

The Application of E-Business Systems to Support Marketing Strategies: Case Study on Eel Marketing

Wiwin Windihastuty, Reva Ragam and Safitri Junita
Universitas Budi Luhur

Keywords Eels farmers, Transfer, Cash on Delivery, PayPal

Abstract In this study, the E-Business Application system will be built with the aim of the system producing that can introduce Indonesian Eel products. Another goal is to expand the market and improve the quality of product sales because, with the existence of an e-business application system as an information media, interactive communication between eel farmers and consumers will be good, so the buyers needed to be fulfilled properly. The results of the E-Business system design allow a company to connect with internal and external data processing systems more efficiently and flexibly. Marketing systems no longer focus on local communities as a target, but also in the overseas community. E-Business is designed to contribute to problem-solving, ensure customers can get information services. Guide visitors to be able to process purchases and payments by several methods such as bank transfers, cash on delivery, and PayPal, the product payments will be confirmed by email. These facts are not only expanding the target market but also creating global competition because the marketing system is not limited in a certain region

1 INTRODUCTION

Limited marketing caused some industries not developing properly. This makes the management must innovate market expansion, and the target is through the design and utilization of E-business. The use of information technology in trading has developed very rapidly through a number of very significant changes in the form of digitalization, capital mobility, and information liberalization (Laudon & Traver, 2013). Customers can place orders and purchases without limitation of place and time, responsiveness to current information (Xiaohui et al., 2014). The process of all business transactions can take place online to facilitate the payment process for domestic and foreign. Business expansion has become more flexible, reaching wider target markets, cheaper and interactive promotional media, clarity of transparency of operational costs, expediting distribution systems, facilitating commercial transactions across cultural and national boundaries with relatively more cost-effective, makes it easy to build business partnerships with differentiation patterns that are appropriate to the needs of certain product/service specifications (Li & Hong, 2013). Therefore, the main need in designing

E-Business is an important means to disseminate information about a variety of product uniqueness and expand the area of market share with the goal of achieving more competitive and global profit and competitiveness (Afsar et al., 2013). The success of E-Commerce is more dominant in the specificity of products with certain specifications. Business ventures with unique and specific products can make business opportunities and have a high comparative level because they have special characteristics and do not yet exist in other business ventures, as well as business ventures carried out by PT Luhur Kasih Sakti.

Indonesia is known as a maritime country that is rich in natural resources. One of the marine assets that is the object of this research is freshwater eel (Haryono MR, 2013). Marketing of eels both domestically and abroad is still very low. To overcome this, several attempts were made to recognize the existence of eels. Like creating a website that contains all the information about eels accompanied by distance learning how to capture, maintain, and process good eels. The next problem is how to introduce it to the community, the results of processed eels, proteins contained in it. This is overcome by utilizing information technology in the field of trade, such as e-Commerce. Along the way,

e-business cannot be fully utilized, because, in further research, it is known that the market shared of eel processed products is abroad. Eel resources which have abundant presence have not been utilized optimally. Farmers who catch eel seeds, collectors of eel seeds, eel cultivators and eel processing industries are then called eel offenders, have not been well integrated, so it is difficult for buyers to find their eel needs. The growth of the cultivation business is not too significant because it is not easy to sell products to the domestic market because local people do not consume processed eel products. Limited marketing has caused some businesses in eel cultivation to not develop properly because of limited buyers. Marketing has not been well developed and tends to stagnate, and business owners are looking for new approaches to expand their business opportunities by marketing products online with the E-Business system. The limited mobility and market liberalization have led to Management trying innovation to expand the target market by designing and using E-Business. E-Business Technology is a business mechanism that functions electronically by focusing on online business transactions and has the possibility of developing friendly and personal relationships with customers outside of time and space. This fact creates global competition because the marketing system is no longer limited to certain areas. At present, the marketing system still relies on direct interaction with buyers and focuses on specific locations in Indonesia, which makes it difficult for Management to increase sales and expand marketing outside Indonesia. The purpose of this research is to create a system that makes it easy to introduce and sell processed eel products globally. Expand the target market and increase sales volume by developing interactive communication with customer buyers through the provision of alternative online interfaces as a medium to promote processed eel products from PT Luhur Kasih Sakti.

