**THE DEVELOPMENT OF COMPREHENSIVE WEB-BASED ERP FOR INNOVATING BUSINESS PROCESS IN METRO TRUCK BUILDERS INC. WITH VIRTUAL SHOWCASE INTEGRATION AND DECISION SUPPORT SYSTEM**

A **Capstone Project**

Presented to the Faculty of

Computer Studies Department

**National College of Science and Technology**

**Dasmariñas, Cavite**

In Partial Fulfillment

of the Requirements for the Degree

**Bachelor of Science in Information Technology**

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**May 2024**

**Chapter 1**

**THE PROBLEM AND ITS BACKROUND**

**Introduction**

Technologies are constantly evolving, and people want something new with their ideals and needs. Viewing images is a convenient way to search for products, but a customizable 360 image model helps everyone meet their needs in a web-based system that everyone can access, especially for those who want a customized vehicle.

A web-based system that helps navigate the business process that can be accessed from anywhere without having to go to an office to review the data and information. It allows customization of the vehicle for easy presentation to meet customers' ideals and needs for their vehicle. With this system, it will gradually help Metro Truck Builders Inc. to keep track of the business data and information, satisfy the customer by presenting their customized vehicle and ensure communication for the teams and customers.

**Project Context**

Metro Truck Builders Inc. is embarking on a transformative initiative to modernize its business processes by implementing an Enterprise Resource Planning (ERP) system, marking a critical step in the company's journey to operational efficiency and improved customer engagement. By centralizing data, automating tasks and improving interdepartmental communication channels, Metro Truck Builders aims to streamline its operations and improve the overall customer experience. Additionally, integrating visual storefronts into the ERP system promises to revolutionize customer interactions, providing immersive experiences and showcasing the company's products and capabilities in unprecedented detail. This holistic approach to business transformation underscores Metro Truck Builders' commitment to innovation and continuous improvement, positioning the company for sustainable growth and competitiveness in the dynamic market landscape. The key modules of this ERP framework include Project Management, which enables comprehensive project planning, execution and monitoring; Inventory management, optimization of control and procurement processes; and Customer Relationship Management (CRM), with a focus on improving customer interactions and fostering long-term relationships through centralized data management and personalized marketing initiatives.

**Statement of the Problem**

This study aims to develop a web-based system that will help manage business data and information about their current situation and enable the presentation of products.

Specifically, it will answer the following:

1. How does the system meet the company's process requirements?

2. Is the proposed system flow accurate?

3. What development methodology is used in this project?

**Objectives of the Study**

The main objective of this study is to develop a web-based system that reduces the manual work of the company and is helpful and reliable for the company.

Specifically, this study will:

1. Develop a system that supports administrative data, the ordering process, and team and customer communication.

2. The system will go through a testing phase in which to test its accuracy, flexibility, efficiency and usability will be tested to avoid errors.

3. The waterfall methodology will be used in the development of the system.

**Scope and Limitations of the Study**

This study focuses on the implementation of a web-based system tailored to the needs of both administrative and customer users. The system allows users to access and manage their data efficiently, with different roles provided for administrator and customer users. Admin users, consisting of employees and owners, enjoy comprehensive control over system operations, while client users benefit from features such as registration, vehicle customization, order placement, communication with employees, and transaction viewing.

Despite its robust features, the system has several limitations. The 360-degree image model provided for vehicle customization is static, although customers can specify desired customizations, with the estimated price adjusted accordingly. Additionally, the system lacks online consultation support for vehicle malfunctions, so customers are instead directed to make appointments managed solely by the vehicle consultation company. These constraints shape the boundaries within which the system operates and guide stakeholders in their interactions and expectations.

**Significance of the Study**

This study will benefit the following:

**Metro Truck Builders Inc. -**Implementation of the findings of this study will streamline day-to-day management and transactions and increase operational efficiency.

**The Owners**-Access to comprehensive tracking mechanisms enables owners to monitor the company’s performance and make informed decisions.

**The Customers *-*** Improved transaction processes will provide customers with a smoother and more convenient experience.

**The Future Researchers *-*** The Lessons learned will serve as a valuable resource for future academic studies and research endeavours.

**Definition of Terms**

This study operationally defined the following:

**ERP.** Stands for Enterprise Resource Planning, a software that is commonly used by small-medium-large enterprises. It is a unified software system that is designed to manage all business process functions, from finance, human resources, supply chain management and everything in organization.

**Virtual Showcase.** In the most common sense, a virtual showcase is a digital space used to exhibit products, information, or artwork. This can be a website, a mobile app, or even a specific section within a larger online platform. Virtual showcases allow for a more interactive and engaging experience compared to traditional physical showcases. They can include features like 360-degree product views, detailed information panels, and even embedded videos.

**Decision Support System.** A decision support system (DSS) is a computer program that analyses business data to identify trends and generate insights, helping users make better informed decisions.

**Chapter 2**

**REVIEW OF RELATED LITERATURE AND STUDIES**

This chapter presents the relevant literature and studies that the researcher considered in strengthening the importance of the study. It also presents the synthesis of the system to fully understand the research for better comprehension of the study.

**Local Literature**

According to National Statistics Office (Civil Registry System) or the NSO-CRS (1995) NSO had already foreseen the increase in the demand for its services. NSO also realized that in order to respond to that future need and accomplish its vision of improving the quality of life of the Filipinos through the generation of vital statistics critical to the implementation of development policies and programs, computerization must be undertaken to improve the civil registry system and the organization’s computing capabilities. In early 2000, the demand for the issuance, authentication, and certification of civil registry documents has already increased to an average of 10,000 to 12,000 requests daily. This situation is compounded by the burgeoning volume of civil registry documents that must be handled by NSO, and of statistical reports required from its office by different government institutions for their development programs.

