

POLYBULETIN TANESIA



**Essential of Coconut Shell Liquid Smoke
as a Natural Preservative for Tofu
A Study of Organoleptic Properties, Moisture Content
and Ash Content**

**TETAP
BERPRESTASI**



Implementation of E-Commerce Based on Website for Eel Seed in Lebak Banten


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Abstract— Banten Eel Farmers Group is a group of eel seed catcher communities on the coast of Sukamanah Village, Lebak Regency, Banten. In effort to sell their catch, they are constrained by promotion issues, marketing is not yet open, only relying on word of mouth, this has resulted in many cultivators who do not know the existence of eel seeds in Sukamanah Village on the other hand, many eel seeds that have been caught have died because they are not properly maintained. Until now, the Banten Eel Farmers Group has only provided a simple place to store the catch. From this background, this study aims to create an e-commerce website that has marketing and promotion features, the latest news about eels and knowing the shipping status. Researchers use Business Model Canvas (BMC) to analyze data collected through interviews and observations. The information obtained is then used to analyze the e-commerce system, implement search engine optimization, and carry out the Fishbone marketing strategy, namely product, price, place and promotion (4P). The results of this study produced an e-commerce website design that has several functions such as marketing and selling products and services offered through the website and is also integrated with social media such as Instagram andWhatsapps.

Keywords—Content Management System, E-commerce, WordPress, Fishbone, Eels

I. INTRODUCTION

Currently, the development of information technology is very rapid and tremendous, including in Indonesia. The existence of technology is basically to make human life easier. This information technology has been widely used to process data, analyze data to produce relevant, fast, clear and accurate data or information (Alexander Jeremy Lorenzo, 2023). Information technology has been widely used in government agencies or private companies and other organizations. The development of this information technology has also opened a new chapter in society, including in the business world (Atang Saepudin, 2021), (Wiwin Windihastuty, 2018) now entrepreneurs are utilizing this information technology to develop their businesses.

The use of e-commerce does not only cover trade to meet industry and basic needs but also includes livestock seeds. Indonesia has at least 7 species of eel (*Anguilla Sp.*)

spread along the south coast. Japan, known as the world's largest consumer of eels, open up opportunities for eel cultivation in Indonesia (Wiwin Windihastuty, 2018). The complexity of maintenance methods and high export standards as well as the inexperience of farmers regarding eel cultivation procedures, make Indonesian eels difficult to be accepted by the international market, so that the enormous marine potential is only managed in a small part. The problems faced by eel seed catchers and eel cultivators (Windihastuty, 2022) are Low purchasing power for eel seeds, most buyers are middlemen who buy at low prices. hen low market demand, due to lack of information about eel seed producing areas and the international market is not yet open.

Based on the problems obtained from the results of the interviews conducted (Nana Saharna, 2020). The Banten Sidat Group needs a digital platform as a medium to promote the eel seeds from their responses also as an online sales medium, which facilitates transactions that can be accessed anytime and anywhere by admins and customers, with the hope of being able to increase customers (Handayani, 2028), facilitate online marketing, provide easy access to product information to customers, to the scope of sales and increase potential customers.

Specifically, the Banten eel farmer group needs a marketing media that can promote and inform the availability of eel seeds. These needs can be met by building an e-commerce system for eel seed sales consisting of marketing processes, purchasing processes, payment processes and shipping processes as well as reporting (Wiwin Windihastuty, 2018). In addition, e-commerce will be equipped with the implementation of Search Engine Optimizer (SEO) while the implementation of marketing strategies will use the Business Model Canvas which includes promotion, sales, purchasing and payment (4P) (Ahmad Arifin, 2019).

The purpose of this research is to build an eel seed e-commerce that can implement marketing and promotion features and display ease of shopping and service services that can increase the number of customers. In addition (Fifit Alfiah, 2020), it can implement features that can be used to find out shipping status information and also contain the latest information about the eel business from eel seed producing areas, eel cultivators to eel processed products (Ahadiyah, 2023).

The website will be tested to see the success of the e-commerce implementation in the Banten eel farmer group,

whether it can display information about the details of the catch and to find out whether the website can be optimal for promoting eel seeds from the responses (Nana Saharna, 2020)

II. METHODS

The structure of the research design plan is accompanied by research methods and the tools and materials that will be used in carrying out this research. The research stages are the stages that will be carried out in the research to make it easier for the author before going to a further process in conducting the research (Atang Saepudin, 2021). The stages that will be carried out in the research are as follows

A. Frameworks

The framework of thinking is the basis of thinking of the research that is compiled based on facts and observation results and literature studies that are interrelated with each other regarding various factors that have been identified as important problems (Sri Ayem, 2024). In developing the research stages to be implemented, a conceptual framework was created as a guideline for the research implementation, as shown in Figure 1.

