

4th Padang International Conference on Education, Economics, Business and Accounting (PICEEBA-2 2019)

Development Strategy of Embroidery Product Market Based on WEB E-Commerce in West Sumatra

Rose Rahmidani¹, Armiati², Syukhri³, Dessi Susanti⁴

¹Universitas Negeri Padang, Padang, Indonesia, ⊠rose_rahmidani@fe.unp.ac.id ²Universitas Negeri Padang, Padang, Indonesia, ⊠armiati@fe.unp.ac.id ³Universitas Negeri Padang, Padang, Indonesia, ⊠syukhri@ft.unp.ac.id ⁴Universitas Negeri Padang, Padang, Indonesia, ⊠dessisusanti@fe.unp.ac.id

Abstract

The purpose of this research is to produce a system design that can make it easy to introduce and sell all embroidery products by "Lily Indah Handycraft". It is located in Rohana Kudus Street No. 1 Koto Gadang, Kec. IV Koto, KabupatenAgam and "VenniBordir" at Raya Pariaman Street, SicincinRambai, South Pariaman, PariamanCity. Globally, expanding the area of market share and efforts to increase volume sale by building interactive communication relationships to consumers. E-Commerce system design method uses the Waterfall approach with an object oriented approach. The results of E-Commerce system designdisplays all information about embroidery products. The sales system is notonly focus on the local community, which increasingly competitors. The E-Commerce system has a navigation feature for visitors easyly in using while both consumers and customers when visiting the site page. Having a contribution to solve problems to give guarantee costumers in information services closer and move to digitizing sales of embroidery products. Display certain messages to direct visitors, buyers can make the order process, payment by transfer, cash on delivery and PayPal, and confirmation of product payment sent by email. These facts can expand market share and grow competitiveness globally because the sales system is not limited in certain regions.

Keywords: E-Commerce, market development, waterfall approach

Introduction

The use of information technology in the field of commerce has developed very rapidly through a number of very significant changes in the form of digitalization, capital mobility and information liberalization (Laudon & Traver, 2013). Consumers (customers) can order and purchase without limitation of place and time, responsive to the latest information (Caldwell et al., 2013). The mechanism and process of business transactions can all take place online, making it easier for the payment process in domestic and abroad. Business expansion is becoming more flexible, reaching wider target markets, cheaper and interactive promotional media, clear transparency of operational costs, digitizing products / services, streamlining the distribution system, providing ease of commercial transactions across cultural and national borders with relatively more effective cost, make it easier to build business partnerships with differentiation patterns and need of certain product / service specifications (Li & Hong, 2013). Therefore, the main need in designing ecommerce is an important means of disseminating information on various product uniqueness and expanding the market share area with the aim of gaining more competitive and global advantages and competitiveness (Afsar et al., 2013). The success of E-Commerce is more dominant lies in the specificity of products with certain specifications. Business in unique and specific products can make opportunities and have a high level of comparability because they have characteristics and are not available in other business ventures, such as business ventures that sell embroidery products in West Sumatra.

Embroidery Products in West Sumatera have their own characteristics; their specialty lies in the strength of the traditional Minangkabau motifs used. Decorative motifs used include kaluak nails (curved fern),

pucuakrabuang (shoots of bamboo shoots), itiak pulang patang (ducks back home in the evening), and saikajik (cut diamonds). Embroidery craft are closely related to the needs of Minangkabau traditional ceremonies and always used as clothes. The materials of clothes for the traditional ceremony consist of: BundoKanduang clothes (clothes, scarves and codecs / sarong), wedding decorations, (consisting of curtains, ceilings, and bantagadang); and carano decoration. Besides of clothes, such as kebaya, embroidery craft is also applied to various other crafts, such as sandals, souvenirs, hats, religious equipment, shoes, bags, and so on.

Embroidery handicraft industries in West Sumatra are spread in 5 cities and 3 regencies, namely Sawahlunto City, Padang City, Payakumbuh City, Bukittinggi City, Pariaman City, Padang Pariaman Regency, Agam Regency and Tanah Datar District. However, many artisans and sellers of embroidery in small, medium and large scale still rely on classic and simple ways to market and also sell products that have been produced to traditional markets, shops, boutiques, shopping centers such as mall and others. Until now, those methods can still work well. However, there are many obstacles faced when still relying on simple ways to carry out the distribution and sale of embroidery on a large scale. The most important things to influence sales turnover at a store in physical form are location, product quality and price. The location of the store in the middle of the city will tend to be visited more by shoppers because it is easily reached by the public. Then the quality of the product also determines the choices of consumers who will use the product, in this case the quality of the product will tend to be directly proportional to the price offered, the better the quality of the product offered, the price of the product will also be more expensive. Competitive prices are also one of the keys to the success of a selling product well in the market. Prices that are too high will also reduce the number of consumers due to limited purchasing power of consumers, this will cause only consumers with purchasing power or high economic levels to be able to buy the product.

