

Literature Background

These are the proponents' collected data and information that formed part of the research literature which are very useful in the development of this research.

The first theory is referred to as the Principles of Automation by Peter J. Denning and Craig Martell. It is concerned with the findings of efficient computational ways to perform human tasks. The principle tries to emphasize that there are efficient ways to perform human tasks by making use of the advancement of technology (Denning et al., 2007).

The second theory is from Tim Crosby (2012) in his study on 'How Inventory Management Systems Work' stated that inventory management systems are the rule in knowing which products are selling and which are taking up shelf space for enterprises as well as smaller businesses and vendors. The system balances the goal of ensuring customers always have enough of what they want against a retailer's financial need to maintain as little stock as possible (Tim Zierden, 2009). Thus, the ability to track sales and available inventory, communicate with 17 suppliers in near real-time and receive and incorporate other data such as seasonal demand must be available in the modern inventory management systems.

The third theory is on Edgar F. Codd's Relational Database Management System. According to Codd, a database must obey in order to be a true relational database. These rules can be applied on a database system that is capable of

managing is stored data using only its relational capabilities. This is a standard method by which information is organized and retrieved from computers. The theory is based on the idea that the data will be manipulated by the user using interface tools (Codd, 1970). Furthermore, there are numerous related systems that are available and running in different organizations and institutions.

Moreover, Article II Section 3 of the CHED Memorandum Order No. 53 series of 2006 states that:

"Computer Science is the study of concepts and theories, algorithmic foundations, implementation and application of information and computing solutions"

With this provision of the CHED Memorandum we are convinced that application of information and computing solutions in solving problem like inventory system, through the knowledge in Computer Science, would make a great leap from the manual methods of inventory to innovated solutions.

Furthermore, the study is supported by Article XIV Section 10 of the 1997 constitution of the Republic of the Philippines which states that:

"Science and Technology are essential for national development and progress. The state shall give priority to research and development, invention, innovation and their utilization, and to science and technology education, training, and services. It shall support indigenous appropriate, and self-reliant scientific and technological capabilities, and their application to the country's productive systems and national life."

According to this article, the state shall give priority in adapting Science and Technology in order to provide more improvement to the community especially for those in business. It is essential that the government should

develop the latest technology so that technology so that students can easily cope up with changes and advancement. This article supports the legality of the creation of the system.

These are numerous related readings that are significant in this study are:

1. Point of Sales with Inventory of Arm's Food and Delicacies. According to Analyn R. Mendoza et al, International Journal of Advanced Research in Computer Science (2019) who develop the point of sales with inventory management system for Arm's Food and Delicacies. The system aids in the screening of a wide range of records in a more efficient, less stressful, and progressively favorable manner. The system is designed to allow the company to show increasingly relevant information to customers, with the goal of speeding up and increasing sales and, above all, increasing the company's value.
2. Sales and Inventory System of Smart Pharmacy. The system will also improve in the selling and maintenance of medicinal items, which is a time-consuming operation. Because you'll have to physically go through each product box and look through the things. A manual inventory method is primarily reliant on people's actions, which increases the risk of human mistake. The corporation may quickly perform a computerized transaction with this system without having to manually list the names of the sold products and place them.
3. The Sales and Inventory System for Clavite Enterprise and Construction Supply in Poblacion Norte, Carmen, Bohol. The system

designed for Clavite Enterprises and construction supply will convert the manual recording procedure to automation. Modules such as acquisition, sales, administration and reports are designed to handle the transaction. This will eliminate all the shortcomings of the present procedure.

4. Sales and Inventory System of Leny's Centermart Store. Data like creditors envelop, delivery slip file, delivery receipt file are kept by the manager in his drawer. The manager retrieved and updated this file manually in every time he uses the files. The use manual calculation and sales losses is possible, recording of cash sales and credit sales are time consuming. The system enables to keep those files secure and avoid losses. It is also easy for the manager to retrieved files through network sharing.

There are four related open-source systems that are the most relevant to the proposed Computerized Point Sales and Inventory System. Among these related studies are the following:

1. ABC Inventory Software – is a freeware inventory management application which should be an absolute choice for small and middle level business groups because it works like a professional. This program is jam packed with multiple features like purchase order management, complete inventory track along with barcode, sale and shipping order management, scheduling warehouse appointments,

automatic stock report generation, sale, quotations, unlimited database record, mailing labels and so on.

2. Chronose Stock Card Inventory software – is a freeware inventory management application which keeps the complete track of your sales, purchase and warehouse inventory. It supports barcode system. Its features include detail inventory tracking, customizable interface, email alerts, complete inventory management, stock transfer, report generation, multi-currency conversion and many more.
3. InFlow Inventory - The software offers bar code tracking and allows for inventory tracking from multiple locations. Businesses can set up raw materials tracking so that numbers of whole items can be kept track of via the individual parts needed for assembly. Customizable fields and units of measurement allow the business to make the software perform to its market. Graphing. Cost tracking, invoicing, and purchase orders are also offered by InFlow. The free edition even offers multiple users access to data in a read-only format. Support is in the form of quick-start guides and tutorial videos, and the site also offers help forums and a direct contact support option (Archon Systems Inc., 2014).
4. CyberMatrix – is an open source pos product that focuses on Retail businesses. It has excellent inventory management, employee management, customer management, accounting features, and reporting. It will run on any ordinary windows PC. This is something you might want to check out if you are thinking of using any tablets, or

you might want to check out if you are thinking of using any tablets, or mobile ordering. I do not think this software has the capacity to utilize these yet. But if you are managing retail store and need a server-based application to run a few stations (or a few stores), this software will suite you.

As mentioned in the existing theories, a business intelligence system is a system that efficiently processes in obtaining the correct information and fast. Businesses require bravery to survive in today's world. This courage comes from spotting problems or opportunities, understanding the issue, and monitoring how decisions effect the present and future. It requires analytics to assist any organization in improving its efficiency and reporting results. This intelligence system will use data processing machines to automate the abstracting machines and encoding of documents, as well as the creation of interest profiles for each of the organization's action points.

Decision Support System (DSS) are characterized as interactive computer-based system that assists decision makers in identifying and solving problems and making decisions by utilizing data and models. Their major characteristics are: DSS incorporate both data and models; they are aimed in improving the effectiveness-rather than efficiency-of decisions; they are designed to assist managers in semi-structured or unstructured decision-making processes; DSS also supports, rather than replace, managerial judgment. The DSS was further divided into four categories: model, data, process and communication oriented.

In addition, there are also so-called DSS Generators, which make the development of specific DS Systems easier.

One of the solutions that have been widely adapted in vendor managed inventory (VMI) is a decision-support system. One of the key issues for failure in the implementation of VMII is the lack of integration with key decision support and reporting systems within retailer and manufacturer organizations. ISS framework for VMI is between general consumer goods retailers and their manufacturing suppliers. It can only be considered applicable for the most common consumer goods which supplies chains are same or similar in nature to apparel, consumer electronics, toys and furniture's. This includes using historical sales data that includes all seasonal variations to identify to coefficient values that had significant sales impact. The frequency of sales forecast should be selected based on the operations of the retailers, particularly how the sales data is captured and updated.

In addition, business intelligence, or BI, is an umbrella term that refers to a variety of software applications used to analyze an organization's raw data. BI as a discipline is made up of several related activities, including data mining, online analytical processing, querying and reporting. Companies use BI to improve decision making, cut costs and identify new business opportunities. BI is more than just corporate reporting and more than a set of tools to coax data, out of enterprise systems (Mulcahy, 2014).

Among the related functions and features discussed are implemented in the proposed Computerized Point of Sales and Inventory System of Amego Digital Printing Services. In particular, Computerized Point of Sales and Inventory System have a Local Area Network capability with relevant services such as: Product Management, Point of Sales, Stock Inquiry, Sales Report and Inventory Report that will facilitate the fully modular components of the system. These are the functions and features that are incorporated in the centralized Point of Sales and Inventory System. It was useful to adapt some functions and capabilities which are likely beneficial for the end-user, developer and also for the project development of the study.

The researchers use the existence of these systems as a starting point. This will help in meeting the requirements and features for proposed Computerized Point of Sales and Inventory System for Amego Digital Printing Services .In addition, business intelligence, or BI, is an umbrella item that refers to a variety of software applications used to analyze an organization's raw data. BI as a discipline is made up of several related activities, including data mining, online analytical processing, querying and reporting. Companies use BI to improve decision making, cut costs and identify new business opportunities" BI is more than just corporate reporting and more than a set of tools to coax data, out of enterprise systems (Mulcahy, 2014). The existence of these systems serves as a guide to the present study. This will help to meet the specification and features needed to develop for the sales and inventory system Amego Digital Printing Services.

THE PROBLEM

Statement of the Problem

The study aimed to develop a Point of Sales and Inventory System of Amego Digital Printing Services in Poblacion Norte, Batuan, Bohol

Specifically, this study aimed to answer the following:

1. What are the operations and processes in Amego Digital Printing Services?
2. What is the problem that needs to address in Amego Digital Printing Services in running the business?
3. What are the possible solutions to the problems encountered with the current system?
4. What is the level of the system acceptability as perceived by the target user?

Scope and limitation

This study was conducted at Poblacion Norte Batuan, Bohol. It focuses on the computerization of Sales and Inventory System with Job Order Sequencing of Amego Digital Printing Services. To ensure that the system is user friendly to the business and the customers and be able to aid the business in updating records of sales and tallies of orders from the year the business started up to the

future transactions as well. It is expected to generate a weekly transaction report, monthly transaction report, annual report within a short time if needed and to prevent any missing entry of records upon tracing the computerized storage; the development of the system covered the following features:

1. Job Order Sequencing and Monitoring System. This feature will be a great of help in the running the business for this is where the orders take place and monitoring of order sequence.
2. Local Area Network (LAN). It is important in implementing the Recording and Monitoring System. Local Area Network shares a central database for the storage and retrieval of information between the business owners and the data base of Amego Digital Printing Services.
3. Data Management. This feature updates the information of the business records for the sales and orders made.
4. Reporting: It provides printable data such as daily accomplishment, weekly accomplishment reports, monthly accomplishment reports, and annual accomplishment reports.

Significance of the Study

The study of the Point of Sales of Amego Digital Printing Services claimed to develop a report of all data related to the sales and job order management system information. To smoothen and make the business services

faster, computerized information will help provide accurate and reliable access to the information of the transactions.

Moreover, the study would benefit the following:

Customer. The system could lessen inconvenience to customers when they make a purchase. It would be easily known if the certain item they want to buy is still available. For example, if they will order some products such as printed mugs and if it is not available at the moment then they'll know if there will be any replacement for the mugs such as ref magnets as a souvenir or they could just ask the staff when the stocks will be available. The customer can decide directly whether to wait or to make changes of their orders depending on the items availability.

Staff. The system would help the staff's duty to be easier considering the calculations and tallying of products will be done with just one click. There will be less time to spend on calculating and inventory of the products for they no longer need to manually compute and count the items and prices being sold and the sales of the day.

Owner. The system would be beneficial to the owners in fastest generation of reports. This will help them to monitor the sales and check whether the sales is growing or dropping. The owner can monitor the performance of the business by generating reports for sales and inventory. Most of the business cares about its daily sales and also the damages that the store is facing. After seeing the reports he can easily decide to keep the business or end it.

Researchers. The study would improve the researcher's interpersonal relationship and help them become good communicators through interviews. It also enhances their reasoning, analytical abilities, and to widen their knowledge in programming and designing. Also, it served as a stepping stone in the application of such capability for their future job.

Future Researchers. This system would serve as guide to a more in depth development and implementation of sales and inventory system and related studies.

RESEARCH METHODOLOGY

Developmental Framework

Figure 1 below shows the conceptual diagram of the study. It represents the model of the study that follows the principle of input-process-output. These inputs are coming from the administration of the system. The process includes ordering, processing, recording, data management, and the output will provide decision support to the administration.