2. RESEARCH METHOD

Case study research is a thorough approach of market expansion needs by using target analysis, business model design, customer interface, market communication, and implementation design. The research instrument is through interview and observation technique and for the sampling is through purposive sampling technique. Research data is from primary data and secondary data. Primary data is data that directly acquired from the

company through an interview with an observation of the company's representative. Secondary data are daily business transaction data, company's daily and monthly data, and reports published to the public. All acquired data will be reprocessed as needed for the research. Application design is using Waterfall approach (Shelly & Rosenblatt, 2012). This approach is classic and systematic; thus, it will be easy to understand because all the processes work simultaneously in certain sequences to create software.

This method starts from planning, developing and will be continuously evaluated to determine if this information system is still suitable to be applied, if not, it will be changed with a new system, and it will start with the planning again. System planning begins after receiving a proposal either internally or externally, followed by management decision. After management approval, the plan will be made in a complete work plan structure and includes the whole system. The development phase will be conducted through survey, analysis, designing, developing, implementation, and maintenance. The purpose of the survey is to identify the scope of work. The analysis phase is to understand the available system, to identify the problems, and to look for the solution. The designing phase is to design a new system to resolve the company's problems. The developing phase is to create a new system through computerizing system coding. The objective of the implementation phase is that the system created can resolve the company's problems. Its application will be in sequential (waterfall), in which each phase has to be complete before it continues to the next phase, in order to avoid repetition of a phase. The purpose of the maintenance phase is for the system to run properly and can be operated optimally. The evaluation phase is conducted to ensure that the implementation of system development is in line with the planning, from the timing, cost, or technical aspects. Evaluation team includes user, and it starts during the system development, during the hand-over, and during the operations.

The process of designing a prototype E-Business system is using basic component with application of CSS (Cascading Style Sheet), PHP (Personal Home Page), javascript framework, jQuery, CI (CodeIgniter), by utilizing MVC (Model View Controller). The system testing will use data that is easy to be checked (easy values), simple and easy to calculate data (typical realistic values), extreme data (extreme values) and prohibited data (illegal values). The structure of the testing is important because the data recording has to be accurate and precise. The

validation of input process shall determine the overall output qualification of the system, making it easier to make managerial decisions.

The needs for opportunity analysis of target market expansion begins by identifying a number of similar competitors, wherein this business not many have used the internet media as an online marketing model, so it is a good opportunity. Limitation of technical factors is such as access speed, server capability, and ease of access. Providing easy information access that has become a problem. Dynamic promotion media may boost the number of transactions and customers. However, not all have constant and normal internet infrastructure networks. The products have a special specific factor that requires product digitalized media in the virtual market. The design of the interface is using 7C approach (Context, Content, Community, Customization, Communication, Connection, and Commerce). For market communication can use search engine, online commercial, print media and magazine (Mohapatra, 2013).

3. DESIGN

The needs for designing business process of E-Business system starts off through searching, identifying, and analyzing processes to complete all information needed to be related to the contents and features attributed to the dimension of Eels processed products. This process is intended to dig up all requirements of the information of each business process so that the application model and the marketing sites procedure align with a conventional business process. This will offer new opportunity as well as a solution to some limitation that a company has by considering the operations procedure and standardization. Marketing digitization system enables seller and buyer to meet online through E-Business sites with no restriction to location and time in conducting the business transaction. Business process analysis scope of the information request process shall be up to validation receive process from the buyer. The specification requirement of E-Business system shall be differential into two important parts, functional and nonfunctional. The functional requirement is part of the requirement that consists of processes to run the E-Business system. While the non-functional requirement is focusing on elements of system behavior properties. The interaction and ability to manage the stimulus of all elements of the system

can be the most important support for successful relationships with customers and prospects.

