

E-Catalog Promotion of Fishermen Business Group with User Centered Design Method

Muchamad Fajri Amirul Nasrullah¹, Rina Yulius², Muhamad Sahrul Nizan³, Siskha Handayani⁴, Banu Failasuf⁵
^{1,2,3,4}Program Studi Teknik Informatika, Jurusan Teknik Informatika, Politeknik Negeri Batam
⁵Program Studi Teknik Rekayasa Multimedia, Jurusan Teknik Informatika, Politeknik Negeri Batam
Email: ¹fajri@polibatam.ac.id, ²rinayulius@polibatam.ac.id, ³nizan@polibatam.ac.id, ⁴siskha@polibatam.ac.id, ⁵banu@polibatam.ac.id

Abstract – This research aims to design a promotional e-catalog for fishing business groups using the User Centered Design (UCD) method to improve the quality of their promotional services online. The partners in this research are the Fisheries Supervisory Community Group in Batu Basar Village, Nongsa District, Batam City, Riau Islands. So far, this group and fishermen have often faced obstacles in promoting their products effectively to potential consumers, especially in the rapidly developing digital era. The UCD method used in this research is a user-focused approach. The initial stage of research includes gathering information regarding the needs and preferences of potential users, including fishing business groups and potential consumers. This information was obtained through interviews, observations and literature studies. Based on the data collected, a promotional e-catalog was designed that took into account user needs and promotional objectives which included features such as complete product descriptions, product photos, price information, user testimonials and contact information. After the design is complete, the manufacturing stage is carried out and then continues to the testing stage involving potential users. This testing aims to maximize usability, efficiency and user satisfaction. The test results used the Nielsen model with five indicators with the results of Easy To Learn getting a score of 3.85, Efficiency To Use getting a score of 3.75, the Easy To Remember indicator getting a score of 3.85, and the Few Errors indicator getting a score of 4.05. Then the fun to use indicator has a value of 3.95.

Keywords – e-catalog, promotion, user centered design

I. INTRODUCTION

The Fishermen's Joint Business Group (KUB), a significant economic sector that provides food supplies from the sea, serves as the backdrop for this study. Nonetheless, they frequently run into difficulties trying to sell their goods to prospective customers. The effectiveness and accessibility of promotions is one of the key elements affecting marketing success.

Utilizing information technology and the internet has become crucial for fishing company groups looking to reach a wider market in the ever evolving digital age. Increasing their visibility and offering promotional services can be accomplished with the use of web-based promotional e-catalogs. However, in order to deliver sufficient quality services, a well-designed e-catalog must consider the requirements and preferences of potential users [1].

The development of the Banten Bahari E-Commerce Website, which the wives of fisherman in the Karangantu Nusantara Fishery Harbor community group employed as a marketing tool, has also been the subject of investigation. The Waterfall approach is used to create websites [2].

The user-centered design approach will be used in this study, which guarantees that the creation of new products or services is grounded in a thorough understanding of users and places a premium on the user experience [3]. This can reduce development risks, enhance the quality of the product or service, and give people more value. This study will give priority to better user experience using a UCD methodology. Designers are able to create intuitive, user-friendly, and visually appealing interfaces by having a thorough grasp of their users. This will boost user happiness, foster a sense of loyalty, and promote additional involvement in fishing company group marketing. Furthermore, by carrying out this research, fishing

associations might get a competitive edge by offering superior advertising services compared to their rivals. This may assist expand the target market, improve visibility, and boost revenue. Through a PBL program involving relevant areas like web and mobile programming, this research will engage teacher and student teams.

II. RESEARCH METHODOLOGY

The User Centered Design (UCD) technique approach will be utilized in this study to create promotional e-catalogs for fishing industry associations. By ensuring consumers are actively involved in the design process and gathering copious amounts of data, the UCD technique enables researchers to comprehend user wants and preferences. It is envisaged that this will be able to address issues including improving user experience with developed apps, tailoring applications to the needs of users, and assisting users in making the most of current technology. As seen in Figure 1 below, the research methodology generally employs User Centered Design.

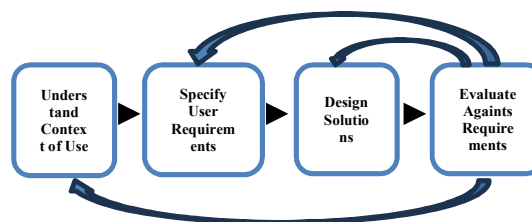


Fig. 1 User Centered Design Model.