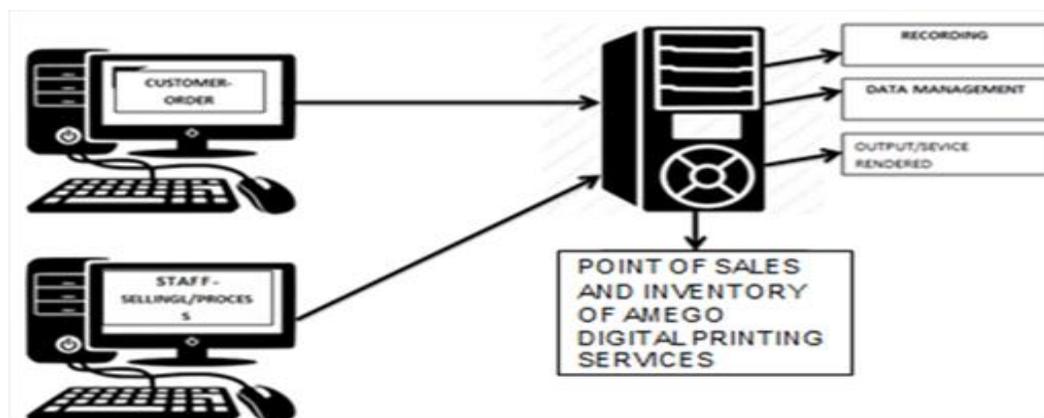


Figure 1. The Conceptual Framework of the Study
Block Diagram

Figure 2 below shows the block diagram of the proposed sales and inventory system for Amego Digital Printing Services. It covers the specification of the basic functionality of the system that represents with the work of the owner and staff. This includes new point of sales for the staff, inventories procedures, inquiring of available items for the staff and generating reports for the owner. It will also automatically generate a purchase order of an item if it reaches its re-ordering point.

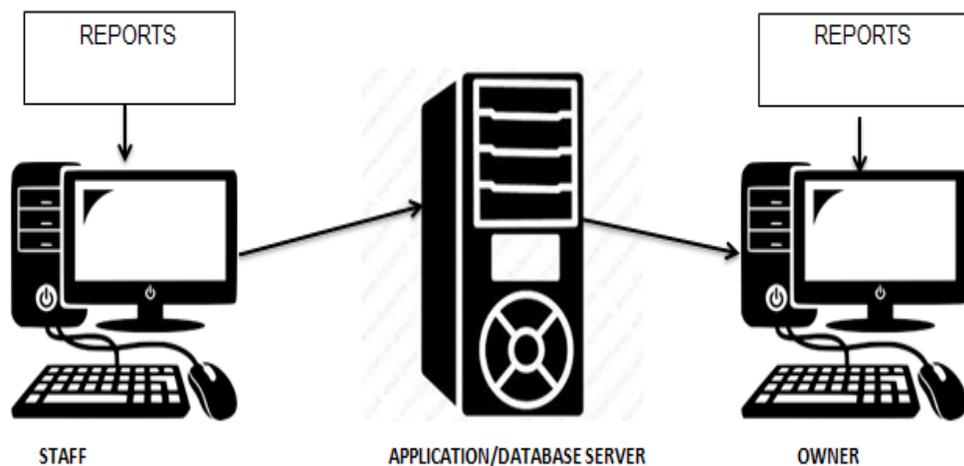
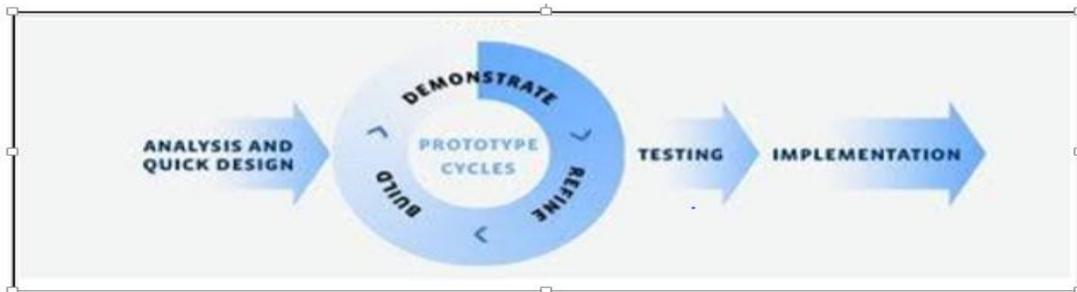


Figure 2. The Block Diagram

Development Model and Approach

The study used Rapid Application Development (RAD) has four phases to be followed. During the stage of analysis and design. Researchers and clients, cooperate to identify the development's goals and aspirations, as well as current and potential problems that must be addressed during construction. The

researchers are also looking for any existing system to be central point of the study, gathering data by asking questions of the study's respondents the owner and staff. To gather sufficient information for designing the system, document review and observation of procedures were done specifically in recording, monitoring and generation of reports.



Sourcelton Digital (2012), <http://www.etondigital.com/services/rapid-application>

Figure3. Rapid Development Application Diagram(RAD Model)

The prototype cycle is covered in the second stage. Through several prototype iterations, the developer fully worked out the user design. The researchers collaborates with the developer as well as present the system to the owner and staff to ensure that the needs are met at every stage of the design process, including reviewing the system's usability and functionality to see if it follows the procedures, and suggesting additional add-ins and recommendations that were tweaked until the expectations and satisfaction were met.

The testing phase follows extensive prototyping and cutting-edged design in the third stage. The beta system is presented to the owner and staff to ensure

that everything is running smoothly and that the client's expectation and goals are met. For the system's usability, the developers provide guide questions.

The final stage is implementation, in which the completed program is launched. Owner and staff are allowed to use the newly developed system. Data conversion, final tests, and user training were all done by the developers. While the developer and clients continue to look for bugs and potential problems that need to be addressed right away, the finalization was completed.

Software Development Tools

The following were the tools used in the development and analysis phase of Amego Digital Printing Services.

Software Development Tools

The following are the tools used in the development of the Computerize Point of Sales and Inventory for Amego Digital Printing Services:

- **Windows Server 2010 R2** – a server operating system development by Microsoft, which builds on the enhancement, built into Windows Server 2010. Operating system (OS), which is highly integrated with the client edition Windows 10, offers improvements in scalability and availability, as well as power consumption.
- **WAMP** – is a window web development environment that allows creating web applications with apache2 and Mysql Database. It

was use as the server of the proposed system and to view the system locally and one of the tools for database.

- **Microsoft Visual Studio 2012** – it is object-oriented database management system that makes it possible for programmers to create database solutions for the desktop to the Web. It also accepts external databases like MySQL which is an Open Database Connectivity (ODBD). It is used during the visual project programming of the proposed system. This language not allows programmers to create simple GUI applications, but also develop complex applications.
- **MYSQL** – offers standard database driver connectivity for using MySQL with applications and tools that are compatible with industry standards ODBC and JDBC. It is used in the connectivity of database in the programming application of the proposed system.
- **Microsoft Visio 2019** – provides stencils for business and engineering diagrams, process diagrams, network diagrams, software and database diagrams. It is used to represent the processes in the system.

Environment and Participants

The study is to be conducted at the Amego Digital Printing Services located in Poblacion Norte, Batuan, Bohol. Approximately, it is 16.1 kilometers away from Bohol Island State University, Bilar Campus (B.I.S.U), Zamora, Bilar,

Bohol. The respondents were the owner and cashier/staff of the establishment. A personal interview was conducted to the owner who handled and managed the business and asked about the processes of their business.

Data Collection

The researchers asked permission from Amego Digital Printing Services – Batuan, Bohol to conduct the study through a personal request. Data was gathered through personal interviews with the staff and owner using the interview guide question. The researchers asked some question to the owner such as, how many transactions are made per day, what are the drawbacks of using the manual process to record information of all the transactions. Actual participation, as well as an observation on the flow of the activity, was done to gather more data and information needed in the study.

Different documents and reports were reviewed to develop with the design for the required forms of the developed system including the possible input and output of data for the features to be added. The functionality of the system was assessed through a system usability testing survey with the target client. It was done to quantify the effectiveness of the developed system. There were 2 respondents in the system usability. It includes the owner and Staff.

Table 1 Distribution of Respondents in the System Usability Assessment

Respondents	No. of Respondents
Owner	1
Staff	1
Total	2

Table 2 Interpretation Guide of the System Usability

Weight	Range	Description	Interpretation
7	6.4 – 7.0	Strongly Agree	The respondents are convinced that the system is extremely user friendly.
6	5.5 – 6.3	Agree	The respondents strongly believe and are certain that the system is very useful
5	4.6 – 5.4	Tend to Agree	The respondents tend to agree that the system is usable.
4	3.7 – 4.5	Neither Agree or Disagree	The respondents are neutral whether or not the system is usable.
3	2.8 – 3.6	Tend to Agree	The respondents had a low level of confidence in the system usability.
2	1.9 – 2.7	Disagree	The respondents believe that the system is not usable
1	1.0 – 1.8	Strongly Disagree	The respondents strongly confident that the system is not usable.

Table 2 demonstrates how the data were interpreted for system usability. The System Usability Guidelines developed by MIT Information Services Technology were used to rate the system usability.

The average weighted mean or the weighted mean score was produced to evaluate/assess the system acceptability level using the following formula to estimate the general acceptability of the system.

$$WMS = \frac{1f_1 + 2f_2 + 3f_3 + 4f_4 + 5f_5}{n}$$

Where:

WMS=Weighted Mean Score

f1 = frequency of respondents given a rate of 1

f2 = frequency of respondents given a rate of 2

f3 = frequency of respondents given a rate of 3

f4 = frequency of respondents given a rate of 4

f5 = frequency of respondents given a rate of 5

n = total number of respondents

1, 2...5 = constant (rating to the service provided)

The interval value was used to calculate the range of the interpretative guide for usability. The interpretative guide that was used to characterize the system usability is shown in the table above.

OPERATIONAL DEFINITION OF TERMS

The following terminologies are the defined conceptually in the conduct of this study:

Amego Digital Printing Services - is the name of the business was the researchers proposed the Point of Sales and Inventory System.

Decision Support. It analyzes business data and presents it so that users can make business decisions made easily. It is also distinguished from an operational process that collects the data in the course of normal business operation.

Point of Sales and Inventory System of Amego Digital Printing Services. Is the title of the study that researchers intend to develop. This system helps the user monitor and record the data of customers.

POS (Point of Sales)- a module that handles that calculates the goods for the customer.

Also, the following terms are defined conceptually by the conducted study;

Administration- a module that handles confidentiality of the records of the system.

Business Intelligence (BI). Is a broad category of applications and technologies for gathering, storing, analyzing, and providing access to data to help enterprise user makes a better decisions.

Cash – amount to be given by a customer exchange for an item.

Customer. Also called client, buyer or purchaser, is usually used to refer to a current potential buyer or user of the products of an individual or organization, mostly called the supplier, seller or vendor.

Database. Is a computer program that stores the collection of data, generally stored and accessed electronically from a computer system. Where databases are more complex, they are often developed using formal design and modeling techniques.

Inventory-a complete listing of merchandise or stock on hand, work in progress, raw materials, and finished goods on hand, etc. made each year by a business concern.

Records. It refers to documents kept that would cover buy/sell transactions, billings inside/outside the management or services rendered.

Report - an account or statement describing in details an event, situation, or the like, usually as the result of observation and inquiry.

Sales – is the principal activity involved in the selling of products or services in return for money or other compensations.

Services. It is the product/output that is given to a customer.

System Users - it is the one who interacts with the system, to enable its operation, or to utilize its functions. **Receipt** – it is a piece of paper that will be given to a customer where they can see the items or products being bought and its corresponding price.

Chapter 2

PRESENTATION OF FINDINGS, ANALYSIS AND INTERPRETATION OF DATA

EXISTING OPERATION AND PROCESSES

This research focuses on Point of Sales and Inventory System of Amego Digital Printing Services. Every day from 8:00 a.m. until 5:00 p.m., the establishment is open. Mr. Joel A. Dampog, the owner, is in charge of this. The company currently employs two staffs.

A. Inquiry

As the customer inquires about the product, the staff checks if that product is available in the display/storage area. As the staff checks its availability, she also looks for the products price in the stock notebook where all of the information is written. The customer also inquires about the transaction during the delivery of the purchased product/items. On the other hand, the staff relays the answer to the inquiry of the customer.

B. Purchasing

When a customer purchases a product they will give a list of the items to be purchase or talked to the staff on what to buy. Then the staff will look for the items in the stock notebook, calculate the price, accept the payment, give out an official receipts are issued to the customer as a proof of purchase and write the amount in the sales notebook.

However, when the business is purchasing supplies to the supplier, the staff will create a list of all the products to be purchased in a paper. Then the staff prepares and computes all purchased items/products and gives the total amount to the supplier. The purchased items/products will be updated in the stock notebook for inventory purpose and will be sold to the customers after.

C. Customer Credit Sales

In most cases when a customer order more items in the business (e.g. 100 printed shirts) they will have to pay half of the amount as a down payment and the other half will be recorded as a credit or a balance. And after the release of the items the payment for the balance will be paid off. However, for some scenarios the customer pays all the amount right after the order is made.

D. Customer Return Damage Items

In some scenarios, when there is a faulty product or a defective items that was sold to customers they will complain to the staff while bringing the defective item and it's receipt. The staff will examine if the product is really faulty and if it matches the items they sold in the official receipt. And if it does, the staff will have to process the returned items.