The design of E-Business system architecture has two main parts, namely front-end and back-end pages. Each section has its own features and content. Front-end is a page that displays the front of eCommerce site that serves the user with features that have been arranged in such a way to facilitate the process of spending knowledge and searching product information quickly and accurately. Front-end is a user page doing the online shopping process, searching price and product information and interacting with the company. While Back-end is the page that is displayed for the admin and setting the contents of the data in the front-end site. Admin can add, edit, delete existing data, such as product data, administration data can order data, and on the back-end, page admin can access other useful information. The admin page can't be accessed directly through the menu in index.php, but must by typing a certain address on the browser so that the security level is higher. One of the principles in designing a site is ensuring that each page has a good navigation system and links that are able to take visitors to the main page. E-Business site has a menu section header, in which the Catalog menu will always be updated according to visited links, My Account menu, Trolley menu, Checkout menu. In addition to using the header section menu, this site also uses other alternative navigation links on the left and right sides like Categories, New Products, Search, Shopping Cart, Bestseller, Viewed Product and Bookmark. In the Footer, there is a trademark of the site and company.

E-Business system uses client-server technology architecture, centrally, because it can overcome the problem of duplication of interference. The purpose is that if one customer has a disruption in accessing data from the server, then the interference does not affect other customers in doing data access. In addition, it does not require a large amount of costs because the server only serves to store all customer data, transaction data and product information, therefore all existing data can be used by the client in accordance function and purpose. The server provides data in accordance with the needs of the client so that it can directly operate through the available network. This connectivity provides an effective network to ensure and ensure smooth acquisition of information so that all transaction data and feedback from customers can perform the process more effectively and efficiently.

E-Business architecture has a business process management mechanism starts from the customer

accessing the site, then the customer purchasing an item by adding the item to the shopping cart. After the shopping is complete, the buyer can enter billing information into a credit card or buyer who already has a PayPal account can login to make payment. Before making a payment, the buyer confirms the details of the transaction, next to the buyer checks and prints the payment confirmation. The final step is that the buyer receives payment notifications via email. The payment method architecture with PayPal starts from customer shops by stuffing items into the shopping cart. After shopping, the next step is the customer must log in. After successful login, customer can check the shipping data and billing information, then makes payment. After making the payment, the customer can view the order in detail, and then the customer sees the confirmation of the ordered item. The architecture of how payment of invoices works online starts from invoice delivery. The customer then clicks the payment link on the invoice to make a payment. After the payment process is done, the customer's funds are transferred from the customer's bank to the bank with the payment network. After all payment processes are completed, then the final step is the customer matches it with the original invoice.



Figure 1. E-Business System Architecture

Strategy in the designing stage of the E-Business site refers to object-based design. Use-case diagrams explain the benefits of the system when viewed from the perspective of people outside the system or actor. The Admin's function in the site is when successfully log in to the administrator page, the admin can manage the purchasing activities that contain the explanation of how to make transactions, change password, manage product management such as adding, deleting and changing product data and product categories, manage admin module which contains bank data, manage comments and incoming transaction menus. The Visitor's function, in this case, the consumer is the product ordering activities through the registration process (Figure 2)

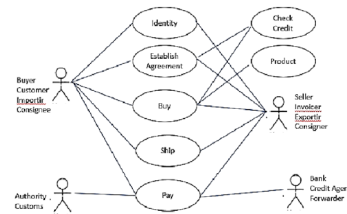


Figure 2. Use Case Diagram of E-Business System

The data structures design is using the MVC framework (Model View Controller). The MVC framework generates a data structure that assigns tasks to each function so that it is more controllable. CodeIgniter is a framework that enforces the MVC file structure in its structure. The MVC structure in the CodeIgniter framework uses component diagrams. The work unit that manages all the components in the CodeIgniter framework is the core component that is integrated into the system package. The core component oversees or manages the dependent model and controller in which the controller sends the data request, and the receiving model retrieves the data that the controller wants from the database. The result of the data request will be shown to the view by the controller. The MVC file structure in the CodeIgniter framework is usually placed in the application folders that have been group according to their respective functions. Here is a file structure display of each MVC folder in PT Luhur Kasih Sakti's E-Business site design.

