

DESIGN E-COMMERCE ANGON BASED ON MARKETPLACE TO INCREASE PURCHASING EFFICIENCY FOR LIVESTOCK'S ACTOR (PURCHASE MODULE)

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ABSTRACT

Livestock is an affairs that be related in feed, tools, livestock farming, and marketing. Person or organization that involved to the livestock cycle were called the livestock's actor. They are consist of the livestock industries, breeder, or the livestock consumer. They need to know the livestock products information to fulfil their needs. To do it completely, doing a survey to find a match products are the necessary things that the livestock's actors had to do, including quality, quantity, and the prices. The best answer for all of those problem is e-commerce. The e-commerce was named as Angon and will be design based on marketplace.

Key words: *Livestock, E-commerce, Marketplace.*

1. INTRODUCTION

Livestock is all matters relating to physical resources, seeds, feed, tools and animal husbandry machinery, livestock cultivation, harvest, postharvest, processing, marketing, and enterprise. To meet food needs, there are still problems in Indonesia in developing the farm. Those problems are managed on the basis of ten farms called *Dasasila Peternakan*. The first principle is the interaction between livestock's actor harmonious and the ninth principle is integrated marketing. Livestock actor's interactions can be interpreted harmonious if there are parallel informations between livestock's actors. While integrated marketing is marketing that one party does not feel disadvantaged.

As potential consumers, livestock's actors need information availability needs of livestock such as cattle feed, vitamins, or a tool of industrial livestock farms for livestock. It is also livestock users need information

about the quantity and quality of livestock provided by farmers, so that users can determine where to buy the livestock.

Therefore, it requires systems that support the delivery of information while providing a purchase transaction for the livestock actor. The website can be a point of delivery of information via the Internet. With the website, livestock actor can find out information about livestock. In fact, some websites that provide information on livestock product does not currently have a feature to make purchases directly, in other words, they only display information about the data of livestock actor and products offered. In addition, websites are also not have features to help facilitate prospective buyers in choosing products to be purchased. The website which provides information on livestock products are agromaret.com, ayamkampungku.com, alatternakunggas.com. Here is a table comparison the features of the website.

Table 1. Similar Comparison Website

Feature	Agrom aret.co m	ayamk mpung ku.com	Alatter nakun ggas.c om
Product's photo	x	√	√
Product's stock	√	x	√
Product's description	√	√	√
Product's review	√	x	√
Compare product	x	x	x
Purchase product via online	x	x	√

Based on the comparison in table 1, required an information center to integrate livestock actor by providing facilities for the buying and selling of livestock products through the website. Sell and purchase through the web commonly known as e-commerce. E-commerce is the best technology to overcome the problem of the livestock actor because with e-commerce can offering information on products and livestock actor can conduct transactions through the website so as to improve the efficiency of the purchasing process. E-commerce will be designed based marketplace with the type of customer to customer (C2C) because in practice livestock actor are still not legal entities can market and sell their products. E-commerce is called *Angon*. "*Angon*" means "tend" in Javanese. E-commerce *Angon* enabling transaction activity between livestock actor in Indonesia starting from the sell and purchase of livestock products.

2. LITERATURE REVIEW

Here's several literatur to support this research.

2.1 Livestock

According to the Law of the Republic of

Indonesia Number 18 of 2009 on Animal Husbandry and Animal Health Section 1 Paragraph 1, the ranch is all matters relating to physical resources, seeds, feed, tools and farm machinery, farming cattle, harvest, postharvest, processing, marketing, and enterprise (UU RI). The general livestock objective is to get profit based on the application of these principles in the management of production factors that have been put together optimally.

2.2 E-Commerce

Electronic Commerce (E-Commerce) is essentially an activity of selling and buying over the internet, even though e-commerce is not just that. E-Commerce is all electronically mediated information exchange between organizations and external stakeholders (Chaffey, 2009). There is a different perspective on e-commerce (Kalakota & Whinston, 1997), that is:

1. Communication perspective. According to this perspective, e-commerce is the delivery of information, products or services, or payment by electronic means.
2. The business process perspective. According to this perspective, e-commerce is the application of technology toward the automation of transactions and business workflow.
3. A service perspective. According to this perspective, e-commerce allows cutting costs at the same time as long as it remains improving the quality of the product / service and speed distribution.
4. An online perspective. According to this perspective, e-commerce provides an opportunity to buy and sell products / services and information by using the Internet and other online services.

Look at the goals that have been described above, it can be concluded that e-commerce is a system built with the aim to improve efficiency and effectiveness in business by utilizing information technology. E-commerce also can improve the quality of products / services or information and reduce the costs that are not needed. So the price of the products / services or information can be suppressed in such a manner without compromising on quality.