E. Customer Damage Replacement

For the damaged items received by the customer there will be a replacement. For products to be replaced, the customers need to present the receipt of the products to the staff to be sure that said items are from their

establishment. The establishment has a box where damaged products are kept. Replacement of the products is within a week from purchase date only

F. Supplier Restock Items

As for the inventory process, the updating of stocks will take place right after the stocks arrived or delivered by the supplier. The staff will be adding and updating in the stock notebook while the receipt of the purchased will be recorded in the ledger. The damaged orders will be also returned to the supplier. The stocks are monitored by the manually counting the stocks weekly. The staff will be checking the stock notebook if the count of the remaining item is matched to the list. If the number of remaining items is not matched to the stock notebook, they consider it a loss.

G. Owners Reports

At present based on the manual operation for the reports, the staff who is responsible for keeping all the receipt of the daily transaction and also write the amount of the daily sales in the sales notebook. The owner will be checking both the stock notebook and sales record notebook for the inventory and sales reports. The report is done by creating a summary of the sales and inventory by using the data from the records which are the sales records and inventory records.

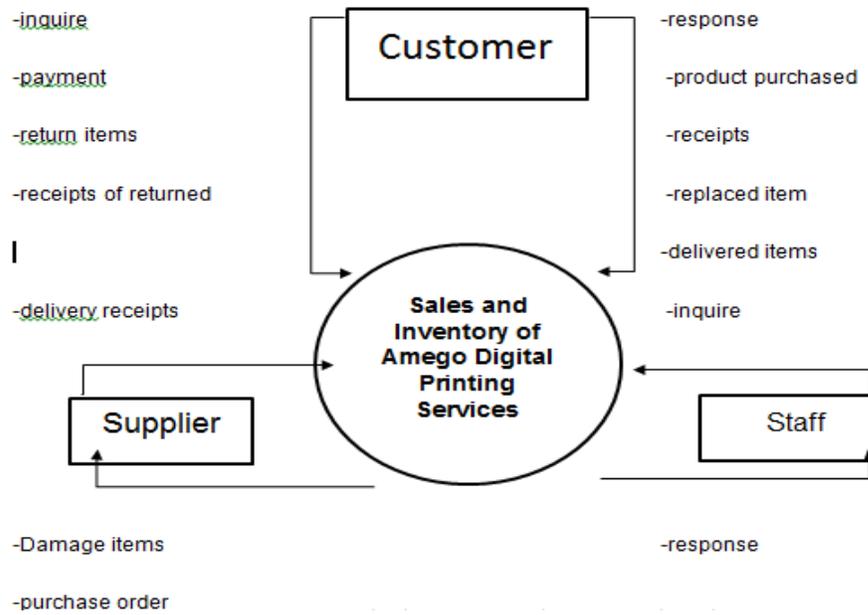


Figure 4. Context Diagram of the System

PRESENT EVENT LIST

1. Customer/Staff I Inquire Product
2. Customer Purchase Product
3. Customer Credit Sales
4. Customer Return Items
5. Customer Damage Replacement
6. Supplier Restock Item
7. Owner/ Manager Reports

EVENT SPECIFICATION

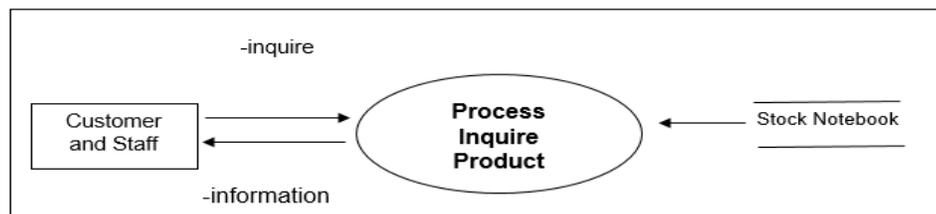


Figure6. Event 1 Customer /Staff Inquire Product

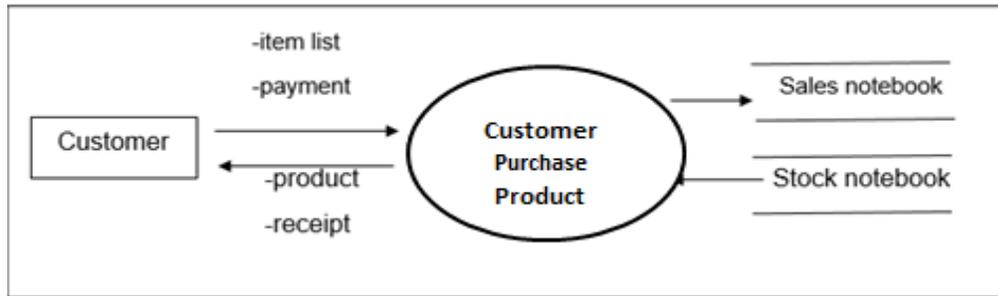


Figure 7. Event 3. Customer Purchase Product

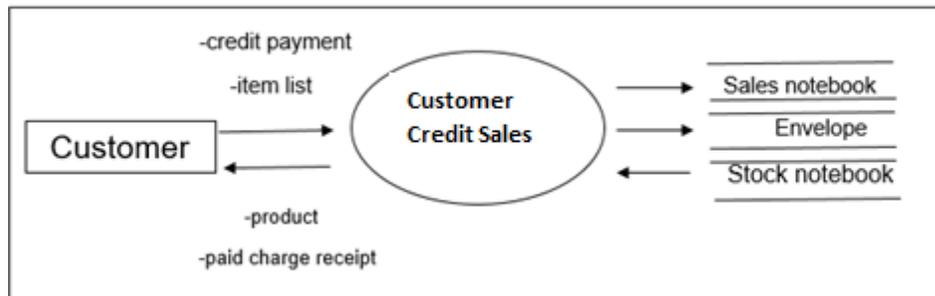


Figure 8. Event 4. Customer Credit Sales

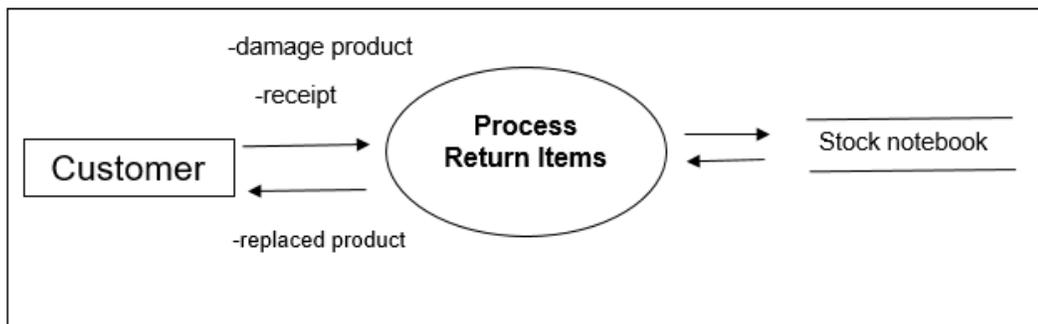


Figure 9. Event 5. Customer Return Items

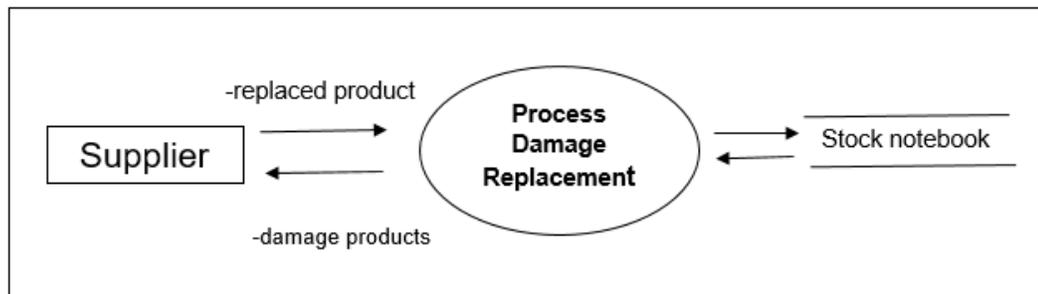


Figure 10. Event 6. Customer Damage Replacement

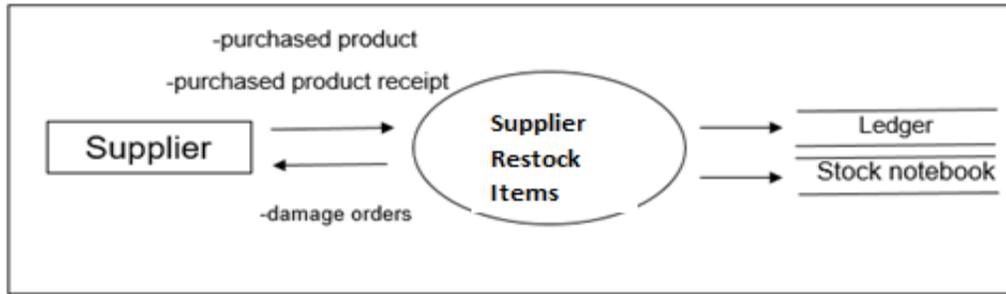


Figure 11. Event 7. Supplier Restock Items

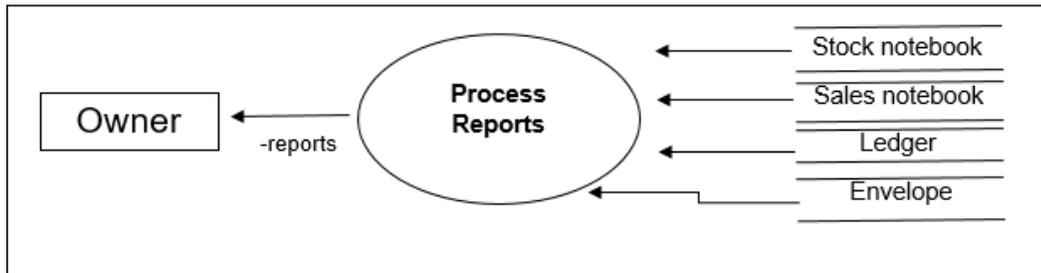


Figure 12. Event 8. Owners Report

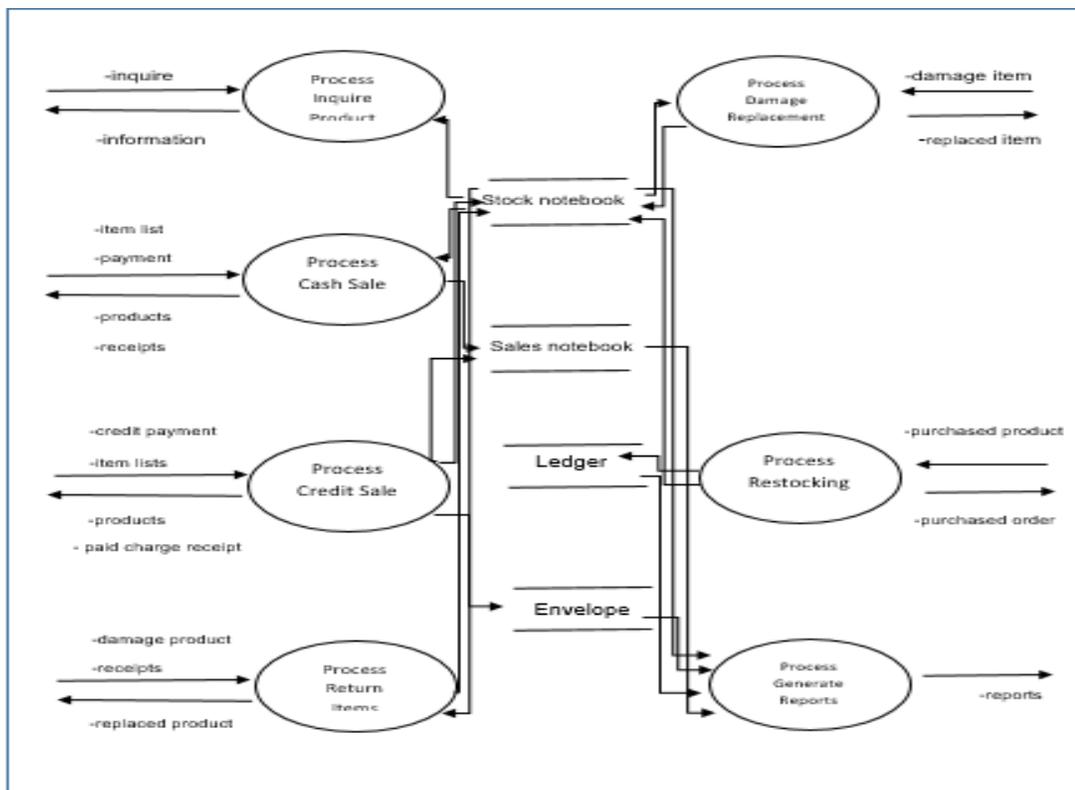


Figure 5. Top Level of the Present System

Needs of the Present System

The used of computerized sales and inventory system would eradicate the problem and improve the present system that the Amego Digital Printing Services has. The computerization of the system is very much needed to easily process large amount of the data to easily monitor the availability of stocks. Furthermore, much time and effort exerted on the present system will be minimized. The inventory process will be improved and records of the business will at always available at all times and secured.

