

Bantayan Island Online Wet Market: A Community-Driven Digital Marketplace for Fresh Seafood and Local Produce

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Abstract:

This study focuses on the development of the **Bantayan Island Online Wet Market System**, a web-based platform designed to help seafood vendors sell their products online and make it easier for customers to purchase seafood products. The system allows vendors to display available products while enabling customers to browse and order conveniently without traveling to the market. The system was developed using the **Rapid Application Development (RAD) model**, which includes requirement planning, prototype cycles, system construction, testing, and implementation. The system was evaluated by three IT experts using a software quality model and survey questionnaires. The evaluation results showed high ratings for usability, functionality, and reliability. Overall, the system proved to be an effective and user-friendly tool that supports vendors in selling seafood products and allows customers to conveniently order products online.

Keywords — Usability, Reliability, Functionality, E-commerce.

I. INTRODUCTION

Wet markets, commonly known as *palengke*, are traditional marketplaces where fresh products such as seafood, meat, and vegetables are sold. These markets are essential for local communities and provide livelihood opportunities for small vendors.

However, seafood vendors in Bantayan Island face challenges in selling their products because their selling locations are often unfamiliar to many customers. Customers also have difficulty knowing

which seafood products are available from specific vendors.

To address these problems, this study proposes an online wet market system that allows vendors to display their seafood products online. This system helps vendors reach more customers and allows customers to easily view and purchase available products without needing to visit the physical market.

In addition, the system will include functionalities such as real-time product availability updates, search and filter options for

different types of seafood, vendor location mapping, and an ordering system with delivery or pick-up options. It will also feature a notification system to inform customers about newly available products and promotions, making the buying process more convenient and efficient.

II. OBJECTIVE OF THE STUDY

The Objective of the Study

General Objectives

This study aims to develop a Bantayan Island Online Wet Market System.

Specifically, it aims to:

1. Design a dashboard for:
 - a. Admin can see the most ordered vendors
 - b. Vendors can see or monitor their daily sales and total products
 - c. Admin can receive vendor's approval
2. Design a system where the vendor can create, read, update, and delete product information and location.
3. Design a system where customer can create, read, update and order product and choose what order type they want.
4. Display vendors product online
5. Be accessible online
6. Developed a Mobile Application in Apache Cordova Platform
7. The quality of the developed system based on **ISO/IEC 25010:2011** Systems and Software Quality Requirements and Evaluation (SQuaRE) Quality Model.

8. Determine the usability of the developed system based on the following criteria: Usefulness, Satisfaction, Ease of Use and Learning.

Scopes

This study mainly focuses on the Bantayan Island Online Wet Market System development process.

Bantayan Island. A location where Seafood vendors sale their products.

Customer. Under the customers, customers can view seafood products details.

Categories. This portion of the system allows the vendor to add, edit and view the product categories.

Fish/Seashells. One of the categories that can be sold, any kind of fish and shells you can choose and order online.

Meat. A pound of chopped meat that are also sale by the seafood vendors.

Products. This section of the system allows the vendor to

add products, add a description/product name, location, per kilo, the original price, and the sell price user can also edit or delete the product.

Sales. This section of the system includes their daily sales.

Services. Deliver and Fick up would be the choices of services.

Vegetables. Any veggies products where customer can buy or order through this system.

Vendor. This section of the system allows the vendor to Create, Read, Update and Delete and display their seafood products.

Limitations

This system is intended in 3 Municipalities of Bantayan Island where street seafood vendors are located. Helping customers view information like their seafood products, locations, price per kilo and etc. paraphrase this objective of the study for our research

III. OBJECTIVE OF THE STUDY

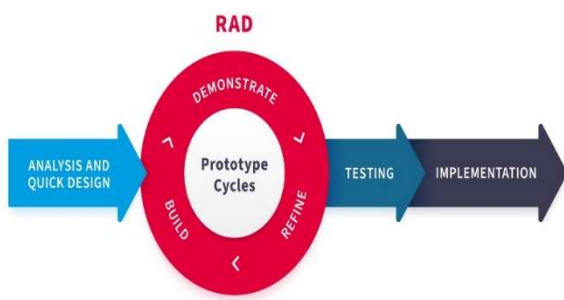
Research Design

This study used a **developmental research approach** to design and implement the Bantayan Island Online Wet Market System.