2.3 Marketplace

Marketplace is a place where buyers and sellers meet. Electronic Marketplace can also be called virtual or do not occur traditionally, in other words, sellers and buyers meet indirectly and do not need to be face to face. Similarly, the transaction, the transaction between the seller and the buyer is done by using the platform provided by the marketplace operator. The marketplace operator have several function include: providing openness between two persons who will conduct transactions, trust, a safe place for many parties, provide services free of charge and can be reached by everyone. Some of the parameters that must be considered by the marketplace operator including, online payments controlled, catalog and inventory the seller, the seller and / or buyer that is reliable, guarantee, etc. (Corrot & Nussenbaum, 2014). Here is an illustration of the marketplace:



Figure 1. The Illustration of Marketplace (Corrot & Nussenbaum, 2014)

2.4 Purchasing

Purchasing is an event or action taken by two persons with the aim of exchanging goods or services by using a legitimate transaction and both have an agreement on the deal. Purchases can be divided into two types, namely on cash and credit purchases. Online purchases are purchases that made via the Internet. Online purchases can improve cost and time efficiencies for customers. Customers can get the same product at a lower price, and customers can see a diverse selection of products and services. Customers also can compare products from multiple websites and find a lower price. Purchasing via online can also be done anytime and anywhere, and can make it easier for buyers do not need to reach the seller's place (Wang, 2011).

2.5 Iterative Incremental

Iterative incremental is a combination of iterative and incremental development model. Each model has a different meaning. Iterative is strategy rescheduling conducted in system development, to revise and repair of parts of the system. Incremental is strategy and scheduling stages in the development of the parts of the system were developed at a time and a different level and when finished, the parts will integrate with each other (Cockburn, 2008).

Advantages Iterative Incremental development model are:

- Smaller project failure, better productivity with their evaluation of each iteration.
- In this iterative method of user feedback ynag done early, so that the improvement of the system closer to user needs.
- It is suitable to be applied to the development of the system where the requirement is still unclear.

2.6 Software Testing

Software testing is an activity to verify and validate whether the software is running properly and in accordance with the objectives. There are two main things to do in testing, verification and validation. Verification Testing is a test to make sure the software can implement functions properly. Validation Testing is a test to make sure the software is implemented in accordance with the requirements (Pressman, 2010).

Functional Testing is also known as black-box testing because in testing, testers just try certain functions and observe the results. Functional testing covers almost all of validation tests that check the functioning of the system (Perry, 2006). Functional testing following:

- Unit Testing: This test verifying that proper function.
- Integrated Testing: The system running the task more than one database or an application to verify that the task accurately.
- System Testing: This test simulates the whole system and verify that all goes well.
- User Acceptance Testing performed by the user in question.

Usability Testing is a kind of test for assessing the ease of use of the application. This test can be done in various ways like observation to the user, usability surveys, and beta test. The objective of usability testing is to make sure that the application is easy to understand and use (Perry, 2006).

3. METHODOLOGY

There are two methodology for this research.

3.1 Conceptual Model

The conceptual model in this research consists of three main parts: input, process and output. Input of this research based on the present condition. Currently, livestock actor still use the traditional way of doing transactions livestock products. They survey livestock products directly and conduct transactions through livestock group in their region. Other conditions, livestock actor has not received similar information, so there are gainers and losers. So researcher searching literature hat support to resolve the problem.

In the process of design and development of e-commerce Angon subjects that involved are breeder, livestock users, the livestock industry, super admin, admin funds, and admin complaint. This research uses iterative incremental method, Codelgniter framework as programing language and MySQL as database management. E-commerce Angon require a web server for web-based and users can access through by their browser. The output of this research is the e-commerce Angon that can be used by livesock actor that has several features.

This research focuses on the purchasing process so that the subject needed is livestock users and breeder and the output of this research is a feature for them. They act as the buyer who can make transactions until confirm receipt of the goods.

3.2 Research Method

The research method is a stage while conducting this research. This research method is divided into three main stages: identification stage, system development stage and conclusions and suggestions stage. At identification stage, identified the formulation of the problem, research

objectives, constraints problem, literature, data collection and initial planning. At development stage is done using iterative incremental method which has four phases: inception phase, elaboration phase, construction phase, and transitions phase. And at the conclusions and suggestions stage will conclude the research results and provide suggestions for future development.