The following are the needs of the existing sales and inventory system of Amego Digital Printing Services

1. Develop a system that will handle sales, product records and sales activity using computer as a tool.
2. Provide product information which is updated and complete in data for reference.
3. Point of sales must be reflected real time scenario to be able to forecast sales for future management purposes.
4. Proper organization of records and files to avoid misplacement.
5. Credit sales must be monitor and open for other customers.
6. Timely production of reports on daily sales, monthly sales and inventory to assess the status of the business.
7. Rapid and accurate processing of queries with regards to the availability of stocks

PROPOSED SYSTEM

SYSTEM NARRATIVE

The automated Sales and Inventory System is conceptualized based on the information obtained by the researchers concerning the current system's manual procedure. The computer is used to carry out all of the processes involved in sales and inventory, such as query processing and report generating.

Before accessing the system each of the authorized users must have a user account and password for the security for the security of the system from unauthorized user. This will checked if the inputs are valid from the database. The administrator account is for the owner which is has the right to access all the features of the system especially in inventory and generating the reports of all the transactions. Under the Point of Sales and Inventory is the receipt of all the purchases of a customer. All the information purchased by the customer and the damaged products will be recorded in the database. The calculations will be done automatically by the system. The information of the cash transaction will be recorded in the database for both credit and cash sales.

The sales report provides a data grid view of total sales amount or the higher sales. The owner will just select the date, month and year to be reported.

Point of Sales and inventory System of Amego Digital Printing Services

Based on the information gathered by the researchers from the existing sales and inventory system of Amego Digital Printing Services the proposed sales and inventory system was conceptualized. Before accessing to the business sales and inventory system, each user of will have an individual account the accounts are classified into two; admin and the user which is a limited account. The admin account is intended for owner for he has an overall control of the sales and inventory of the shop.

The staffs have a limited account for she has the duty of responding to the customer's inquiry. Accessing the process of the entire business is through menus. For inquiry process, all will have a unique code. When the customer purchases something, the staff-in-charge will enter the purchase items on the system to get its price and receipt.

Each creditor has an account where all his transaction in credit be recorded. After every payment is received, a cash sales invoice will be printed twice for the customer's copy and the establishment. The staff should input creditors' primary information such as creditor's number, name, address, contact number.

A charge invoice will be issued to every creditor. Upon payment of creditors account, a cash sales invoice will be issued to the creditor if the account's fully paid; otherwise an acknowledgement receipt will be given. Advanced payment will be recorded as well. Creditor's number serves as the

primary key for fast and easy retrieval and credit information upon the payment of creditors account. If a customer returns a purchased item, the invoice number will serve as primary key, and is also needed in order to replace the returned item. Replacing an item that has a lower price than item return is not allowed" in case if the replaced item is higher than the returned item, the customer will pay the excess amount. If an item is returned due to factory defect; it is replaced by same item only. A report on damaged item is done weekly in order to know the items that are needed to be returned to the supplier and then replaced by a new one.

The report to the supplier is then stored in the damage file after it has been used" Whenever the customer wants to avail delivery, the staff will get the customers information such as name, address, and contact number" The cash sales invoice and the delivery receipt are printed twice for the customer's copy and the establishment. The cash sales invoice will be given to the customer after paying the ordered products and the duplicate of it will be stored in the sales receipt file. Then the staff gives the delivery receipt to the driver which will be given to the customer upon delivering the products.

Delivery of items depends upon the amount of order if and only if the amount reached 5,000.00 pesos and above as per establishment rule. During the delivery, the staff who delivers brings the delivered items together with the deliver's receipt. The delivery receipt serves as a proof that is typically signed by the customer during the delivery to indicate that they have in fact received the item being delivered and have taken possession of it. The copy of signed delivery

receipt is brought back to the establishment for acknowledgement purposes and keeps in the delivery slip file.

Reports are to be generated. Daily report includes sales report which will determine the status of the business. The sales report is stored in sales report file" inventory reports are generated weekly reflecting the stocks available and quantity of stocks. inventory report is kept in the inventory file. On the other hand, purchase order report is made weekly to be reference in the tblstock.tbl which is printed and given to the supplier ordering of stock is prompted by the establishment reorder points per product. When a certain product reaches below its reorder point, the quantity of that certain product prior to be purchase will reflect on the purchase order report. Payments on the ordered products are done during delivery of the supplier's representative. Official receipt is given to the establishment in return. The delivery slip and OR which is given by the supplier is then kept in the Delivery slip file. Prices of items will then be adjusted and updated' Pull out of products will be done monthly Suppliers can be registered in the system where requisite information about the suppliers are stored and retrieved as needed.

Use Case Diagram

A Use Case Diagram is a list of actions or event steps typically defining the interactions between a role (known in the Unified Modeling Language as an actor) and a system to achieve a goal.

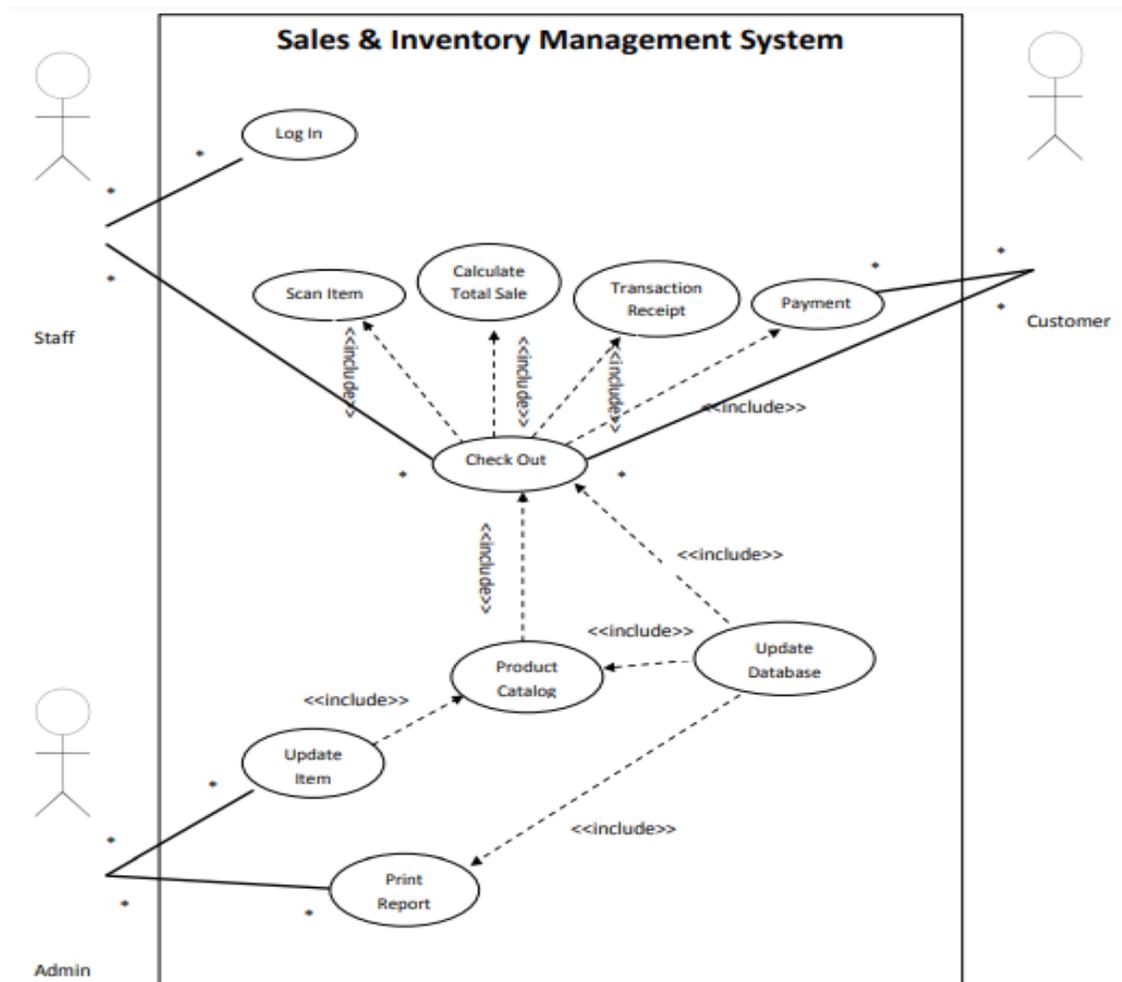


Figure14. Use Case Diagram – Point of Sale and Inventory of Amego Digital Printing Services

Use Case Narrative

Table 1. Use Case Narrative-Manage Items

Process Manage Item	
Level	Owner and Staff
Goal in Context	Present in a form in which the owner/staff can manage items by adding, updating and deleting of items.
Primary Actor	Owner and Staff
Pre-Conditions	None
Triggers	Owner and Staff select manage items in the main menu
Success Guarantee	Process manage items can add, update, and delete stocks information.
Main Success Scenario	Owner selects the items tab in the main menu. Points of Sale and Inventory System: Present the transaction information Points of Sale and Inventory System: Waits for the owner to add, updating and deleting of items.
Extensions: None	

Table 2. Use Case Narrative-Monitoring

Process Monitoring	
Level	Owner
Goal in Context	Present in a form in which the tab shows monitoring module.
Primary Actor	Owner
Pre-Conditions	None
Triggers	Owner selects Critical stocks and Unpaid Creditors.
Success Guarantee	Process monitoring can monitors the sales, credit and critical stocks
Main Success Scenario	Owner selects the critical stocks and Generate purchase order. Points of Sale and Inventory System: Present the creditors information and sales record.
Extensions: None	

Table 3. Use Case Narrative-Administration

Process Administration	
Level	Owner
Goal in Context	Present in a form in which the tab shows the administration module.
Primary Actor	Owner
Pre-Conditions	None
Triggers	Owner selects Manage users
Success Guarantee	Process administration can now update/ delete users in the system.
Main Success Scenario	Owner selects the admin module in the manage user tab. Points of Sale and Inventory System: Present the staff and admins information Points of Sale and Inventory System: Waits for changes to be made.
Extensions: None	

Table 4. Use Case Narrative-Search or View Items

Process Search Items	
Level	Owner and Staff
Goal in Context	Present in a form in which the owner/staff can view/search items in the inventory.
Primary Actor	Owner and staff
Pre-Conditions	None
Triggers	Owner/staff can view/search items.
Success Guarantee	Process search items can search/view items in the inventory tab.
Main Success Scenario	Owner selects the inventory/stock availability. Points of Sale and Inventory System: Display the stocks information.
Extensions: None	

Table 5. Use Case Narrative-Manage Sales

Process Manage Sales

Level	Owner and Staff
Goal in Context	Present in a form in which the owner/staff can manage the sales records.
Primary Actor	Owner and Staff
Pre-Conditions	None
Triggers	Owner/Staff select sales grid for sales report.
Success Guarantee	Process manage sales displays the daily, monthly, yearly and overall sales records.
Main Success Scenario	Owner selects the sales in the main menu. Points of Sale and Inventory System: Present the sales transaction records.
Extensions: None	

Table 6. Use Case Narrative-Inventory

Process Managing Inventory Records	
Level	Owner and Staff
Goal in Context	Present in a form in which the owner/staff can manage, add, or delete the items in the inventory records.
Primary Actor	Owner and Staff
Pre-Conditions	None
Triggers	Owner/Staff select manage items in the main menu
Success Guarantee	Process managing inventory records can add/update/delete information and records.
Main Success Scenario	Owner selects the stock items tab in the main menu. Points of Sale and Inventory System: Present the items information Points of Sale and Inventory System: Waits for the owner/staff to add, delete, and input/change item names and prices.
Extensions: None	

Database Design

Database design is the process of producing a data model of the database. This model contains all the needed logical and physical design choices and physical storage parameters needed to generate a design in a data definition language, which can be create a database.

System design is an aspect of system progress that serves as building for the system enhances the Point of Sale and Inventory System of Amego Digital Printing Services. And the researchers aim a new system which would be used in the establishment.

In order to meet the client's needs, various improvements were made to Amego Digital Printing Services Point of Sale and Inventory System. The goal of this design is to provide a solution to a problem and assist the end user.