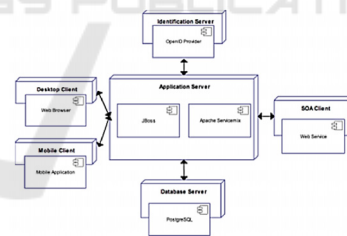


Figure 3. Component Diagram of E-Business System

Furthermore, class diagrams can display some classes and packages that exist in the system/software used and the connections therein. The class diagram describes the types of objects in the system and the various existing static connections. The class diagram shows the properties and operations of a class and the restrictions contained in the connection of those object.

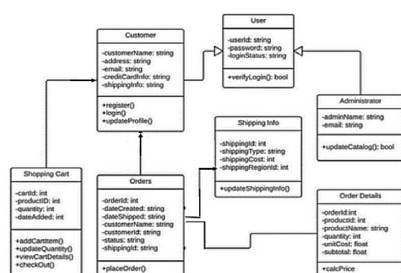


Figure 4 Class Diagram of E-Business System

Here is the main page design to manage all contents on E-Business system of products. The design page of the seller/supplier menu format has a function to log all records so it will be easy to find a particular seller/supplier's ID. This information is very important, considering all transactions will be interconnected with other items of choice menu. All the options in this menu have permanent inner links. The interface for public pages of this homepage is the default page when the display is first access with the base address. This page will display some sections that help users to find the required products through the E-Business system's site search engine, categories with parent and child. In addition, there is an automatic slide banner at the top, and this is to provide announcements about the policy or information to be conveyed to customers.

Having a shopping cart page display on the visitor page. If a visitor makes a transaction by clicking the buy button, the item will go into the consumer's shopping cart. On that page, the data of purchased products and total payments to be pay by consumers will appear

For information showing order data such as member's data i.e., name, address, phone number, and email as well as the name of the ordered product, the shipping cost and the total price of the items ordered by e-mail. The system will send the destination account number for the payment through the email of the member ordering the product. If the data has been sent via email and within three days the payment confirmation is not received, then the admin will cancel the order by changing the member's booking status according to the established procedure and the delivery process will not be done or not performed.

The system has a content to verify and validate. It is important considering all the item's data that have been entered into the shopping cart used as data of the items to be paid. This is because the data has not been entire into the admin's bill of sale. To continue this process, the consumer must click the

process button. After the process button is clicked, then the item's data in the shopping cart will proceed to the admin invoice. Below is a display that shows that the existing data in the cart proceeds into admin's bill of sale. To make payment to the ordered items, the consumer must fill in the data on the confirmation payment form. Before filling in the data, the most important thing that must know the invoice number. To get information about the invoice number, the consumer can click on the Invoices menu that is group into the shopping cart at the right of the site

This E-Business system provides a number of operational advantages, such as data processing is easier to track, payment systems become more accurate with no accounts receivable, inventory information is more accurate, developed personalized relationships with customers to become closer, and it is one of the company's competitiveness aspects. Also, the ability to identify customer needs that have not been met eliminates time constraints for customers to obtain information about the products offered or the ongoing promotions, communicate with customers in a more clear manner and directly solve their immediate needs. Eels process products sold are no longer focusing on the domestic market only. E-Business system has a navigation feature that provides convenience for visitors, in this case, either consumers or buyers while visiting the site's page. It contributes to problem-solving as a guarantee for a customer's friendly information services and switches to the digitization of the sales of eel process products. Displaying certain messages in directing visitors, the prospective buyers can start the process of ordering goods online at anytime and anywhere as well as to get the most up to date information about eel process products.

The ability of the E-Business system offers many new opportunities, especially the opportunity to expand market target with low operating costs because all transactions can take place regardless of the time and place of business transactions.