The first step in the research process is gathering data on the issue that forms the basis of the study. This issue has to do with how technology can be applied to groups of fishermen to help them market their goods and enterprises

more extensively. Finding a need to remedy this issue is the next stage. This entails gathering data via observations, interviews, and book reviews on fishing industry associations and prospective customers. Based on this information, promotional e-catalogs that are tailored to the interests and needs of users will be created.

Subsequently, a promotional electronic catalog was created, incorporating pertinent features like comprehensive product descriptions, high-quality product images, unambiguous pricing details, user reviews, and contact details for fishing associations. The user interface will also be designed using responsive and intuitive design concepts. Next comes the review of the produced design, in which the fishermen's group is involved as the party that will make sure the elements of the application that will be developed meet their needs.

III. RESULTS AND DISCUSSION

A. Context of Use

An in-depth understanding of the environment, traits, and requirements of the fishing group that is the subject of the research is necessary for analysis of the research context for the E-Catalog Promotion of Fisherman's Business Groups utilizing the User Centered Design (UCD) method. Interviews with a number of the group's fisherman were used to do this exercise. The interview questions covered topics such as their everyday lives outside of fishing, group activities, items they created other than seafood, side ventures they took on, and challenges they had when not at sea.

The findings show that some fishermen engage in side businesses such as physical labor, boat rentals, and the sale of processed fish items in addition to their maritime pursuits. In addition, there are a number of other issues that need to be addressed, such as the dearth of media outlets that can inform a wide audience about the companies run by fishermen, meaning that, up until now, the only people who can purchase or hire their services are those who are already aware that there is a fishing group and that there are

B. User Requirements

The research team conducted the next step, which involved analyzing and mapping fishermen's needs based on the issues they faced and adjusting to the original goal of the study, which was to provide solutions related to the application of technology to the issues faced by fishing groups, based on the findings of their search for problems among the group's members. The findings indicated a number of needs for users, including the need for an application that can reach a large number of people in order to promote the products of fishermen, the requirement for application features that must be in line with current issues and assist fishermen and the community in finding information on related goods and services. Secondly, a user-friendly system is required for fishers, particularly for those who are not tech-savvy. Additionally, a system that facilitates communication between fisherman and potential customers is required. We will construct an application design for the next stage as a remedy to current issues based on several user needs notes.

C. Design Solution

In order to facilitate the creation of application designs, we begin by classifying the demands of the application based on the users. Next, we generate an identification table of application user needs and use case diagrams for users. To ensure that the system satisfies the needs of both the creator and the user, the first step is to identify application users and define the system's features and operations from their point of view, as shown in Table 1.

Table 1. User Identification

User	Assignment
Admin	a. Log in via a page that only admins can see
	b. Admin can update or add products to be sold
	c. Admin can update contact information who can be contacted
	d. Admin can publish news articles about an event in the web application column
Visitor	a. see products for sale and ongoing events
	b. provide assessments or suggestions or criticism about the products being sold
	c. can search for the product you want to buy

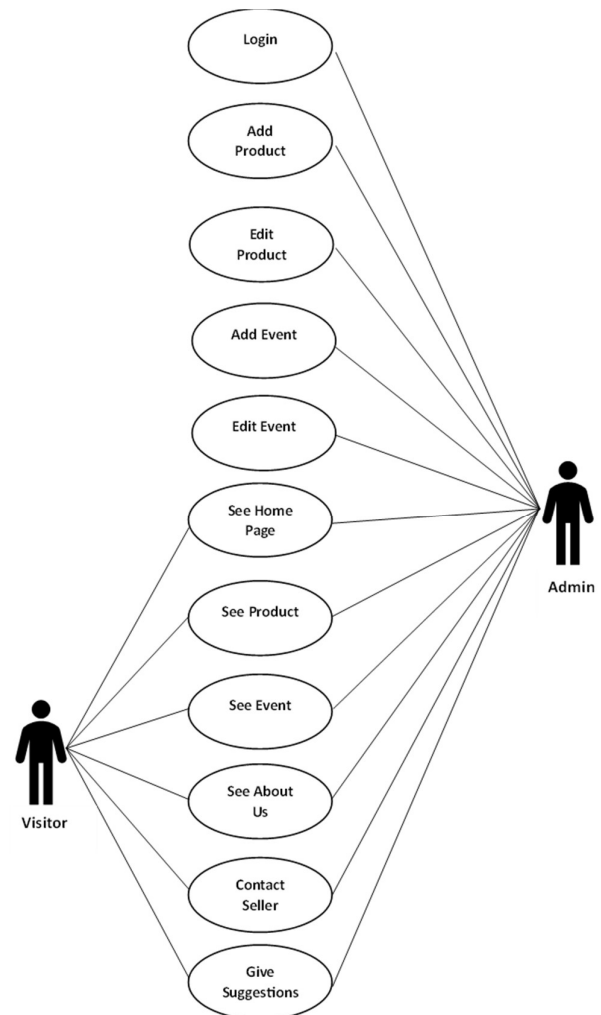


Fig. 2 Usecase Diagram.