RELATIONAL ENTITY

A relational entity is a set of tables containing data fitted into predefined categories. Each table which is sometimes called a relation contains one or more data categories in columns. Each row contains a unique instance of data for the categories defined by the columns. The table below shows the data and how they relate with each other. The connections of the data are presented in the next page in figure 14.

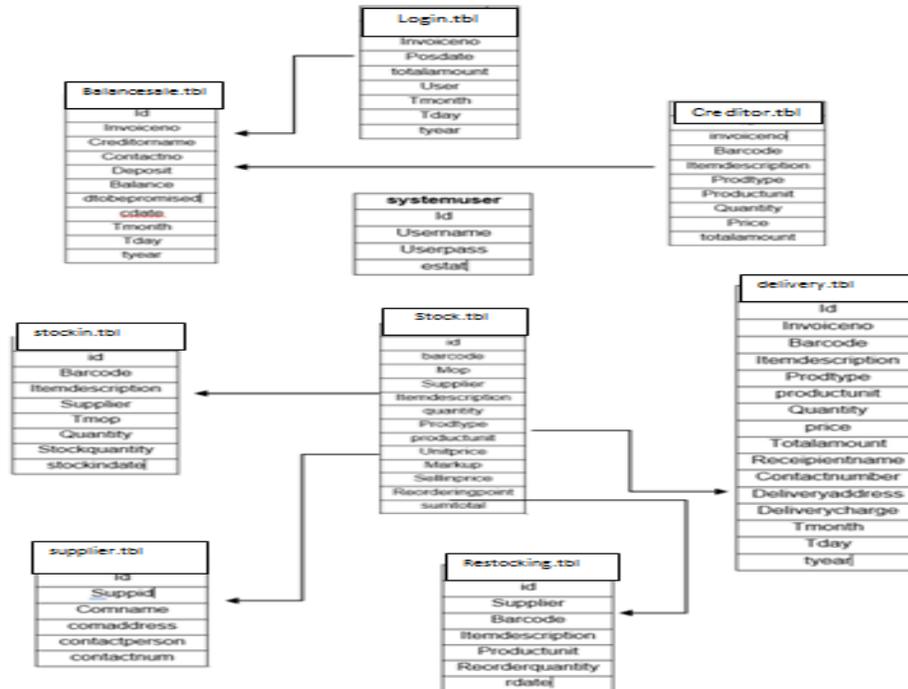


Figure14. Relational Entity

DATA STRUCTURE

Table 1. This table user.tbl is used for the system security and login.

Fied	Fieldname	Type	Width	Description
1	Usertype	Varchar	50	User type name
2	Password	Varchar	50	User Password

Table 2. This table supplier.tbl is used for the supplier information.

Field	Fieldname	Type	Width	Description
1	Suppid	Varchar	50	Supplier ID
2	comaddress	Varchar	50	Company Address
3	Comname	Varchar	50	Company Name
4	Contactperson	Varchar	50	Contact Person Name
5	contactno	Varchar	50	Contact Number

Table3. This table updatestocks.tbl is used for updating product information.

Field	Fieldname	Type	Width	Description
1	Supplier	Varchar	50	Supplier ID
2	Itemdescription	Varchar	50	Product Name
3	Quantity	Double		Product Quantity
4	Productunit	Varchar	50	Product Unit
5	Unitprice	Double		Product Price
6	Markup	Double		Mark-up Percentage
7	Selling price	Double		Selling price
8	Restocking	Double		Restocking/adding new items

Table4. This table restocking.tbl is used for adding new products.

Field	Fieldname	Type	Width	Description
1	Itemno	Double	50	Product Unit
2	Suppld	Varchar	50	Supplier I.D
3	Quantity	Float		New Stock Quantity
4	Stockarrival	Double	50	Stock arrival

Table5. This table rereturn.tbl is used for return/replace item.

Field	Fieldname	Type	Width	Description
1	Invoiceno	BigInt	50	Invoice Number
2	Productunit	Varchar	50	Product unit
3	Quantity	Float		Product Quantity
4	Price	Float		Product Price
5	Date	Varchar	50	Returned/Replace Date

Table6. This table cashvoice.tbl is used for cash transactions and invoice number.

Field	Fieldname	Type	Width	Description
1	Invoiceno.	BigInt	50	Invoice Number
2	purchasedate	Varchar	50	Date sold
3	Cashreceived	Double		Cash Received
4	Totalamount	Double		Total Amount
5	Totalchange	DDouble		Total Change
6	Totalamount	Float		Total Amount Paid

Table7. sales.tbl is used for sold items.

Field	Fieldname	Type	Width	Description
1	Invoiceno.	BigInt	50	Invoice Number
2	Itemno	Varchar	50	Product unit
3	Quantity	Float		Product Quantity
4	Price	Float		Item Price
5	Datetime			Date and time of purchased
6	Staff			Staff-in-charge
7	Tamount	Float		Total Amount

Table8. purcoder.tbl is used for purchased order.

Field	Fieldname	Type	Width	Description
1	Supplierid	BigInt	50	Invoice Number
2	Itemno	Varchar	50	Product unit
3	Quantity	Float		Product Quantity
4	Restockquantity	Float		Restocking quantity
5	Resdate	Float		Restocking Date

Table9. balancesales.tbl is used for credit transaction.

Field	Fieldname	Type	Width	Description
1	Invoiceno	BigInt	50	Invoice Number
2	Itemno	Varchar	50	Product Number
3	Quantity	Float		Product Quantity
4	Price	Float		Item Price
5	Totalamount	Float		Total Amount

Table10. This table creditor.tbl is used for creditor information.

Field	Fieldname	Type	Width	Description
1	CreditorsID			Creditors ID
2	Invoiceno	BigInt	50	Invoice Number
3	Creditorname	Varchar	50	Creditors Name
4	Contactno	Varchar		Contact Number
5	Deposit	Double		Deposit
6	Balance	Double		Total Balance
7	Ccreate	Varchar		Credit Date

Table11. This table service.tbl is used for services number.

Field	Fieldname	Type	Width	Description
1	ID	Varchar	50	Creditors ID
2	Serviceno	Integer	10	Service number

Program Hierarchy

The diagram below is a simple hierarchy chart, showing the company's functions and activities of the system. It is described as a visual representation of a system of hierarchy and can also be referred to as a structure chart. Roles, ranks or positions are clearly laid out in an illustrated format that depicts the relationship between the elements. The top of the chart is generally reserved for the most important or significant part of the system of hierarchy. Cascading down from the top are the other components of the system of hierarchy.

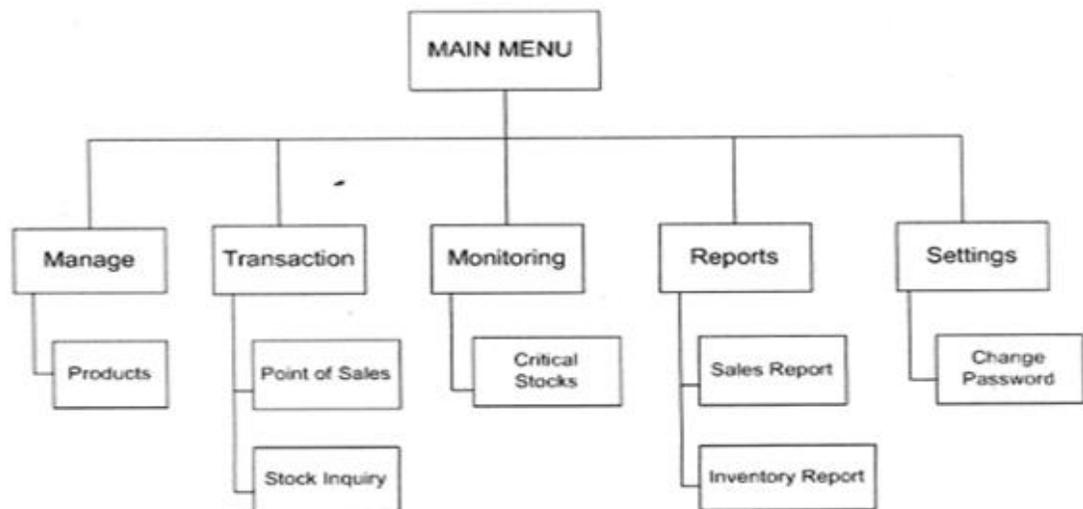


Figure16. Main Figure Hierarchy

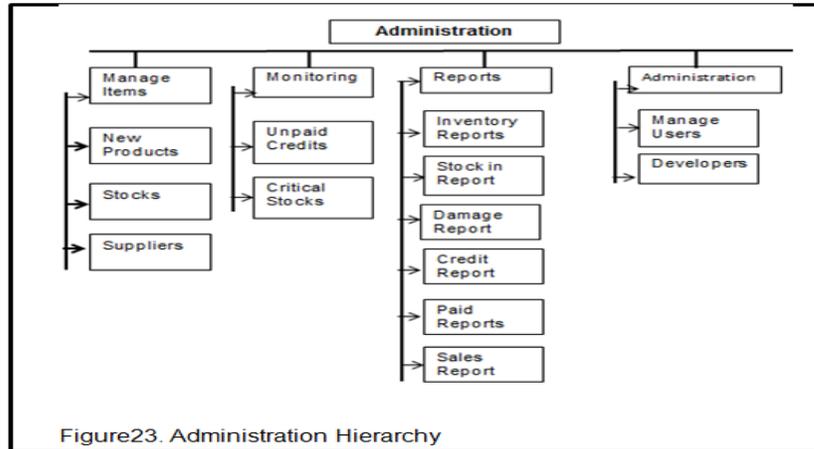


Figure23. Administration Hierarchy



Figure24. Staff Hierarchy

Functional Requirements

A functional requirement specifies a software system's or component's function. A function is made up of three parts: inputs, behavior, and outputs. Calculations, technical details, data manipulation and processing and other specific functionality that define what a system is expected to perform are examples of functional requirements. The functional requirements were defined

using a connected Point of Sale and Inventory System. The following are based on existing standard requirements of a Point of Sales and Inventory System with approval and coordination from management:

Product Purchasing.

FREQ 1. The system should allow the owner to enter item information.

FREQ 2. The system should allow the cashier/staff to return items that are broken or defective.

Sales Function.

FREQ 3. The system must allow cashier/staff to directly assess, calculate and collect fees from the customer.

FREQ 4. The system must allow the cashier/staff to provide a receipt for the customer.

FREQ 5. The system must record each transaction into the database.

Inventory Function.

FREQ 6. The system must allow owner to search available items.

FREQ 7. The system must have a restocking point to avoid stock shortage.

Return Function.

FREQ 8. The system must allow cashier/staff to accept return damage items and replace a new one.

Reports Function.

FREQ 9. The system should associate with retrieving, filtering, and displaying data stored in the execution of Sales and Purchasing.

FREQ 10. The system should provide the statistical reports for the decision support of the owner.

Administrative Function.

FREQ 11. Access to the system must be password protected.

FREQ 12. Only the management can update and access the inventory system.

Non-Functional Requirements

A non-functional requirement is one that defines criteria that can be used to assess the system's performance rather than specific actions. Functional requirements, on the other hand, specify precise behaviors or functions.

1. User's credentials must be protected to ensure security by utilizing a username and password combination.
2. The system should be based on existing technology, such as the company's Windows.

3. The system should be able to run on the specified hardware.
4. The system should undergo maintenance from its developer to ensure that the system is fully functional.

Test Cases

A test case is a comprehensive procedure that fully tests a feature or an aspect of a feature under a set of conditions or variables that a tester would use to assess if an application or software system is running correctly or not. It also refers to a set of input variables, execution preconditions, expected results, and executions created for a certain program route or to ensure compliance with a specific requirement. These are the scenarios that were tested during acceptance testing. To test the proposed system, the test plan is to allow people utilize the system and follow the instructions in each test case. a module for adding new item information to the database, and it is expected to do so. The test case is a module for searching item information that is intended to return the desired results.

User Account Login:

Test Case 1:

Module: Administration account

Severity: 1

Instructions:

1. On the login form write the corresponding username of the Administrator.
2. Input user password. Then click the option "Login" button.

Expected Result:

1. User can access in all modules of the system except the point of sale.

Clean-up: Click "Cancel" button to close module.

Test Case 2:

Module: Cahier Account

Severity: 1

Instructions:

1. On the login form write the corresponding username of the Cashier/staff.
2. Input user password. Then click the option "Login" button.

Expected Result:

1. User can only access in the Point of Sale module.

Clean-up: Click "Cancel" button to close module.

Test Case 3:

Module: Sales Clerk account

Severity: 1

Instructions:

1. On the login form write the corresponding username of the Sales clerk.
2. Input user password. Then click the option "Login" button.

Expected Result:

1. User can only access in viewing available items.

Clean-up: Click "Cancel" button to close module.

Adding New Products:

Test Case 1:

Module: Items Information Management for "Adding new item" command.