The growth of embroidery business on Lily Indah Handycraft and VenniBordir is not too significant because they only for the consumption of local people and tourists for a certain period of time. Limited sales activities cause this embroidery business cannot develop properly because the number of buyers is limited. So far with the economic conditions that have not been so good and tend to stagnate, making owners look for new breakthroughs by exploring business opportunities to expand market share online through the use of the E-Commerce system. Limited mobility and market liberalization makes management have to innovate the expansion of the target market through the design and use of E-Commerce. E-Commerce technology is a business mechanism that works electronically by focusing on online business transactions and having the opportunity to build more humane and personalized relationships with customers without relying on space and time (Li & Yang, 2014). This fact can foster global competitiveness because the sales system is no longer limited to certain regions. During this time the sales system still relies on media interaction with consumers (customers) directly and is still centered on certain locations, especially in the City of Pariaman and Bukittinggi. This certainly makes it difficult for management to increase the number of sales and expand its marketing area outside the City of Pariaman and Bukittinggi. The purpose of this research is to produce a system that can make it easy to introduce and sell all embroidery products produced by Lily Indah Handycraft and Venni Embroidery globally. Expanding market share areas and efforts to increase sales volume by building interactive communication relationships with consumers (customers) through the provision of alternative interfaces online as a medium to promote all embroidery products.

E-Commerce Research in Indonesia that relevant to this research include the use of E-Commerce technology as an important tool in implementing online strategies and promotions so as to expand market share (Antika et al., 2014). There are a lot of conveniences in the transaction process and the present of information is very supportive in the managerial decision making process (Anwar et al., 2014). Information dissemination is faster and more adaptive to various changes in community needs without limitation of time and place (Astuti et al., 2013). Decreasing operational costs and achieving company profitability as well as opportunities to increase company competitiveness (Julisar et al., 2013). Sales and marketing systems become more effective, dynamic and easy in increasing product expansion (Kosasi, 2014). This system eliminates the

specific role of intermediaries, reducing marketing operational costs, flexibility in informing all goods, transparency in the price of goods and shipping costs to be faster and more controlled. Marketing digitalization provides a number of operational advantages such as ordering data processing that is easier to trace, more accurate inventory and payment systems, and building good relationships with customers (Kosasi, 2015). Through the E-Commerce system can reach and access global markets (56%), product promotion activities (63%), the ability to build product brands (56%), establish close customer relationships (74%), facilitate communication activities more quickly (63%), providing satisfaction to customers (56%), having an E-Commerce system can grow and increase customer satisfaction (74%) and competitive advantage (81%). Some of this empirical evidence shows that the E-Commerce system needs to get important attention and is an opportunity for micro and small businesses to increase their target market share and company competitiveness (Karmawan et al., 2010).

Referring to previous research, producing an E-Commerce system has become part of a business expansion strategy and is an online promotion strategy that is very effective and can specifically expand the target market segmentation. The ease of doing transactions with the latest information so as to make information more interactive and adaptive with lower operational costs to provide good service to customers. This study uses the System Development Life Cycle (SDLC) method with the Waterfall approach so that the approach used is not the same as the previous research. This method has phases of planning requirements, design, unit testing, system testing and maintenance (Sommerville,2011). For the design of E-Commerce architecture using component base, and PHP programming language with CodeIgniter framework. Furthermore, the design of the E-Commerce system uses NetBeans IDE version 7.2 and uses the MySQL application to design the entire database.

Methods

Research and Development (R&D) research with its market expansion needs approach uses analysis target market opportunities, business model design, customer interface, market communication and design implementation. The research instrument used interview and observation techniques, and for sampling using the technique purposive sampling. This research data derived from primary data and secondary data. Primary data is data obtained in a manner directly from the business actors through the process of interviews and observations with the company. While for data secondary comes from all internal company documents. All data obtained will be reprocessed according to research needs. The design of the application uses the Waterfall approach (Shelly & Rosenblatt, 2012). This approach is a classic model and is systematic so it is easy to understand because all the processes work in sequence in the stages of building a software (Figure 1).