According to The Civil Register System (CRS) is similar to the Centralized Baptismal Certification and Record Management System through its goals. The goal of the National Statistics Office (NSO) is to automate their transactions through the CRS particularly in issuing authenticated birth, marriage and burial certificates. Likewise, the proposed Centralized Baptismal Certification and Record Management System for the Diocese of Bayombong possess the same goal in automating the baptismal records of the Catholic devotees. Both are application based and is working through a client-server situation.

According to Villafania (2007) reported that in the Philippines, the Commission on Higher Education (CHED) has initiated programs to secure academic records. CHED and the National Printing Office (NPO) have signed a memorandum of agreement (MOA) on the Securitization of Academic Records for college and university graduates beginning school year 2007. The move is part of CHED’s drive to stop the use of fake diplomas and school records. CHED former chairman Carlito Puno said the MOA aims to secure authenticity of academic records such as diplomas, transcript of records and special orders from all colleges and universities in the Philippines. Thus, protect the image and integrity of Filipino College students to potential employers both locally and internationally. Puno emphasized further that the MOA would boost the competitive edge of the graduates in the labor market for it will ensure the integrity of credentials of the graduates while protecting the reputation of higher institutions of learning.

**Foreign Literature**

According to Harwood (2017), complexity, uncertainty, and a long timeframe characterize the ERP implementation cycle. It is a multi-disciplinary effort that focuses on people and issues that affect business. Enterprise Resource Planning (ERP) is a company-wide information system that is integrated. It has the potential to meet many of the information needs of busy personnel, in addition to handling many of the transactions found within a business. It has the potential to give a company a competitive advantage if it is used correctly.

According to Mei Shan-Shan, Shan Chun, and Xue Jing-Feng (2018) in the rapid development of society today, along with the popularization of computer technology and the extensive application of the Internet, all walks of life are applying the computer management system to their own enterprises. As a member of the service industry, the hotel industry is also developing rapidly. To integrate the rapid development of the computer network and hotel industry, to provide better service to consumers and to improve the management efficiency of hotels, hotel room information management systems have emerged. This article describes a management platform for hotel room's online booking and guest information using kendo UI front-end framework design. Using SSM (spring, Spring MVC, MyBatis) framework to deal with background programs.

According to BrandLab Fashion (2022), BrandLab offers a unique solution by reshaping physical showrooms in 3D digital format, integrating real-time communication and live ordering facilities. It provides continuity of a brand’s DNA and can custom build their virtual showroom using existing static imagery to recreate their brick and mortal showroom space.

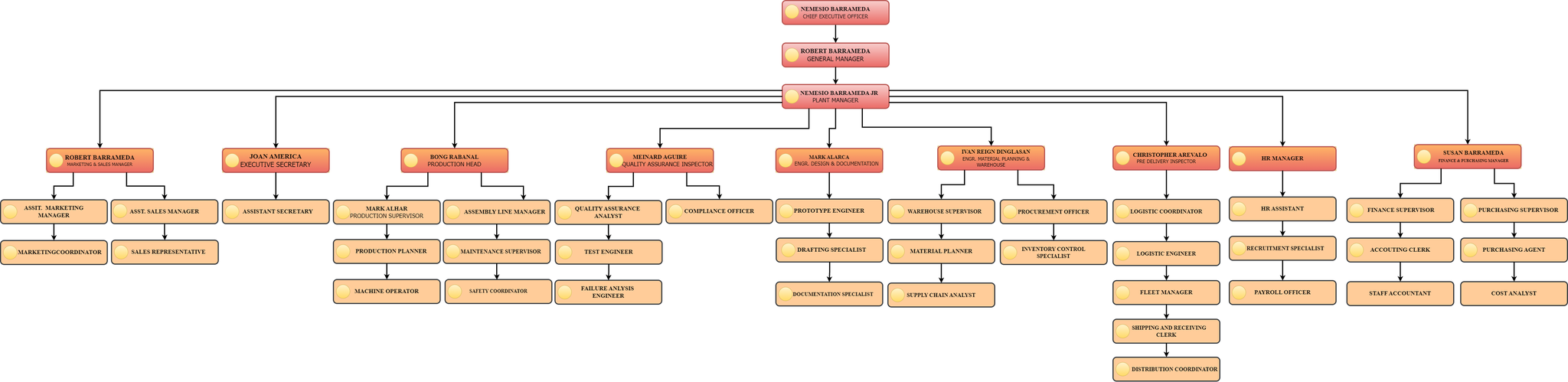
**Local Studies**

According to Aquino (2011), Importance of computer application is increasing day by day. In the latest decades of the millennium winning organization are those which are willing to integrate business strategy and computer information technology in plying their respective trades. The use of computer information technology results for them to be able to develop products fast and make decisions fast, ability to have fluid organization structures, able to cope with the demanding work force and external environment by the rapid development of innovative approaches and lastly using information system confirms the company’s mission vision. The school use the information systems in the way of implementing a scheduling system. This results for them to search more accurately and easy.

**Chapter 3**

**TECHNICAL BACKGROUND**

**Organizational Chart**



***Figure 1.*** *Organizational Chart of Metro Truck Builders Inc.*

Figure 1 shows the organizational chart of the client – Metro Truck Builders Inc. It consists of all the department and its head managers that are in charge of the operation of their respective departments. Starting from the Executives down to every department the organization has such as: Marketing, Sales, Production, Quality & Logistics, Supply Chain Management, Warehouse, Human Resources, Finance, and Purchasing.