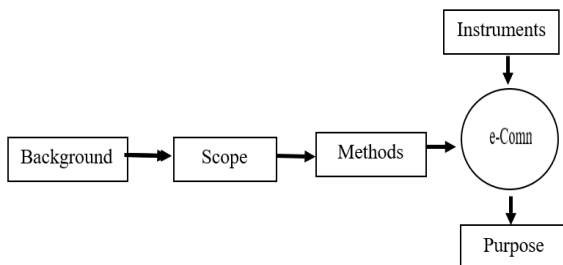


Figure 1. Framework

B. Identification

Research Approach and Type This research uses a Research and Development (R&D) approach that aims to develop and test the effectiveness of an e-commerce system for web-based fish sales. The system development model used refers to the prototyping method, which is an iterative approach that allows system development through a series of tests and improvements based on user feedback.

System Development Model The prototyping model consists of the following stages:

1. Identification of User Needs: Through observation and interviews with fishermen, collectors, market traders, and end consumers.
2. Interface Design (UI/UX): Initial system design based on the first stage findings, using tools such as Figma.
3. Initial Prototype Creation: Development of a web-based minimum viable product (MVP).
4. User Testing: Initial evaluation with target users to identify usability issues.
5. Revision and Iteration: System refinement based on test results.

6. Implementation and Field Testing: Implementation of the system on a limited scale in a sampled user community.

The techniques are the process of processing raw data into useful information that can be used for certain purposes (Affan, 2022). Data analysis techniques are arranged systematically. Data collection techniques are generated from interviews, field notes and documentation by organizing data into categories and then describing them into units and making conclusions.

C. Data Collecting

This stage is carried out through the observation process of data in the field to obtain the criteria or factors that customers consider in making purchases (Ikhsan Kamil, 2024). In addition, the author also conducted an interview with the Head of the Banten eel group to obtain more detailed information.

1. Interview

Is a data collection technique with questions and answers process carried out between the researcher and the owner of the Banten Eel Group named Hasan Basri to obtain information about the Banten Eel Group.

2. Observation

Is a technique used to collect information through a direct/first-hand data collection process, through observation.

3. Questionnaire

Questionnaire is needed to Collect user perceptions and preferences towards e-commerce platforms.

4. Literature Study

The purpose of the literature study is to Explore references on e-commerce systems and digitalization trends of fisheries

D. System Analysis

The technique used for the analysis and design of information systems is the Fishbone Diagram to analyze cause and effect and design information systems (Suryani, 2028) with the following steps:

1. Identifying problem factors
2. Finding possible causes of each factor
3. Analyzing the results of the diagrams that have been created
4. System Requirement Analysis is needed to formulate system features and structure
5. Usability Testing: Using the System Usability Scale (SUS) instrument to assess ease of use.
6. Web Performance Testing: Evaluating the speed and technical performance of the system.
7. SWOT Analysis: Assessing the strengths, weaknesses, opportunities, and threats of the e-commerce system.
8. Digital Marketing and SEO Strategy Analysis: Assess the effectiveness of using SEO (Search Engine Optimization) and digital marketing strategies in increasing the visibility of e-commerce sites and attracting more users. This technique includes the use of keywords, product page

optimization, social media integration, and the use of Google Analytics and Google Search Console for evaluation.

- Testing: if needed to test the effectiveness of the interface design or features.

E. Marketing Strategies

The marketing strategy technique used is a collection of initial components for a business, as well as how to satisfy customers through a process while still paying attention to all aspects and objectives related to the interests of the company (Sulianta, 2024). The marketing strategy consists, namely:

- Product**
The products offered by the Banten Sidat Group are eel seeds.
- Price**
The prices offered by the Banten Eel Group for the products and services sold can be classified as cheap.
- Place**
Currently, Banten Sidat Group sells both online and offline. Online, Banten Sidat Group sells through several digital marketplaces.
- Promotion**
Banten Eel Group conducted several promotions through social media and sales promotions.

F. Design

This research can be defined as a strategy chosen by researchers to comprehensively integrate research components in a logical and systematic way to discuss and analyze what is the focus of the research (Didik Aribowo, 2022). Design model that will be used in making a web-based promotional information system using system modeling tools in the form of:

- Logical Design which includes Context Diagram, Data Flow Diagram and Flowchart
- Physical Design, includes Technology design in this stage, the researcher will create a technology design that will be used in the e-commerce website system, which includes computer technology which includes hardware, software, user (brain ware) and computer network technology and communication and Web Design

Designing research requires strategy. The research strategy as a system design is illustrated in Figure 2.