Figure 1 The Waterfall Approach

The system development phase is carried out through survey, analysis, design, manufacturing, implementation and maintenance activities. The survey aims to determine the scope of work. The analysis aims to understand the existing system, identify problems and find solutions. The design aims to design a new system to solve the problems facing the company. Making aims to produce a new system through a computerized coding system. Implementation aims so that the resulting system can provide benefits to overcome problems that occur in the company. For its application to use the method in sequence (waterfall), where each stage must be completed in full before proceeding to the next stage, with the aim of avoiding the repetition of these stages. Maintenance aims to make the system run or be operated optimally. The evaluation phase is carried out to ensure that the implementation of system development is in accordance with the plans that have been set both in terms of time, cost and technically. The evaluation team includes the user / management starting when developing the system, during delivery and during operation.

Furthermore, for the process of making the prototype design of the E-Commerce system using component bases by implementing a CSS (Cascading Style Sheet) framework, PHP (Personal Home Page), javascript framework, jQuery, CI (CodeIgniter), by empowering MVC (Model View Controller). The testing system uses data that is easily checked (easy values), simple and easily calculated data (typical realistic values), extreme data (extreme values) and data that is not allowed (illegal values). The structure of this test is important because the data recording must be accurate and precise. Validation of the input process will determine the overall output qualifications of the system making it easier to make managerial decisions. In designing the interface using the 7C approach (Context, Content, Community, Customization, Communication, Connection, Commerce). Market communication can be through search engines, online advertising, print media, and magazines (Mohapatra, 2013).

Results and Discussion

The need for designing business processes for E-Commerce systems begins with tracing, identifying and analyze to meet all information needs related to content and features attached to dimensions of embroidery product. This activity is to explore all needs regarding information on each process business, so that the application model and business site procedures are compatible with conventional business processes. Formulate with business owners about the functionality of cyber market activities using web sites, including those defining important needs in the form of scope of interaction with users. This can offer new opportunities at once a solution of a number of restrictions on the company by considering operational procedures and standardization. The goal is to produce a merchandising digitalization system by bringing buyers and suppliers / sellers online together through the layout of the E-Commerce site without having to depend on location and be bound by time in carrying out the process business transaction. The scope of the analysis of business processes from the request process will need information to the validation process acceptance by consumers (customers). For the requirements of the E-Commerce system specifications can be divided into two parts important, namely functional and non-functional. Functional needs are the requirements that contain processes for run the E-Commerce system. Furthermore, non-functional needs are more focused on all elements of property system behavior. Interaction and the ability to manage stimulus all elements of the system can be the most important support for success in establishing relationships with customers and prospective customers.(Chaffey, D, Patron, 2012)

The architecture design of the E-Commerce system has two main parts, namely the front-end and backend pages. Every sections have their own features and content. Front-end is the page that displays the front of the E-site Commerce that functions to serve users with features that have been arranged in such a way as to facilitate the process knowledge and product information searches quickly and precisely. Front-end is the user's page do the online shopping process, find price information and products, and interact with companies. While Back-end is the page that is displayed for admins and data content settings in the front-end site. Admin can add, edit, delete existing data, such as product data, administrative data, order data, and on the page Back-end admins can also access other useful information. (Kim, H, Lee, 2011). The admin page cannot be accessed directly via menu on index.php, but must type a specific address in the browser so that the level of security is more high. One of the principles in designing a site is to make sure that every page has a good navigation system and links that can take visitors to the main page. The E-Commerce site has a menu in the header section, where for the Catalog menu will always be updated according to the link visited, My Account menu, Cart menu, Checkout menu. In addition to using the menu in the header, this site also uses other alternative navigation links on the left and right like Categories, New Products, Search, Shopping Carts, Bestsellers, Viewed Products, Bookmarks. In the footer section theretrademark of the site and company.

E-commerce architecture has a mechanism for managing business processes starting from customers accessing the site, then Customers buy goods by adding item items to the shopping basket. After shopping is finished, then Buyers can enter billing information into a credit card or buyers who already have a PayPal account can login to make payment. Before making a payment, the buyer confirms the details of transaction and the next buyer sees and prints payment confirmation. The final step is the buyer accepts Payment notification from email. The payment method architecture with PayPal starts with shopping customersput items in shopping carts. After shopping, the next step the customer must login Aftersuccessfully logged in, customers can see delivery data and billing information and then make a payment. After Make payment, customers can see the order in detail and then the customer sees the confirmation of the goods order. Architecture of how online invoice payments work starting with sending invoices. Then the customer clicks Payment link in the invoice to make payment. After the payment process is done, the funds The customer is transferred from the customer's bank to the bank through the payment network. After all payment activities are completed, then the final step is the customer matches the original invoice. The strategy in the stages of designing an E-Commerce site refers to object-based design. Use diagram case explains the benefits of the system when viewed according to the views of people who are outside the system or actors. Function admin on the site is when successfully logging into the administrator page, the admin can do activities to manage the purchase method that contains an explanation of how to conduct transactions, manage change passwords, managing product management ie adding, deleting and changing product data and product categories, managing admin module that contains bank data, manages comments and manages the incoming transaction menu. Function visitors in this case consumers (customers) in the form of product ordering activities through the registration process (Figures 2 and 3).