Software Development Model

The system was developed using the **Rapid Application Development (RAD) model**, which focuses on fast system development through continuous user feedback.

Figure 1. illustrates the process of Rapid Application and Development



1. Requirement Planning

In this phase, researchers identified the problems faced by vendors and defined the requirements of the online wet market system. The objectives and goals of the system were established based on the needs of vendors and customers.

2. Prototype Cycles (Demonstration, Refinement, and Development)

The system prototype was created and demonstrated to vendors and potential users. Feedback from users helped identify missing features and improvements, which were then refined during development.

3. Design Construction and Testing

The system was tested to ensure that its

features function properly. Vendors and customers were allowed to explore the system and provide feedback regarding usability and performance.

4. Implementation and Release

The final version of the system was released and users were trained on how to use the platform. Continuous monitoring and maintenance were recommended to ensure system performance.

System Components

The system involves three main users:

- **Admin** – manages vendors and monitors sales
- **Vendors** – upload and sell seafood products
- **Customers** – browse and order products online

The system includes features such as product management, vendor approval, sales monitoring, and online ordering.

IV. RESULTS

The Bantayan Island Online Wet Market System was evaluated by three information technology experts using survey questionnaires based on software quality standards. The evaluation focused on different aspects of the system, including functionality, usability, reliability, and overall performance.

The results showed that the system performed well across most evaluation criteria. The dashboard design received high ratings because it allows administrators to easily monitor vendor activity, product listings, and sales information. Experts also noted that the system effectively supports basic operations such as adding, editing, and deleting product information.

The platform's ability to display seafood products online was also rated positively. Vendors can upload product details, which customers can easily view through the system interface. The ordering feature allows customers to select products and place orders in a simple and convenient manner.

In terms of accessibility, the system was rated very satisfactory. Users were able to access the platform through a web browser without experiencing significant difficulties. The

responsiveness of the system on mobile devices also received positive feedback.

Overall, the system obtained an average evaluation score of approximately 4.9, indicating that the experts considered the platform effective and user-friendly.

TABLE I
SURVEY QUESTIONNAIRE RESULT

CRITERIA	MEAN	VERBAL INTERPRETATION
The system can show the top vendors with most sales.	5	EXCELLENT
The system can allow vendors to monitor their daily sales and total products of vendors.	5	EXCELLENT
The system can receive approval for the admin and the system can get commission from the vendor.	5	EXCELLENT
TOTAL	5	EXCELLENT

CRITERIA	MEAN	VERBAL INTERPRETATION
The system can create, read, update, and delete product information and location in the vendor portal.	5	EXCELLENT
TOTAL	5	EXCELLENT

CRITERIA	MEAN	VERBAL INTERPRETATION
The system can create, read, update, and order product in the customer portal.	5	EXCELLENT
I can use the system effectively to order products.	4.7	VERY SATISFACTORY
I can use the system effectively in choosing what order type I want.	5	EXCELLENT
TOTAL	4.9	VERY SATISFACTORY

VI. DISCUSSION

The findings of this study demonstrate that integrating digital technology into traditional marketplaces can significantly improve the efficiency of buying and selling processes. The Bantayan Island Online Wet Market System provides vendors with an additional platform for promoting their seafood products while offering customers a convenient method of accessing fresh goods.

The positive evaluation results suggest that the system successfully addresses some of the challenges faced by seafood vendors, particularly the difficulty of reaching potential customers. By

allowing vendors to display their products online, the platform expands their market visibility and improves opportunities for sales.

At the same time, the system provides benefits for customers by allowing them to check product availability and place orders without traveling to the market. This convenience can save time and make purchasing seafood products easier for residents.

The results also highlight the importance of user-friendly system design. Features such as clear product displays, easy navigation, and accessible dashboards contributed to the system's positive evaluation.

Overall, the study demonstrates that online market systems can serve as valuable tools for supporting local businesses. With further improvements and broader implementation, similar platforms could help strengthen the connection between traditional markets and modern digital commerce.

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