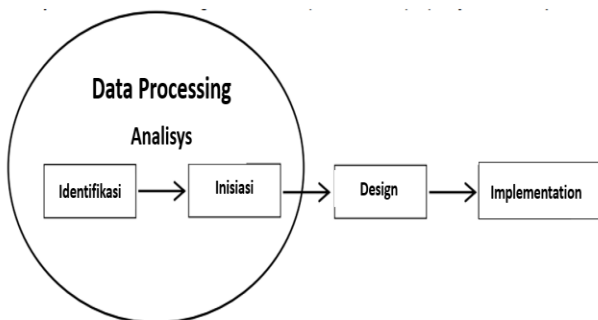


Figure 2. System Design

The research design strategy represents a description of the system to be built. The system strategy is described in tabular form, as shown in Table 1.

Tabel 1. Research Steps

Description	
Stage 1	: Starts
Stage 2	: Conduct problem identification on site.
Stage 3	: Problem formulation, formulating problems obtained from field studies.
Stage 4	: Conduct proposed analysis of the current system.
Stage 5	: Data collection, collecting the required data.
Stage 6	: Design of proposed E-Commerce running system
Stage 7	: Implementation of the proposed E-Commerce running system
Stage 8	: Implementation of SEO on the proposed E-Commerce running system
Stage 9	: Finish

G. Strategi SEO

The SEO strategies used in this study are as follows:

- Keyword research**
The author conducted keyword research to find out keywords that are relevant to the products and services offered by the Banten Sidat Group. Use tools like Google Keyword Planner or SEMrush to find keywords that are popular and have a reasonable level of competition.
- Page Optimisation**
After determining the relevant keywords, the author optimizes the Banten Sidat Group website page. This is done by ensuring that the keywords are present in the page title, URL, meta description tag, and in the page content. However, the author avoids excessive use of keywords (keyword stuffing), as this can have a negative impact on the website's ranking.
- Figure Optimisation**
The author ensures that the product images displayed on the Banten Sidat Group website have relevant descriptions and use alt attributes that can be read by search engines. This helps in increasing the visibility of the website in image search results.
- Analytics and Monitoring**
Authors use analytics tools like Google Analytics to track and analyze website performance. Authors pay attention to metrics like organic traffic, keywords that drive visitors, and conversion rates. With good monitoring, authors can identify areas for improvement and adjust SEO strategies.

H. Marketing Strategy

The marketing strategy used by the author in this study is the 4P strategy. Here the author will only discuss Price and Promotion,

- Price**
Banten Eel Group sets a relatively cheap price so that it affects sales. In addition, Banten Eel Group also

holds discounts to make customers more interested in the products offered

2. Promotion

Promotion is done through social media, such as Instagram and Facebook. Uploading posts containing information about the product.

III. DISCUSSION AND RESULT

A. Business Process Analysis

Business process analysis is an effort to study the business processes that exist within an organization or several organizations. In this study, the analysis was conducted on the Banten Sidat Group business entity. The following is a picture of the results of the business process analysis of the Banten Sidat Group business entity.

The business process begins with farmers directly collecting eel seeds from river estuaries. These seeds are collected and then sold to farmers. Marketing, which was initially based on word of mouth, is now using digital sales channels, in this case e-commerce, to reach a wider market. The system manages these sales, from providing information on eel seed availability and prices, which frequently change depending on availability, to delivery. The e-commerce business process analysis of eel seed sales at the Banten Sidat Group is illustrated with a rich picture, as shown in Figure 3.

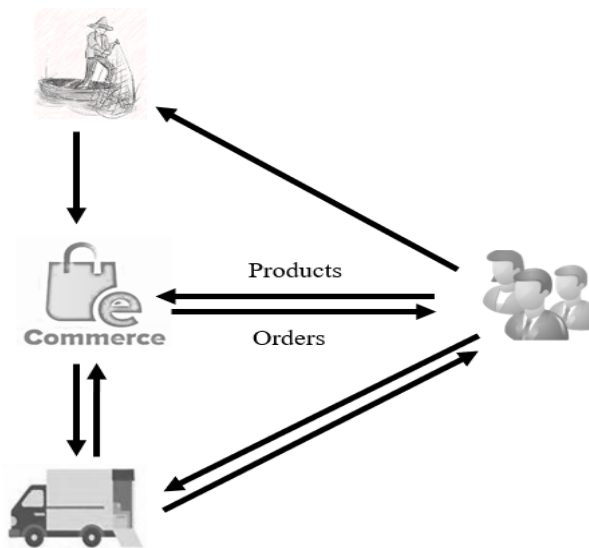


Figure 3. Process Business Analysis

B. Output Analysis

Input Data is needed in conducting the analysis. Input data is in the form of sales and purchase documents in the Output Analysis of Banten Sidat Group. Output data is a document used as output or a document that will be used as information.

Need to reflect the demographic realities of potential users such as: fishermen, collectors, traditional market traders, households, small restaurants, to modern consumers. The following is an in-depth analysis based on two main dimensions: usability and accessibility.