Figure 2 The Diagram of Order Use Case





Figure 3 The Diagram of Sale Use Case

Database design consists of data dictionary, normalization and entity relationship diagram. The data dictionary is collection of data attributes in the database design that will be used on the e-commerce website for embroidery products. Table structure is a database of e-commerce website embroidery products that consist of several tables interconnected. The tables are a place to store all the data needed in making application. Before obtaining a database structure that will be used on the system, it needs to be normalized first first. Normalization is the process of grouping data attributes that make up simple, nonredundant, flexible, and entities easy to adapt, so that we can be sure that the database is made of good quality. Purpose Database normalization aims to eliminate and reduce data redundancy and ensure data dependencies (data is in a table that right). Based on the normalization process that has been done, both the first normalization, second normalization and third normalization Entity Relationship Diagram (ERD) is made. ERD explains that between entities related to other entities in one unity. Relations (relations) between these entities have a cardinality relationship. Cardinality relations include one to one (1,1), one to many (1, N) and many to many (N, M). ERD aims to describe the relationships that take place within system, as shown below:





Figure 4:Entity Relationship Diagram



The following is the interface design which is an important part in designing the system. The seller / supplier menu form design page has a function to record all records so that this makes it easy to find a specific seller / supplier ID. This information is very important because all transaction activities will be interconnected with other menu items. All options in this menu have a permanent link inside. The interface for this public homepage page is the default page when first viewing is accessed with a basic address. This page will display some parts that help users find the products they need through the E-Commerce system's search engine, a category that has parents and children. Apart from that there is a slide banner at the top that will automatically, this is to provide an announcement about the policy or information to be conveyed to visitors (consumers / customers) (Figures 5, 6, 7, 8)

(Logo, tagline dan identity Login Daftar			
Navigation Menu				
	Form of User's List			
Location (google map)				
Footer				

Figure 5. Front Cover

Logo, tagline dan identity	Login Daftar
Navigation Menu	
Form of User's List	
Location (google map)	
Footer	

Figure 6. Page of Users Lis



Logo, tagline dan identity	Login
Navigation Menu	
Form of User's Login	
Location (google map)	
Footer	

Figure 7. Cover of Login Page



Figure. 8 Cover of Product Detai



This e-commerce system provides a number of operational advantages such as data processing which is easier to trace, payment system becomes more accurate and has no receivables, inventory information is more accurate, can build personalized relationships with customers so that it becomes closer and this is one of the competitiveness company. The ability to identify customer needs that have not been met, eliminate the limited time for customers to obtain information about the products offered or promotions that are being held, communication with customers can be clearer and solve their needs problems directly. All embroidery products sold are no longer focused solely on the local community, which is increasingly becoming more and more of its competitors. E-Commerce system has a navigation feature that makes it easy for visitors, in this case both consumers and customers when visiting web pages. Has contributed to solving problems to provide information service guarantees that are closer to consumers and move to the process of digitizing the sale of embroidery products. Displaying certain messages in directing visitors, prospective buyers can order goods online anytime and anywhere and get information on embroidery products up to date. The ability of the E-Commerce system offers many new opportunities, especially the opportunity to expand market share with low operating costs because all transactions can take place independently of the time and place of conducting business transactions.

Conclusions

The design of the E-Commerce system specifically embroidery products has the facility to store the personal data of members (members) with a username and password to anticipate misuse by people who are not responsible. This e-commerce system also provides payment facilities via bank transfer and cash on delivery. In addition, this application provides interesting features for members such as a program to invite friends, and gift giving in the form of shopping discount vouchers. This application architecture can also be used to enter new data and change existing data and can provide information on purchasing data made by members to the shop owner. Provide information to members regarding the delivery status of goods purchased and payment status via e-mail. In order for e-commerce implementation to run well, especially on the client side, a hosting server that has a large capacity and fast access speed is needed. For further development, this E-Commerce system site can add news facilities regarding information and technology developments so that users and visitors can keep abreast of the latest developments. Need to develop more complete features, good design, so that it can support online shops with more visitors. Equip with an electronic payment system using a credit card or other electronic payment systems such as PayPal. Provides several language options to make it easy for customers who have foreign citizenship, and are domiciled in Indonesia to place an order or transaction.

