ON-CARE: A Web-Based Ordering System with Customer-Centric Supply Chain Analytics for Neo Care Philippines

A Project

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# CHAPTER 1

## Introduction

The business environment in the global economy has benefited so much from the Internet (Irkinovich, 2022). The Internet has provided consumers with a new medium for electronic commerce. Purchasing of consumer products or services that is done on-line is the preferred means of today’s generation (Iriani & Andjarwati, 2020). The ordering system takes the actual order, details the transaction process until the product arrives to the customer (Martinez et. al., 2019). The part on how a certain product arrives to the customer is the part of the supply chain. It is a system of organizations, people, activities, information, and resources involved in moving a product or service from supplier to customer (Azzi et. al., 2019). Using the transactional data made by the customer, a prediction can be made on what other product or service a customer needs (Boone et. al., 2019; Van Nguyen et. al., 2020).

The majority of inventory and order administration is done manually with pen and paper, making file maintenance difficult. Importing things from other countries is a complicated process that necessitates extensive analysis before a product is imported. And it is up to the manager to make decisions concerning product imports and distribution. The availability of a specific pharmaceutical in hospitals and drugstores is one of the company's primary considerations. If one of the company's client drugstores does not have a specific type of medicine available when it is needed, the drugstore may lose a customer, which may impact on the company's sales.

Managing a company that has clients from all over the Philippines and abroad is difficult, but with the help of a system, some of the processes of the company can be lessened and therefore the company can focus on other business aspects. Thus “ON-CARE: A Web-Based Ordering System with Customer-Centric Supply Chain Analytics for Neo Care Philippines” is proposed. A software development approach known as "Agile Methodology" will be employed as the development strategy to help the researcher reach their objectives.

Objective of the Study

General Objective

The main objective of this project is to develop a web-based system called “ON-CARE: A Web-Based Ordering System with Customer-Centric Supply Chain Analytics for Neo Care Philippines”.

Specific Objectives

1. Develop a time series forecasting model using Auto ARIMA based on Neo Care’s transactional sales data.
2. Evaluate the model using AIC, ACF, PACF, RMSE, MAE, and MAPE.
3. Forecast optimal stock levels for essential medications using the ARIMA model.
4. Visualize forecasted demand trends for managerial decision-making.
5. Assess system quality using ISO 9126 software evaluation criteria.

Significance of the Study

The project entitled “ON-CARE: A Web-Based Ordering System with Customer-Centric Supply Chain Analytics for Neo Care Philippines” is conducted to assist Neo Care Philippines in monitoring online transaction and providing a sales report that can be used for future business decision making.

The project aims to implement a Web-based system for managing product orders and as a company website. Thus, the system will provide the following:

Neo Care Philippines. The system will also be the company’s official website. Having a website provides a sense of integrity in the internet world which can add up to the value of the business. This system can also help the company in understanding the buying habits of the customer. Through understanding the needs of the customer, the company will have a better customer relationship, thus strengthening the company through improved revenues.

Manager. The system provides a sales report based on the customer transactional data using predictive analytics that can be used for decision making. The reports provided by the system can serve as a basis for the manager in deciding critical issues with regards to products and inventory management. The system can also help the manager have a better understanding of the flow of the products within the company and the market.

Staff. The system will provide a user-friendly interface wherein the staff can monitor the transaction made by the client and provide an easy way of recording the transactional data made by the customer and the company. The system can provide easy access of the reports with regards to previous and current transactions for verification and other purposes. The system can help the staff in record keeping and backup management. The system can help in lessen the use of pen and paper in recording the transactions made by the sales agent.

Sales Agent. The system can help in keeping a record of the transactions made through the system. The sales agent can also view some of the reports made by the system with regard to the viable product they can offer in their respective area. The system can provide information on their previous and current orders.

Client. The website will serve as a brochure of the company to the client showcasing all the products that the company can offer and providing information about certain products for the customer. The website can provide updates on new products, promos and other related business features that the company can offer.

Scope and Delimitations

The project entitled “ON-CARE: A Web-Based Ordering System with Customer-Centric Supply Chain Analytics for Neo Care Philippines” is an ordering system that has file management, order management, and report generation tool. The supply chain of the company can be optimized through the reports generated by the system. This report may help the company in deciding the number of products to be imported to a certain location within their area of operations thus adding high availability of products and reliability for the customers in the area.

This project aims to help the company in building digital integrity through a website and help in decision making through the reports generated by the system. The system will be implemented for one month within the Luzon area for testing purposes due to the large impact it may have on the current operations of the company. Further testing of the system is a must before it can be fully integrated into the company. Only over-the-counter medicine can be purchased online, which is subject to the terms of the company. The transactional time series data from the customer through the sales agent is the only data that will be analyzed by the system to produce the reports.

The study will use agile software development methodology to achieve its objectives and the schedule to complete the project is in December 2025. After completion, turnover for the company leads to a series of testing for three months before it can be fully integrated.

The limitations of the system are as follows; the system is not concerned with the ways on how the company delivers the products to the customers, absence of internet connection can hinder the system in producing the needed reports, and how the company can assemble the order with regards to time constraints. The Stock and Inventory report is the only report that the system can produce.