From user identification, we continue by creating a usecase diagram which is a graphic depiction of the possible interactions of a user with the system as in Figure 2. And we carried on designing the application interface.



Fig. 3 Homepage



Fig. 4 Login page.

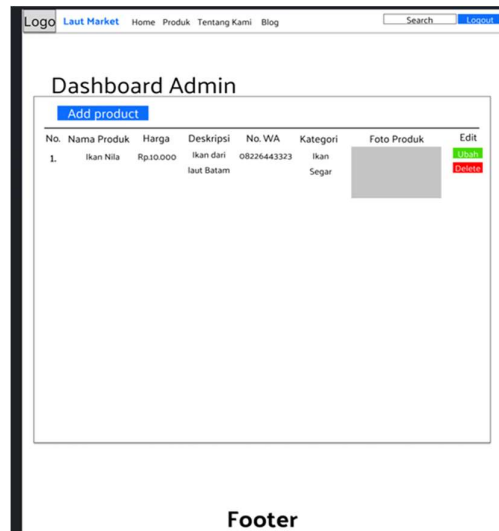


Fig 5 Dashboard Admin.



Fig. 6 Add Product Page.



Fig. 7 Catalogue Page.

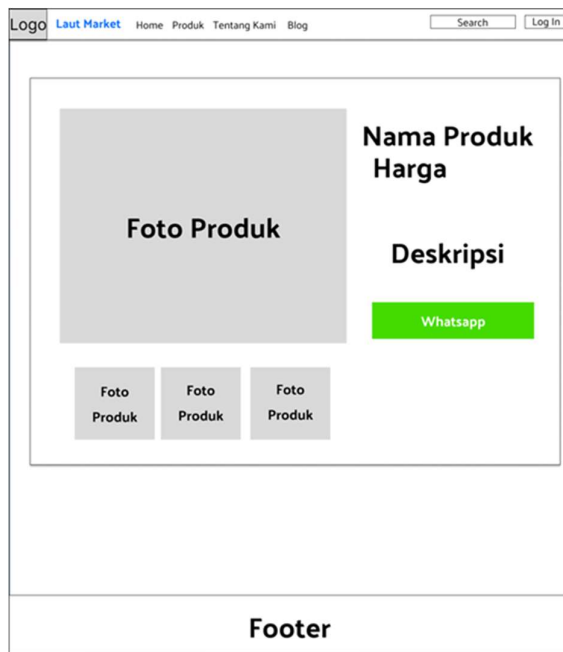


Fig. 8 Detail Product Page.

D. Evaluation

Twenty members of the fishing group were given questionnaires, and the design that had been created was displayed as part of the evaluation process. A total of 21 questions with five usability indicators—simple to learn (3 questions), efficient to use (4 questions), easy to remember (5 questions), minimal errors (6), and pleasant to use (7)—were used in the data collection for this study. Using the Nielsen methodology, the test results for each Usability Testing indicator are as follows.

1. Easy to Learn Aspect

This aspect is an assessment of the user's ease in understanding the prototype design.

Table 2. Easy to Learn Aspect assessment results

Assessment Aspects	Alternative Answers	Number of Answers	Weight	Result
Easy to Learn	Very Agree	9	5	45
	Agree	36	4	144
	Rather Disagree	12	3	36
	Disagree	3	2	6
	Very Disagree	0	1	0
	Total	60		231
Average			3.85	

2. Efficiency to Use Aspect

This aspect is an assessment of the user's ease in understanding the use of features in the prototype.

Table 3. Efficiency to Use Aspect assessment results.

Assessment Aspects	Alternative Answers	Number of Answers	Weight	Result
Efficiency to Use	Very Agree	16	5	80
	Agree	36	4	144
	Rather Disagree	20	3	60
	Disagree	8	2	16
	Very Disagree	0	1	0
	Total	80		300
Average			3.75	

3. Easy to Remember Aspect

This aspect is an assessment of the user's ease in remembering the layout of features in the prototype.

Table 4. Easy to Remember Aspect assessment results

Assessment Aspects	Alternative Answers	Number of Answers	Weight	Result
Easy to Remember	Very Agree	25	5	125
	Agree	45	4	180
	Rather Disagree	20	3	60
	Disagree	10	2	20
	Very Disagree	0	1	0
	Total	100		385
Average			3.85	

4. Few Errors Aspect

This aspect is an assessment of the interference in understanding the use of features in the prototype.