4. CONCLUSION

E-Business system design for special eels processed products has the facilities to store personal data members (members) with a complete username and password to anticipate being misused by irresponsible people. E-Business System also provides payment facilities through bank transfer and Cash-On-Delivery. In addition, this application

provides interesting features for members, such as the invite friends program, and a gift of discount shopping vouchers when the member is having a birthday. The architecture of this application can also use to enter new data and change existing data as well as provide information about purchases made by the member to the shop owner. Provides information to members about the delivery status of the goods they purchased and the status of payment via e-mail. In order for E-Business implementation to run well, especially on the client's side, it requires a hosting server that has a large capacity and fast access speed. For further development, this E-Business system site can be added with news facilities on the development of information and technology so that the users and visitors can keep up with the latest developments. Complete with electronic payment system using a credit card or another electronic payment system like PayPal. Provide several languages option to provide convenience to customers who are foreigners, and domiciled in Indonesia to place orders or make a transaction.

Communication errors often occur, because there is no direct meeting between the seller and the buyer so that both parties disagree. This is also due to the existence of irresponsible people, they steal information, data and even financial such as claiming to have transferred money by providing a photographic proof of the amount of money that has been transferred, but in fact the photo has been edited in such a way that business people suffered losses because they have sent products that have been bought by consumers with fictitious proof of payment. Higher impact, businesses lose the opportunity and lose the trust of consumers.

Mistakes in communication often occur in the beginner of e-business. Lack of knowledge about the online business ultimately harm both parties. To avoid theft of information, data, and finance, applications must be given validation and access rights for users. If there will be a big and prolonged business, the meeting should be arranged so that a business agreement occurs.

REFERENCES

- Affandi R. 2005. Strategi Pemanfaatan Sumberdaya Ikan Sidat, *Anguilla spp.* Di Indonesia. *Jurnal Iktiologi Indonesia*. 5: 77-81
- Arai T, Limbong D., Otake T., Tsukamoto K., 1999. Metamorphosis and inshore migration of tropical eel *Anguilla spp.* In the Indo-Pasific. *Marine Ecology Progress Series*. 82:283-293
- Haryono 2008, Sidat, Belut Bertelinga: Potensi dan Aspek Budidayanya, *Fauna Indonesia* 8(1): 22-26
- Afsar, A., Nasiri, Z., & Zadeh, M. O. (2013). E-loyalty Model in E-Commerce. *Mediterranean Journal of Social Sciences*. 4(9). Hlm. 547-553. Antika, E., & Widiastuti, I. (2014).
- Astuti, R., & W, Pariyadi. (2013). Aplikasi E-Commerce Pada Systech Computer Jambi. *Seminar Nasional Informatika (SNIf) 2013*. STMik Potensi Utama Medan. Hlm. 348-352. Bernadi, J. (2013).
- The Effects of Social Media on E-Commerce: A Perspective of Social Impact Theory. 45th Hawaii International Conference on System Sciences. ISBN: 978-0-7695-4525-7/12 © 2012 IEEE DOI 10.1109/HICSS.2012.564. Hlm. 1814-1823. Kosasi, S. (2014).
- Understanding Electronic Commerce: How Online Transactions Can Grow Your Business. Redmond. Washington. Microsoft Press. Laudon, K. C., & Traver, C. G. (2013).
- E-Commerce 2014: Business, Technology, Society. Tenth Edition. Prentice-Hall, Inc. Lee, In. (2014). Trend in E-Business, E-Services, E-Commerce: Impact of Technology on Goods, Services, and Business Transactions. IGI Global. Li, H., & Hong, J. (2013).
- E-Commerce Strategy: Text and Cases (Springer Texts in Business and Economics). New York: Springer. Schneider, G. (2012). *Electronic Commerce*. Tenth Edition. Cengage Learning. Shelly, G., & Rosenblatt, H. (2012).
- System Analysis and Design. Ninth Edition. Course Technology. Cengage Learning. Sommerville, I. (2011). *Software Engineering*, Ninth Edition. Addison-Wesley. Turban, E., King, D., & Lang, J. (2010)