1. Usability (Ease of Use)

a. Simple and Intuitive Navigation

Users with low digital literacy often find complex menus and technical terms confusing.

Solution:

- a.1 Use icon-based and image-driven navigation
- a.2 Offer language options (local language dialects).
- a.1 Prominent, simplified search bar with suggestions.

b. Streamlined Ordering Process

First-time users may feel overwhelmed by multi-step checkout or mandatory login.

Solution:

- b.1 Enable guest checkout without needing to register.
- b.2 Use clear, action-oriented buttons
- b.3 Step by step visual indicators for order progress.

2. Accessibility (Reaching Users with Diverse Abilities and Literacy Levels)

a. Catering to Different Digital Literacy Levels

Examples of target users:

- a.1 Fishermen: Basic phone usage, limited form-filling skills.
- a.2 Housewives: Familiar with WhatsApp/Facebook, not comfortable with login systems.

Solution:

- a.2.1 Mobile-first responsive design.
- a.2.2 Integrate WhatsApp-based login or simplified ordering.
- a.2.3 Add short video tutorials in local language showing how to place orders.

b. Visual and Color Accessibility

- b.1 Ensure strong color contrast for users with low vision or elderly users.
- b.2 Avoid placing key actions like “Cancel” and “Buy” using similar colors

c. Low-Bandwidth Compatibility

Coastal or rural users may have unstable internet connections.

Solution:

- c.1 Optimize site for low-data use.
- c.2 Create a lite version with minimal animations or assets.

An effective fish-selling e-commerce platform must be digitally inclusive, mobile-friendly and intuitively designed to serve users from fishermen to modern consumers. Tailoring for various literacy levels ensures broader adoption and better user satisfaction.

C. Results of E-Commerce Implementation

1. Impact on Sellers (Fishermen & Collectors)

- a. Wider market access: Sellers no longer depend on local markets or middlemen.
- b. Increased income: With transparent prices and no intermediaries, profit margins increase.

- c. Time efficiency: Transaction, promotion, and distribution processes are more structured and faster.
2. Convenience for Buyers
 - a. Ease of access: Buyers can order fresh fish directly from fishermen at any time.
 - b. Complete information: Product descriptions, prices, shipping methods, and customer reviews are available.
 - c. Increased trust: Order tracking features, rating systems, and price transparency are available.
3. By using SEO & Digital Marketing Strategy, it is expected that visitors will increase. To maximize the sales of eel seed websites, effective marketing is required. Websites need to be supported by digital marketing strategies. One reliable marketing tool is SEO, or Search Engine Optimization. SEO is the practice of optimizing content quality from various angles so that a website appears in potential search results when visitors search for specific terms in search engines. On the other hand, SEO is also a powerful and cost-effective marketing strategy to help you drive more traffic to your content and increase transaction volume. Expected predictions result are shown in Table 2.

Table 2. Result

Aspect	Before	After
Daily Traffic	± 5 visitors	± 50 visitors
Google Ranking (keyword: "glass eel")	Page 4	Page 1
Average Visit Time	30 seconds	2 minutes
Bounce Rate	75%	42%
Conversion Rate (visits to purchases)	1.2%	5%

4. User Feedback

The use of ecommerce is expected to get a good assessment from customers. All information and other terms and conditions are well documented on the website. The website also facilitates questions and suggestions from users, both sellers and buyers, in the form of feedback. Predicted customer feedback is shown in Table 3.

Table 3. Feedback

Aspect	Average Rating (Scale 0-10)
Ease of Navigation	8
System Speed	7
Experience Satisfaction	8
Trust in System	9

5. Technical System Performance

- a. Load time: on average
- b. Mobile Responsiveness: 100% compatible on Android and iOS devices.
- c. Uptime: 99.9% during testing.

This ecommerce has not run as expected, the results are obtained based on the predicted use of the ecommerce. It is hoped that ecommerce can run according to the expected predictions.

VI. CONCLUSION

Eel seed sales in the Banten Eel Group can be maximized by expanding marketing. One way to improve marketing is through digital marketing, specifically by designing an e-commerce website. This e-commerce website design has several functions, such as marketing and selling products and services offered through the website, and integration with social media platforms like Instagram and WhatsApp. This research also aims to increase knowledge and insight into implementing e-commerce using WordPress for businesses and serve as a reference for further research. The result of this research is expected to demonstrate that by using marketing strategies and social media to promote and share information about eel cultivation, businesses in Indonesia will grow.

E-commerce-based sales can be continuously enhanced by adding various functions tailored to needs. Training, guidance, and mentoring for users, especially those involved in eel seed catching, are highly recommended. System monitoring and maintenance by the development team is also essential for the system's continued use and utilization.

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