References

- 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). Pengembangan E-Commerce dan Strategi Promosi Online Batik Tulis Sumbersari untuk Memperluas Jaringan Pemasaran Melalui Internet. Konferensi Nasional Sistem dan Informatika (KNS&I) 2014. ISSN: 1979-9845. STMIK STIKOM Bali. 7-8 November 2014., Hlm. 278-283.
- Anwar, S., & Efendi, Y. (2014). Desain dan Implementasi E-Commerce Untuk UKM Berbasis Komunitas: Studi Kasus UKM Di Wilayah Pamulang. Konferensi Nasional Sistem Informasi (KNSI) 2014. ISSN: 2355-1944. STMIK Dipanegara Makassar Bekerja sama Dengan ITB. 27 Pebruari – 01 Maret 2014. Hlm. 1569-1573.
- 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). Aplikasi Sistem Informasi Penjualan Berbasis Web Pada Toko Velg YQ. ComTech. 4(2). Hlm. 731-741.
- Caldwell, N., Harland, C., Powell, P., and Zheng, J. (2013) 'Impact of e-business on perceived supply chain risks', *Journal of Small Business and Enterprise Development*, vol., no. 4, pp. 688-715.
- Chaffey, D., & Patron, M. (2012). From web analytics to digital marketing optimization: Increasing the commercial value of digital analytics. Journal of Direct, Data and Digital MarketingPractice, 14(1), 30–45

Fingar, P., Harsha, K., & Tarun, S. (2000). Enterprise E-Commerce. Tampa Florida. Meghan-Kiffer Press.

- Govindaraju, Rajesri., & Chandra, Dissa R. (2012). Analysis of Level and Barriers of E-Commerce Adoption by Indonesian Small, Medium, and Micro Enterprises (SMMEs). Internetworking Indonesia Journal. Vol 4. No 1B. Hlm. 9-14.
- Julisar., & Miranda, E. (2013). Pemakaian E-Commerce Untuk Usaha Kecil dan Menengah Guna Meningkatkan Daya Saing. ComTech. Vol. 4. No. 2. Desember 2013. Hlm. 638-645.
- Karmawan, I G. M., Sundjaja, Arta Moro., & Luhukay, Devyano. (2010). Analisis dan Perancangan E-Commerce Pada Garuda Jaya. Seminar Nasional Aplikasi Teknologi Informasi (SNATI) 2010. ISSN: 1907-5022. Hlm. B17-B22.
- Kwahk, K. Y., & Ge, X. (2012). 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.
- Kim, H., Lee, I., & Lee, C. (2011). Building Web 2.0 enterprises: A study of small and medium enter-prises in the United States. International Small Business Journal, 31(2), 156–174.
- Kosasi, S. (2014). Pembuatan Sistem Informasi Penjualan Berbasis Web Untuk Memperluas Pangsa Pasar. Seminar Nasional Teknologi dan Informatika (SNATIF) 2014. ISBN: 978-602-1180-04-4. Edisi 1. Volume 1. UniversitasMuria Kudus. 23 Agustus 2014. Hlm. 225-232.
- Kosasi, S. (2015). Perancangan dan Pemanfaatan E-Commerce Untuk Memperluas Pasar Produk Furniture. Seminar Nasional Teknologi Informasi dan Komunikasi (SENTIKA) 2015. Universitas Atma Jaya Yogyakarta. ISSN: 2089- 9815. Hlm. 17-24.
- Kosiur, D. (1997).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). Factors Influencing Consumers' Online Repurchasing Behavior: A Review and Research Agenda. iBusiness. 5(4). Hlm.161-166.
- Li, Y., & Yang, R. (2014). New Business Model for Company to Win the Competition. American Journal of Industrial and Business Management. Vol 4. Hlm. 190-198.
- Li, Lixiang., Chai, Yueting., & Liu, Yi. (2011). Inter-Group and Intra-Group Externalities of Two-Sided Markets in Electronic Commerce. Journal of Service Science and Management. Scientific Research, Vol 4, Hlm. 52-58.
- Mohapatra, S. (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). Introduction to Electronic Commerce. Third Edition. Prentice-Hall, Inc.



Xiaohui, G., Rong, G., & JianYu, W. Chongning, Huo. (2014). Key Technology of Distributed E-Commerce SystemArchitecture. TELKOMNIKA Indonesian Journal of Electrical Engineering. Vol.12. No.5. May 2014. Hlm. 3987- 3993. DOI: http://dx.doi.org/10.11591/telkomnika.v12i5.4346. ISSN: 2302-4046.