Severity: 1

Instructions:

1. On the main menu, click "Manage".
2. On the Sub Menu, click "New Product".
3. Input detailed item information.

4. Click "Add" button

Expected result:

1. Item successfully saved.
2. The newly added items information should be displayed.

Test Case 2.

Module: Items Information Management for "Search" command.

Severity:1

Instructions:

1. On the main menu, click "Manage".
2. On the Sub Menu, click "New Product".
3. Type the corresponding first letter of the items name or the barcode in the search textbox.

Expected result:

1. Item information should be successfully displayed.

Test Case 3:

Module: Items Information Management for "Updating" command.

Severity: 1

Instructions:

1. On the main menu, click "Manage".
2. On the Sub Menu, click "New Product".
3. Type the corresponding first letter of the items name or the barcode in the search textbox.
4. Click the item to edit information.
5. Edit the information to be updated.
6. Click the option "Update" button.

Expected Result:

1. Item should successfully be updated.

Test Case 4:

Module: Items Information Management for "Deleting" command.

Severity: 1

Instructions:

1. On the main menu, click "Manage".

2. On the Sub Menu, click “New Product”.
3. Type the corresponding first letter of the items name or the barcode in the search textbox.
4. Click the item to delete.
5. Click the option “Delete” button

Expected Result:

1. Item should be successfully be deleted.

Point of Sale:

Test Case 1:

Module: Case Sale Transaction.

Severity: 1

Instructions:

1. On the login form write the corresponding username of the Cashier.
2. Input user password. Then click the option “Log in” button.
3. Click the option “New Transaction”. Then input item barcode in the barcode textbox or click the search item button.
4. Input the item description in the search item menu.
5. Click the Selected Item to add.
6. Click Add quantity or double click the selected item to add quantity then press Enter or click “Ok” button.
7. Enter the amount of cash paidby the customer.
8. Click Print or press enter print transaction.

Expected Result:

1. It should display the correct total amount of the items.
2. It should print a sales receipt of the transaction for the customers.

Clean-up: Click “Close button” to close module.

Test Case 2:

Module: Credit Sale Transaction.

Severity: 1

Instructions:

1. On the login form write the corresponding username of the Cashier.
2. Input user password. Then click the option “Login” button.
3. Click the option “New Transaction”. Then input item barcode in the barcode textbox or click the search item button.
4. Input the item description in the search item menu.

5. Click Selected item to add.
6. Click Add quantity or double click the selected item to add quantity then press enter or click "Ok" button.
7. Click "Credit" button.
8. Input credit information.
9. Click "Enter" button to save credit information.

Expected Result:

1. It should save in the credit database.

Clean-up: Click "Close" button to close module.

Test Case 3:

Module: Removing unwanted items.

Severity: 1

Instructions:

1. While in the transaction click the desired item to remove.
2. Click "Remove Selected Item" button.
3. Click "Yes" button.

Expected Result:

1. It should remove the selected item.

Clean-up: Click "Close" button to close module.

Test Case 4:

Module: Credit Payment

Severity: 1

Instructions:

1. On the login form write the corresponding username of the Cashier.
2. Input user password. Then click the option "Login" button.
3. Click "Credit Payment" button.
4. Input invoice number or click "Credit List" button. Double click the selected information in the credit list menu to select.
5. Enter the amount to be deposit.

Expected Result:

1. It should deduct the total balance of the customer.

Clean-up: Click "Close" button to close module.

Test Case 5:

Module: Adding interest

Severity: 1

Instructions:

1. On the login form write the corresponding username of the Cashier.
2. Input user password. Then the option "Login" button.
3. Click "Credit Payment" button.
4. Input invoice number or click "Credit List" button. Double click the selected information in the credit list menu to select.
5. Click "Add Interest" button.
6. Enter interest percentage.

Expected Result:

1. A percentage should be added in the total balance.

Clean-up: Click "Close" button to close the module.

Critical Stocks:

Test Case 1:

Module: Generating Purchase order.

Severity: 1

Instructions:

1. On the main menu, click "Monitoring". Then select "Critical Stocks" in the Sub menu.
2. Select the supplier in the combo box.
3. Select item information from the list.
4. Enter re-order quantity.
5. Click "Generate Purchase Order" button.

Expected Result:

1. It should add to the purchase order list.

Reports:

Test Case 1:

Module: Sales Reports

Severity: 1

Instructions:

1. On the main menu, click "Report". Then select "Sales Reports" in the Sub menu.

2. On the “Sales Reports” click Sales Reports in the Sub menu.
3. Choose the beginning date and the ending date.
4. Click the “Load” button.

Expected result:

1. The report information preview should be displayed on screen.

Clean-up: Click “Close” button to close module.

Test Case 2:

Module: Inventory Reports

Severity: 1

Instructions:

1. On the main menu, click “Reports”. Then select “Inventory Reports” in the Sub menu.
2. Click the Combo box then select “Mode of Payment” then click “Go” button.

Expected Results:

1. It should display list of available products.

Minimum Hardware Requirements

This covers the minimum hardware requirements needed by the system to function appropriately as intended and expected. The consideration of these requirements was based on what is available in the market and what most computer package system offers.

COMPONENT	SPECIFICATION
Microprocessor	Intel Core Celeron 2.40 GHZ
Hard disk drive	500 Gigabytes
Random Access Memory	4 Gigabytes, twinmos
Monitor	Dell
Keyboard	Usb- connector type
Mouse	Usb – connector type

Minimum Software Requirements

The project Point of Sale and Inventory System of Amego Digital Printing Services, requires various software to function correctly. This software's features are listed below, along with their specifications. These requirements are create using the computer units that were used during the system's construction.

ITEM	SPECIFICATION
Operating System	Windows 10 64 – bit
Programming Language	Vb.net version 11.0
WAMP	Version 2.0i

Business Intelligence Integration

According to extant theories, business intelligence refers to an organization's ability to collect and arrange information. It strives to promote better business practices and decision-making with solutions that take business intelligence (BI) to new heights and ensure that the relevant data is available. Enterprise reporting, specifically tabular business intelligence reporting was employed by the system. Business intelligence was integrated into the system, particularly in the query and reporting component. All reports must be dynamic, and they must update in real time whenever the users perform any transactions. Each report is created by connecting multiple tables in the database's connection. This guarantees that the data in the report is accurate and consistent.

There are three reports showed below that is showing how business intelligence applied in the proposed system. These include the following Preview 1 on the next page which is the Sales Report represents a report showing the sales transactions. Preview 2 shows the credit report that represents the

creditor's information. Preview 3 which is the stocks or inventory report represents the stocks available.

SALES AND INVENTORY SYSTEM					
SALES REPORT					
Monthly Report				Total Amount Sales	19,0740
Description	Customer	Price	Quantity	Amount	Date
MUG	Adelito Viodor	105	5	525	2022/7/19
T-SHIRT	Analle Locquino	180	20	3600	2022/7/19
MUG	Peter	105	10	1050	2022/7/19
MUG	Analle Locquino	105	10	1050	2022/7/19
T-SHIRT	Analle Locquino	180	10	1800	2022/7/19
T-SHIRT	Adelito Viodor	180	10	1800	2022/7/19
LANYARD	Analle Locquino	173	10	1730	2022/7/19
T-SHIRT	Japhet	180	5	900	2022/7/21
LANYARD	Japhet	173	5	865	2022/7/21
MUG	Japhet	105	5	525	2022/7/21
LANYARD	Peter	173	5	865	2022/7/21
MUG	Adelito Viodor	105	100	525	2022/7/21
LANYARD	Adelito Viodor	173	95	865	2022/7/21

ital Page No.: 1+ Zoom Factor: 75%

Preview 1. Sales Report

AMEGO DIGITAL PRINTING SERVICES					
Poblacion Norte, Batuan Bohol 6318					
Proprietor: JOEL A. DAMPOG					
TIN: 290-409-568-00000 Non-VAT Reg.					
Official Receipt			Date: 8,15,2022		
Job Order: 0013					
Customer Name: Peter					
Description	Employee	Price	Quantity	Amount	Date
MUG	lito	105	10	300	2022/7/19
Total Amount Cost:				1050	
Total Payment:				300	
Total Balance:				750	

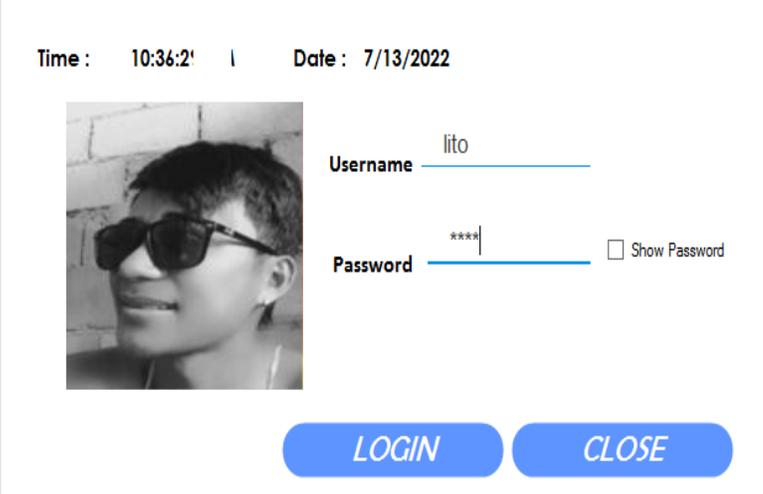
Preview 2. Credit Report

SALES AND INVENTORY SYSTEM							
Available Product							
15/08/2022							
Item Number	Description	Supplier	Pre Price	Percentage	Quantity	Price	Date
0001	MUG	ADELITO VIODOR	100.00	0.05	140	105	23/04/2022
0002	LANYARD	JHAPET ESITO	165.00	0.05	80	173	23/04/2022
0003	T-SHIRT	ANALIE LOCQUINO	150.00	0.20	20	180	23/04/2022

Preview 3. Stocks Report

Screen Layout

Screen layout is one of the many attributes of the systems user-friendliness. It should be designed in such a way the browsers can navigate the system quickly and easily and it should provide a clear recognition of the task the users need to perform.



Time : 10:36:21 | Date : 7/13/2022

Username

Password Show Password

[LOGIN](#) [CLOSE](#)

Preview 6. Screen layout for user log-in

Item Information: Search:

View Stock in List

[Print Available Stock](#)

Stock - in

Product Id: ##### Quantity:

Product Name: Description Total: Total

Price: Price Date: 7/13/2022

Remaining Quantity: Quantity

Save Close

Preview 8 Screen layout for adding new products

Product Details:

Product ID: 000

Product Name:

Name of Supplier:

Quantity:

Price: .00

Percentage Added:

Selling Price: 00

Date: 4/23/2022

[SAVE](#) [UPDATE](#) [CLOSE](#)

Preview 7. Screen layout for adding new product

Item Information: Search:

View Stock in List

[Print Available Stock](#)

Stock - in

Product Id: ##### Quantity:

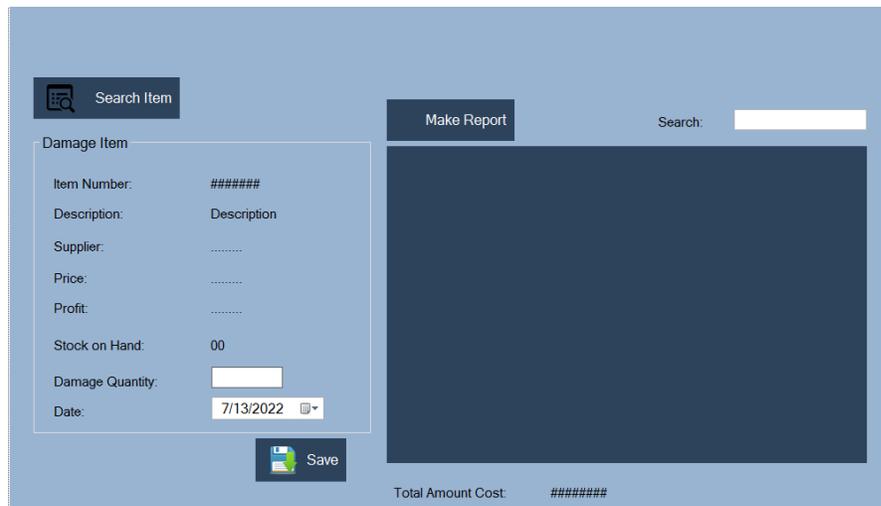
Product Name: Description Total: Total

Price: Price Date: 7/13/2022

Remaining Quantity: Quantity

Save Close

Preview 8. Screen layout for stock in product management



Preview 9. Screen layout for adding defective items to the report

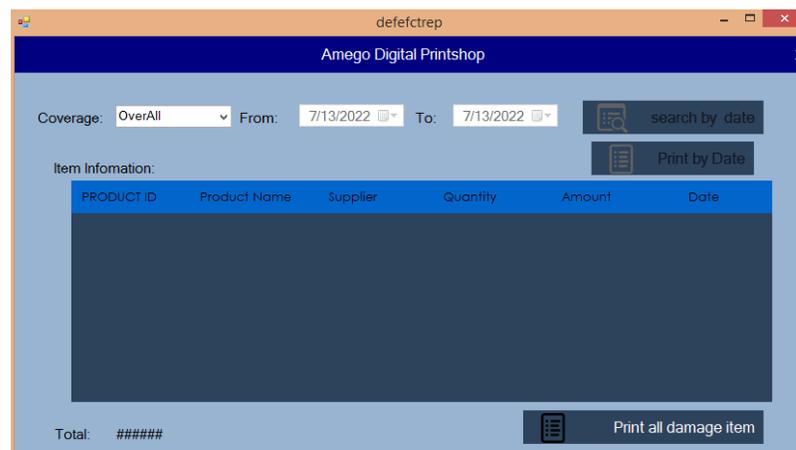
SALES AND INVENTORY SYSTEM

Available Product

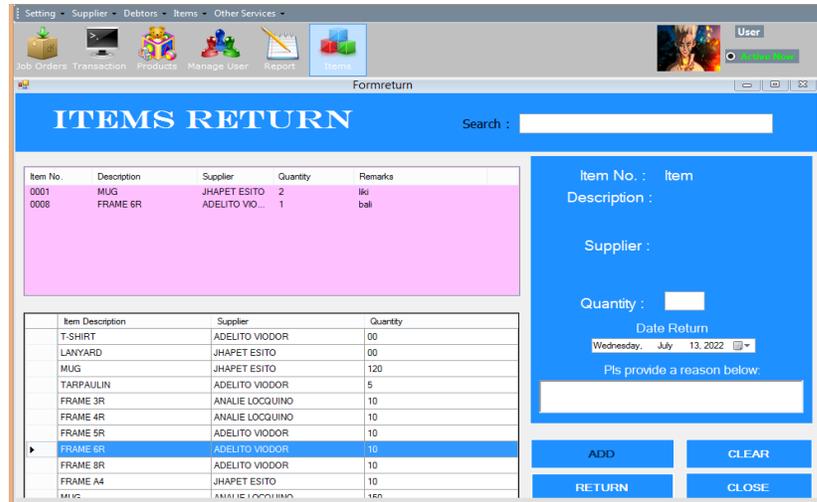
7/13/2022

Item Number	Description	Supplier	Pre Price	Percentage	Quantity	Price	Date
0001	MUG	ADELITO VIODOR	100.00	0.05	100	105	23/04/2022
0002	LANYARD	JHAPET ESITO	165.00	0.05	1055	173	23/04/2022

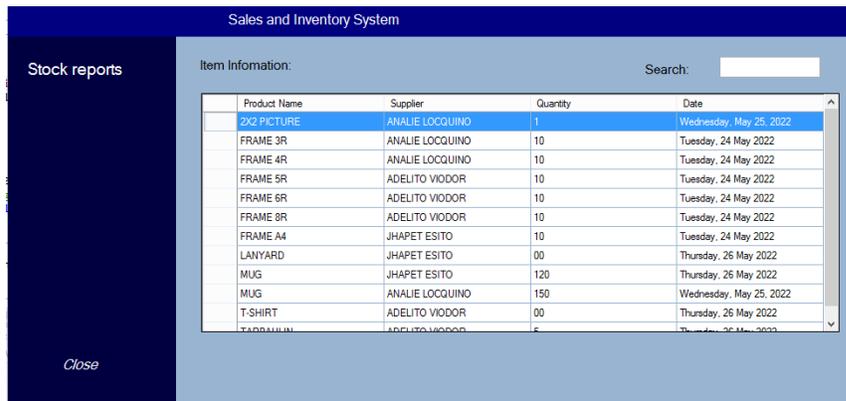
Preview 10. Screen layout for available items



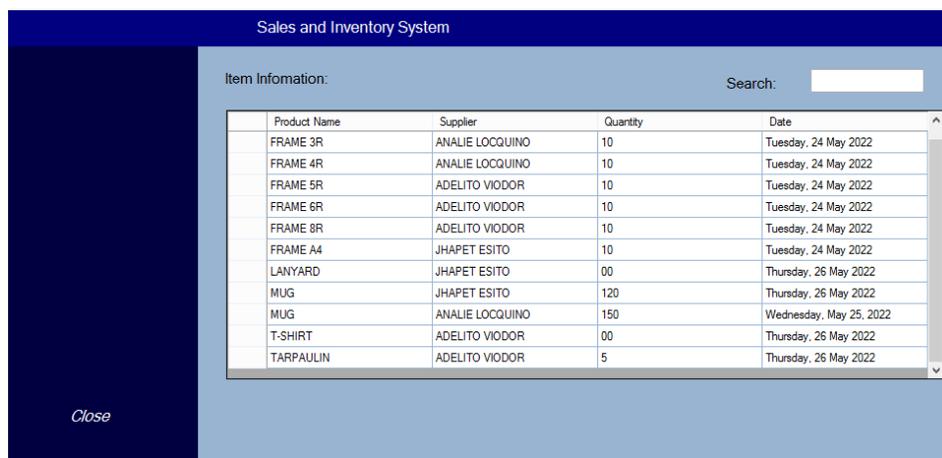
Preview 11. Screen layout for adding defective items



Preview 12. Screen layout for return damage items



Preview 13. Screen layout for critical stocks



Preview 14. Screen layout for custom inventory

Setting - Supplier - Debtors - Items - Other Services -

Job Orders Transaction Products Manage User Report Items

User **Active Now**

Search Debtors

Order ID: 000

Products:

Name:

Employee:

Control Box

Cash: Advance Payment: 0

Change: Balance: 0

Total Payment: 0

JOB ORDER	PRODUCT	DESCRIPTIC	COSTUMER NAME	EMPLOYEE	TOTAL AMOUNT	ADVANCE PAYMENT	BALANCE	QUANTITY	prodid	ord	des	con	due
0014	MUG	Sovenier	Ben	japhet	1000	2100	1000	20	0001	Amego-4	Sovenier	2147483647	2022/8/18
0014	LANYARD	Id	Ben	japhet	2190	5190	2190	30	0002	Amego-4	Id	2147483647	2022/8/22
0008	MUG	Aldafa	Japhet	japhet	00	1260	00	12	0001	Amego-3	Aldafa	2147483647	2022/7/28
0011	T-SHIRT	Fs	Japhet	lito	400	900	400	5	0003	Amego12	Fs	2147483647	2022/7/21
0011	LANYARD	Id	Japhet	lito	365	865	365	5	0002	Amego12	Id	2147483647	2022/7/21
0011	MUG	Wedding	Japhet	lito	225	525	225	5	0001	Amego12	Wedding	2147483647	2022/7/21
0007	LANYARD	Dadf	Japhet	lito	00	865	00	5	0002	Amego	Dadf	3434343	2022/7/27
0008	LANYARD	Rgrgr	Japhet	japhet	00	865	00	5	0002	amego-3	Rgrgr	2147483647	2022/7/28
0010	LANYARD	Id	Peter	japhet	365	865	365	5	0002	Amego11	Id	2147483647	2022/7/21
0006	LANYARD	Dfaf	Peter	lito		519		3	0002	Amego1	Dfaf	2147483647	2022/7/25
0013	MUG	Regalo	Peter	lito	750	1050	750	10	0001	000012	Regalo	910122345	2022/7/19
0005	MUG	Birthday	Peter	lito		1050		10	0001	Amego1	Birthday	2147483647	2022/7/25

Preview 15 Screen layouts for unpaid creditors

SUPPLIERS DETAILS

Supplier Name: ANALIE LOCQUINO

Address: BUENOS AIRES

Contact Number: 091234567890

Company Name: BOHOL MERKADO

ID	SUPPLIER	ADDRESS	CONTACT	COMPANY
SUPP-ID0001	ADELITO WIODOR	CARMEN BOHOL	099090909	JDDJDD
SUPP-ID0002	JHAFET ESITO	BATUAN BOHOL	09090909232	BQ COMPANY
SUPP-ID0003	ANALIE LOCQUINO	BUENOS AIRES	091234567890	BOHOL MERKADO

Preview 16. Screen layout for supplier's information

Setting - Supplier - Debtors - Items - Other Services

Job Orders Transaction Products Manage User Report Items

Wednesday **PRINTING SERVICES** Date: 7/13/2022
Time: 1:04:48 PM

Bar Code : 0000

Item	Quantity	Unit Price
Printer Repair	2	300

INVOICE NO: 00000001

Total Amount : **600.00**

Cash Php 1000

Change Php 400.00

OK

Preview 17. Other Services

Setting - Supplier - Debtors - Items - Other Services

Job Orders Transaction Products Manage User Report Items

Sales and Inventory System

Item Information: Search: mugl

Product Name	Supplier	Quantity	Date
MUG	JHAPET ESITO	120	Thursday, 26 May 2022
MUG	ANALIE LOCQUINO	150	Wednesday, May 25, 2022

Close

Preview 18. View Items

Setting - Supplier - Debtors - Items - Other Services

Job Orders Transaction Products Manage User Report Items

Adelito

Preview19. Screen layout for administration module

Testing and Evaluation

System testing referred to testing the entire software system. The software is being tested. System testing is typically performed on the entire application program to assess the software's overall compliance with business, functional, and end-user criteria. A software test professional's goal in system testing is to find defects or bugs in both the interfaces and the software as a whole. However, during integration testing of an application or software, the tester focuses on individual units that have been integrated together, whereas during system testing, the focus is on software design, behavior and even owner expectations, so the system testing phase of software testing is also known as investigatory testing.

System Usability

Software testing is a means of determining whether software is performing as expected, such as providing accurate output, running quickly enough, handling expected loads, and appropriately responding to user inputs. Software evaluation is the process of determining whether the software's original aims have been met. After the software has been produced and its users have had enough time to become familiar with it and be able to use it effectively, it is evaluated. The owner and staff were among the 2 people being surveyed.

The system usability questionnaire developed by Lewis, J.R. was used by the researcher. (1995). The system usability test was conducted by the researchers in Amego Digital Printing and Services located at Poblacion Norte, Batuan, Bohol by May 25, 2022.

The researchers presented the system to the owner and staff at Amego Digital Printing and Services on May 25, 2022 at exactly 1:00 pm in the afternoon. The researchers showed the system's functionality, including acquisitions, changing, deleting, and examining payables, as well as accepting customer purchases and generating reports on the point of sale and inventory system. Occasionally, respondents attempt to use the system to see how simple it is to use.

Table 16. Distribution of Respondents in the System Usability

Respondents	No. of Respondents	Percentage
Owner	1	50
Staff	1	50
Total	2	100

Shown in the table below is the system usability result. The tabulated results were computed through the weighted mean. The equivalent interpretation of the weighted mean was based on the interpretative guide as indicated in the table above. The table shows the weighted mean the interpretation of each statement. The average weighted mean of the system usability questionnaire is

6.8 with the interpretation of Strongly Agree. The weighted mean which is 6.8 was the result of the computation which have been done by adding all the weighted mean ratings and divided by the number of criteria being rated. This implies that the system is strongly high on its usability. The result suggests that the system provides satisfaction among the respondents.

System Usability Result

Criteria for System Usability	Weighted Mean	Interpretation
1. Overall, I am satisfied with how easy it is to use the system	7.0	Strongly Agree
2. It was simple to use the system.	7.0	Strongly Agree
3. I can effectively complete my wok using this system.	7.0	Strongly Agree
4. I am able to complete my work this system	7.0	Strongly Agree
5. I am able to efficiently complete my work using this system.	7.0	Strongly Agree
6. I feel comfortable using this system.	7.0	Strongly Agree
7. It was easy to learn to use this system	7.0	Strongly Agree
8.I believe I became productive using this system.	7.0	Strongly Agree
9. The system gives error messages that clearly tell me how to fix problem.	6.3	Agree
10. Whenever I make mistake using the system, I recover easily and quickly.	6.3	Agree
11.It is easy to find the information i needed.	6.3	Agree
12. The information provided for the system is easy to understand.	7.0	Strongly Agree
13. The information is effective in helping me complete the tasks and scenarios.	7.0	Strongly Agree
14. The organization of information on the system screen is clear.	6.3	Agree
15. The interface of this system is pleasant.	7.0	Strongly Agree
16. I like using the interface of this system.	7.0	Strongly Agree
17. This system has all the functions and capabilities that I expect it to have.	6.3	Agree
18. Overall, I am satisfied with this system.	7.0	Strongly Agree
AVERAGE WEIGHTED MEAN	6.8	Agree

CHAPTER 3

SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

Summary of Findings

The researchers discovered the following findings;

1. The present system uses manual method in managing their sales and inventory process;

2. With the growing number of sales and recording transaction to comply, the manual method finds difficulty in managing transactions;
3. The present system can hardly keep in retrieving records about stocks and monitoring of items availability and prices update;
4. The records like sales and credit were kept in the record book and to be scanned manually during the time of the payment of the creditors and also in making daily sales report;
5. It is time consuming and the possibility of miscalculation can occur especially in generating reports;

The average weighted mean of the system usability questionnaire is 6.8 which are interpreted as “Strongly Agree”. The interpretation means that the system is strongly high on its usability. The result also suggests that the system gives high satisfaction among the respondents. It also reveals that the system is highly and user-friendly to use, effective and understandable. The respondents also mean strongly agree with the capabilities and function of the proposed system.