Table 5. Few Errors Aspect assessment results

Assessment Aspects	Alternative Answers	Number of Answers	Weight	Result
Few Errors	Very Agree	18	5	90
	Agree	30	4	120



	Rather Disagree	9	3	27
	Disagree	3	2	6
	Very Disagree	0	1	0
	Total	60		243
	Average		4.05	

5. Pleasant to Use Aspect

This aspect is an assessment of the ease of understanding the use of the prototype.

Table 6. Pleasant to Use Aspect assessment results

Assessment Aspects	Alternative Answers	Number of Answers	Weight	Result
Pleasant to Use	Very Agree	30	5	150
	Agree	60	4	240
	Rather Disagree	24	3	72
	Disagree	6	2	12
	Very Disagree	0	1	0
	Total	120		474
	Average		3.95	

IV. CONCLUSION

According to Nielsen, the model generates distinct values for each indication in the outcomes of usability testing calculations. For example, the Easy To Learn indicator receives a positive interpretation of 3.85. Next, Efficiency To Use received a score of 3.75, which puts it at the bottom of all the indicators currently in use, but based on the interpretation score, this score is still quite good. Easy To Remember received a score of 3.85, and Few Indicator Errors received a score of 4.05, which puts it at the top of the list of indicators. With a value of 3.95, the pleasant to use indication is deemed good as well.

REFERENCES

- [1] Apridiansyah, Y., & Wijaya, A. Aplikasi e-commerce hasil laut Bengkulu dengan penerapan algoritma SEO menggunakan model sematik web. *Jurnal Sistem Informasi dan E-Bisnis*, 1(5), 194-200. 2019.
- [2] Fitriyani, N. S., Rosalia, A. A., Anzani, L., Lestari, D. A., Widiyanto, K., Arifin, W. A., Tirtana, D., Fawaz & Raharjo, C. Website E-Commerce Sebagai Media Promosi Penjualan Pengolahan Hasil Laut Kelompok istri-istri Nelayan di Karangantu. *Jurnal Pengabdian Pada Masyarakat*, 5(4), 927-934. <https://doi.org/10.30653/002.202054.669>. 2020.
- [3] Hadi, H. N., Tirtana, A., & Zulkarnain, A. Penggunaan User Centered Design Dalam Pembuatan Website Portal Mgbk Sma Kota Malang. *Jurnal Teknoinfo*, 16(1), 138-143. 2022.
- [4] Chotijah, S. Literasi media sosial bagi millenials dalam mempromosikan pariwisata Lombok pasca gempa Agustus 2018. *Jurnal Pengabdian Pada Masyarakat*, 5(2), 596-602. <https://doi.org/10.30653/002.202052.511>. 2020.

- [5] Hutagalung, S. S., Hermawan, D., & Mulyana, N. Website desa sebagai media inovasi desa di Desa Bernung Kabupaten Pesawaran Provinsi Lampung. *Jurnal Pengabdian Pada Masyarakat*, 5(2), 299-308. <https://doi.org/10.30653/002.202052.304>. 2020.
- [6] Supardianto and A. B. Tampubolon, "Penerapan UCD (User Centered Design) Pada Perancangan Sistem Informasi Manajemen Aset TI Berbasis Web di Bid TIK Kepolisian Daerah Kepulauan Riau," *J. Appl. Informatics Comput.*, vol. 4, no. 1, pp. 74–83, 2020.
- [7] L. M. Kopf and J. Huh-Yoo, "A User-Centered Design Approach to Developing a Voice Monitoring System for Disorder Prevention," *J. Voice*, vol. 3200, 2020.
- [8] R. M. Nilamsari, B. A. Wibowo, and D. A. N. Dewi, "Peningkatan Pendapatan Keluarga Nelayan Melalui Kelompok Usaha Bersama Wanita Nelayan Di Kelurahan Banten Kabupaten Serang," *Journal of Fisheries Resources Utilization Management and Technology*, vol. 5, no. 1, pp. 87-93, Jan. 2016.
- [9] Sugandi, "Pengembangan Sistem Aplikasi Portal Informasi Perguruan Tinggi di Indonesia Berbasis Website," *J. Pengemb. Teknol. Inf. dan Ilmu Komput.*, vol. 2, no. 12, pp. 6169–6175, 2018.
- [10] D. L. Kaligis and R. R. Fatri, "Pengembangan Tampilan Antarmuka Aplikasi Survei Berbasis Web Dengan Metode User Centered Design," *JUST IT J. Sist. Informasi, Teknol. Inf. dan Komput.*, vol. 10, no. 2, p. 106, 2020.