Conclusions

Based on the findings, the researchers were able to develop a customized sales and inventory system fitted for the sales transaction and inventory recording of Amego Digital Printing Services. The implementation and testing of the system reveals a positive result to the end user and was approved by the

management. The system promotes ease in transaction processing, safe recording, and effective data sharing between the computers which were an evident problem on the present system. The proposed system sales and inventory system for Amego Digital Printing Services is strongly agreed in terms of system usability. This shows that the proposed system was effective. The owner and the staff believe and confident enough that the proposed system will simplify the business transactions. The system could help the store in minimizing the time consumed in physically counting inventories. In addition, the system was easy to learn and use though it was new to everyone. Integration of the network mechanism for data sharing and communication among computer or branches if there's any, using TeamViewer was also effective. It bridges the gap of communication because of the distance. The system also offers different modules such as acquisition, sales, administration, reports, and business intelligence technique. Moreover, the owner also highly accepted the tabular type reports that are used as a business intelligence technique for decision-support.

The proposed point of sale and inventory system of Amego Digital Printing Services was successfully constructed following a thorough design and development process. The researchers come up with the conclusion in which the point of sale, management records, reports, and stock information are all ordered and correctly stored.

The average weighted mean of the system usability questionnaire is 6.8 with the interpretation of Strongly Agree. This interpretation means that the system is strongly high on its usability. The owner, sales clerk and the cashier

are satisfied with how easy it is to use the system. The respondent strongly believe and confident that the system is very usable.

Recommendations

Based on the study's findings and conclusions, it is strongly advised that the proposed system should be implemented at Amego Digital Printing Services.

The following suggestions should be followed for a good implementation:

1. The owner and staff who will utilize the proposed system must receive training in order to become familiar with the system.
2. The business establishment should continuously update the programmers for bugs and errors for continuous and updates.
3. As the time goes by, the business will become bigger and build another branch. In this case, they must implement the web-based point of sale and inventory system to centralize the operations of all the branches.
4. The use the O.R (Official Receipt) approved from BIR (Bureau of Internal Revenue).
5. The system must be implemented to Amego Digital Printing Services..

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APPENDICES

APPENDIX A.

System Usability Questionnaire

Instructions:

- ◆ Please rate the usability questionnaire.
- ◆ Try to respond to all of the items.
- ◆ For items that are not applicable, use N/A
- ◆ Make sure these fields are filled in

Rating Scale:

7 - Strongly Agree

6 – Agree

5 - Tend to Agree

4 - Neither Agree or Disagree

3 - Tend to Disagree

2 – Disagree

1 - Strongly Disagree

Criteria for System Usability	Weighted Mean	Interpretation
1. Overall, I am satisfied with how easy it is to use the system		
2. It was simple to use the system.		
3. I can effectively complete my work using this system.		
4. I am able to complete my work this system		
5. I am able to efficiently complete my work using this system.		
6. I feel comfortable using this system.		
7. It was easy to learn to use this system		
8. I believe I became productive using this system. 8		
9. The system gives error messages that clearly tell me how to fix problem.		
10. Whenever I make mistake using the system, I recover easily and quickly.		

11. .It is easy to find the information i needed.		
12. The information provided for the system is easy to understand.		
13. The information is effective in helping me complete the tasks and scenarios.		
14. The organization of information on the system screen is clear.		
15. The interface of this system is pleasant.		
16. I like using the interface of this system.		
17. This system has all the functions and capabilities that I expect it to have.		
18. Overall, I am satisfied with this system.		
Please list two things you like the most in our software 1. 2.		

Based on: Lewis, J"R. (1995) Questionnaires: Psychometric Evaluation and instructions for use. Journal of Human-Computer interaction, 7 :1, 57-78

APPENDIX B

Guide Questions for interview

1. What is your name?
2. What is the name of your business?
3. How do you conduct your Sales System?
4. Do you issue receipts? Do you do it manually or automatically?
5. How about your inventory system?
6. So, all your staffs do inventory count?
7. Do you close your store when you do inventory count?
8. How about your purchase? How do you do it?
9. We observed that you have many products, does each product have its own logbook

10. How many products do you have?
11. If a delivered product is defective, do you still return it?
12. When sales reporting are done?

APPENDIX C

User Guide

A. Accessing the system

Steps: 1. Type username

2. Type user's password

3. Click "Log- in button to continue

Adding Warehouse Stock Steps.

1. Click Add Stock to Warehouse Menu

2. Input the products information

3. Click the "Save" Button

4. Confirmation: "Are you sure you want to add? 'click , 'yes', button to confirm

B. Deleting Products Information

- Steps:
1. Click "Warehouse stock" menu
 2. Select Product in the list
 3. Click "Delete" button

C. Adding Supplier

- Steps:
1. Click ' Add Supplier" menu
 2. Input the supplier information
 3. Click the "Save" button
 4. Confirmation: "Are you sure you want to add ?" click "Yes" button to confirm

D. Editing Supplier Information

- Steps:
1. Click "File" menu
 2. Select "Supplier"
 3. Select supplier in the list
 4. Click the "Edit" button
 5. Confirmation: "Are you sure you want to edit ?" click "Yes" button to confirm.

E. Deleting Supplier information

- Steps:
- 1.) Click "File" menu
 - 2.) Select "Supplier"
 - 3.) Select supplier in the list.
 - 4.) Click the .Delete" button
 - 5.) Confirmation: "Are you sure you want to delete?" click "Yes" button to confirm

F. Warehouse Damage Item Management

Steps.

- 1).Click "File" menu Select "Return Damage"
- 2).Select product in the list
- 3). Input quantity Click. Add' button
4. Confirmation: "Are you sure you want to add ?" click "Yes" button to confirm

H. Warehouse Bad Order Management

Steps: 1. Click "File" menu

2. Select " Return damage"
3. Click "Damage list" link label
4. Select Supplier
5. Select item in the list
- 6, Click "Bad Order' button
- 7.Confirmation: " Bad Order Saved"

I. Damage item Management

Steps:

1. Click "Transaction" menu
2. Select ".POS"
3. Click "Return"
4. Select "Return Damage"
5. Input invoice
6. Select product and input quantity
7. Confirmation: "Are you sure you want to add?" click "Yes" button to confirm.

APPENDIX D

Letter of Intent

March 28,2022

Mr. JOEL A. DAMPOG
CEO Amego Digital Printing Services
Batuan, Bohol

Sir:

Good day!

We, the 4th Year Students of Bachelor of Science in Computer Science of Bohol Island State University Bilar Camus will conduct a System Development project (Thesis) as requirements for graduation for the Degree of Bachelor Science in Computer Science.

In this regard, we would like to ask your good office to allow us to conduct system study base on the point of sales and inventory system of Amego Digital Printing Services.

We assure you that we shall honor secrecy and privacy to all data and information we shall be handling during our data collection which include interview, observation and document review. As we go along with our study, your approval will be a great help to the success of our study.

We anticipate your favorable response regarding this matter.

Thank you very much and more power!

VIODOR, ADELITO

LOCQUINIO, ANALIE

ESITO, JAPHET JAY

BANDOLA, JOHN PETER

Researchers

Noted:

DARREL A. CARDAÑA

Subject Instructor

DENNIS DOMINIC A. CUADRA

Thesis Adviser

Recommended by:

Endorse by;

SHEILA G. TABUNO

Chairperson, DCoS

ARLEN B. GUDMALIN

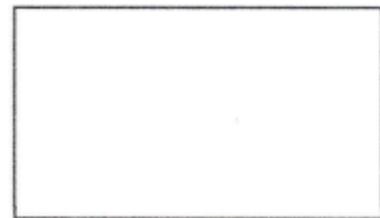
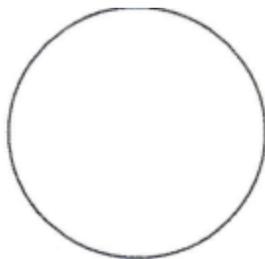
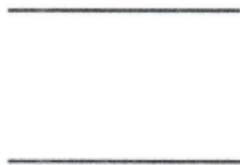
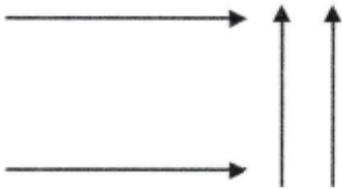
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Approved by:

JOEL A. DAMPOG

CEO Amego Digital Printing Services

APPENDIX E
Modeling Tools



DATA FLOW It is an illustrated straight line with arrows which shows the accumulated among proceeding demands as input and other information as output or movement of the flow of the data into a the system.

DATA STORE

It is an opened-end rectangle which indicates as data storage. Data store is a file in the bubble diagram.

DATA PROCESS

A symbol that describes a part of system that is used for the processing of data into useful information and transform into outputs in the same way

EXTERNAL ENTITY

This referred to a person, group of people and other organization which the system communicates. It indicates the origin of data and its predetermined en

APPENDIX F

LIST OF INPUTS

Field	Fieldname	Type	Width	Description
1	Id	Integer	10	Table ID
2	Usertype	Character	50	User type name
3	Password	Character	50	User Password
4	suppid	Character	50	Supplier ID
5	comname	Character	50	Company Name
6	comaddress	Character	50	Company Address
7	contactperson	Character	50	Contact Person Name
8	Contactnum	Character	50	Contact Number
9	Itemid	Character	50	Product Id
10	Supplier	Character	50	Product supplier name
11	Itemdescription	Character	50	Product name
12	Quantity	Double		Product Quantity
13	Productunit	Character	50	Product Unit
14	Unitprice	Double		Product Price
15	Markup	Double		Mark up Percentage
16	Sellingprice	Double		Selling price
17	Restockingpoint	Double		Re-ordering point
18	Stockarrival	Character	50	Stock-in date
19	Totalamount	Float		Total Amount
20	Date	Character	50	Returned date
21	Invoiceno	Bigint	50	Invoice Number
22	Purchaseddate	Character	50	Sold date
25	Cashreceived	Double		Cash rendered
26	Grandamount	Double		Total amount
27	Tchange	Double		Changed
28	Reorderquantity	Float		Re-order quantity
29	Rdate	Character	50	Re-order date
30	Invoicenum	Bigint	50	Invoice Number
31	Damagequantity	Float		Damage item quantity
32	Creditorname	Character	50	Creditor's name
33	Contactno	Character	50	Contact Number
34	Deposit	Double		Deposit
35	Balance	Double		Total Balance
36	Cdate	Character	50	Credit date

DEVELOPER'S BIODATA**JOHN PETER V. BANDOLA**

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Citizenship : Filipino
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Mother's Name : Precila L. Bandola

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Elementary : Katipunan Elementary School
2006-2012
Secondary : Katipunan National High School
2012-2018
Tertiary : Bohol Island State University-Bilar
2018-2022
Work Experienced : On The Job Training
Amego Digital Printing Services

DEVELOPER'S BIODATA**JAPHET JAY B. ESITO**

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Citizenship : Filipino
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Mother's Name : Maria Jina B. Esito

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2008-2012
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Amego Digital Printing Services

DEVELOPER'S BIODATA**ANALIE L. LOCQUINIO**

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Citizenship : Filipino
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Mother's Name : Neria L. Locquinio

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: Saint Anthony Academy Inc. Carmen, Bohol
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2018-2022
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Buenos Aires Multi-Purpose Hall

DEVELOPER'S BIODATA

Name: **ADELITO D. VIODOR**
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Citizenship : Filipino
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Mother's Name : Delia B. Viodor

**EDUCATIONAL BACKGROUND**

Elementary : Tamboan Elementary School
2006-2012
Secondary : Saint Anthony Academy Carmen
2012-2018
Tertiary : Bohol Island State University-Bilar
2018-2022
Work Experienced : On the Job Training
Amego Digital Printing Services