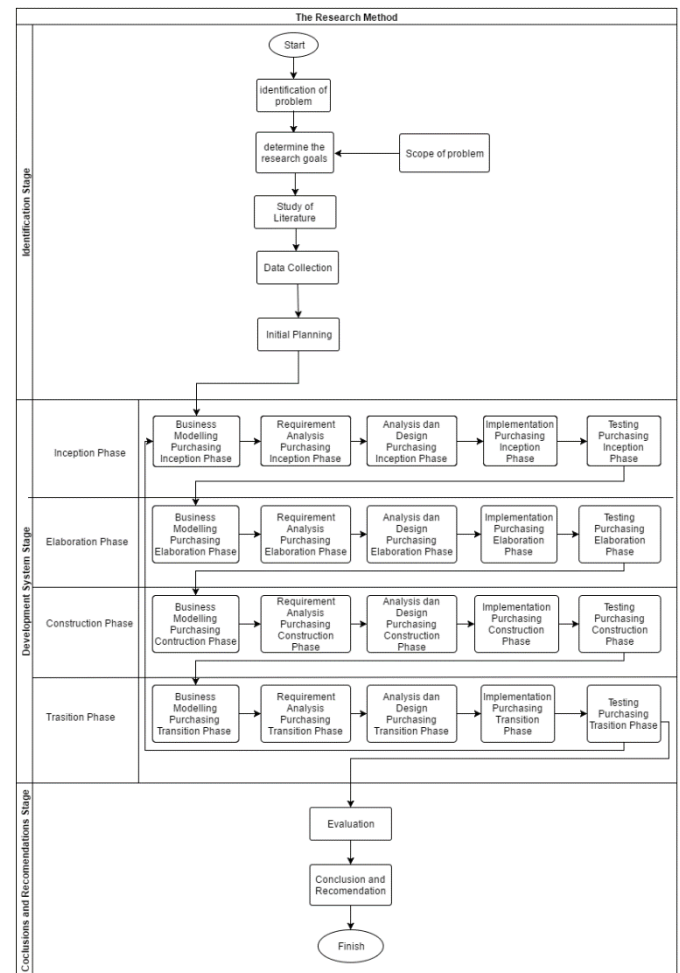


Figure 2. Research Method

4. RESULT AND DISCUSSION

The process of making e-commerce Angon on the purchase side is divided into four increments. Here is an explanation of each increment of e-commerce Angon on the purchase side :

4.1 First Increment

At the first increment was designed function to login, registration and logout for livestock actor in purchase side. Livestock actor included as buyers are breeder and

livestock users. Here's the results of the first increment.

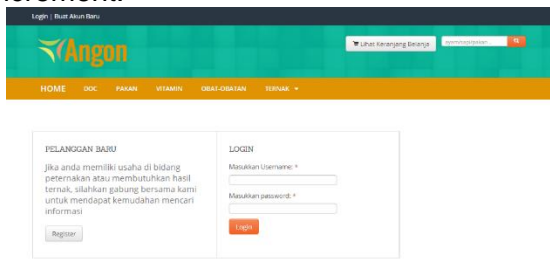


Figure 3. Login Page

4.2 Second Increment

In the second increment was designed function to purchase. The purchase process starts from buyers searching and selecting products, entering into a shopping cart until the customer checkout. Here's the results of the second increment.

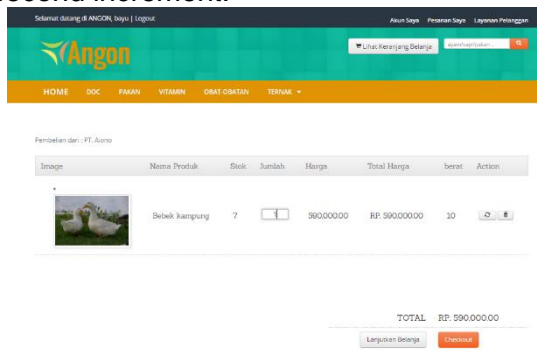


Figure 4. Shopping Cart Page

4.3 Third Increment

In the third increment was design function to consist of a confirmation process of confirming payment, confirmation of receipt, check order status, and view purchase history. Here's the results of the third increment.

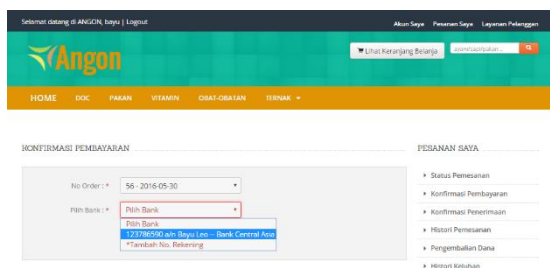


Figure 5. Confirmation Page

4.4 Fourth Increment

In the fourth increment function is designed to review and compare product features starting from the buyer provides a review and see the results of the review and the buyer makes the compare products to make it easier to compare products. Here's the results of the fourth increment.

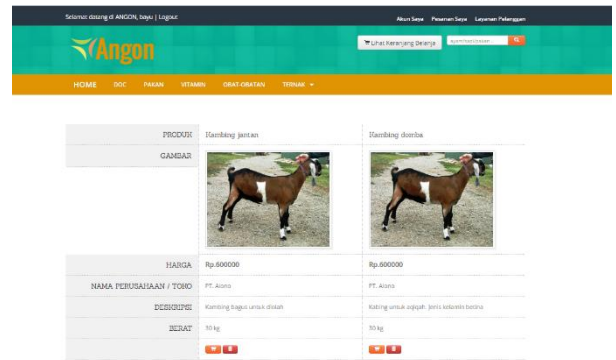


Figure 6. Compare Product Page

This research test to make sure the system is running properly and in accordance with user needs. Researchers conducted two types of tests that unit testing and usability testing. The test units were tested by the developer to ensure the functionality of the system is running correctly. While usability testing were tested by potential users of e-commerce to gain feedback. Based on the test unit, from 12 scenario that has been done, all of the proper function. While based on the results of usability testing showed that prospective users be helped with their e-commerce Angon because it can help them in the transaction of livestock products.

5. CONCLUSION

The conclusion of this research are:

1. E-commerce Angon help breeder and livestock users to obtain livestock product information.
2. E-commerce Angon help breeder and livestock users to make purchases of livestock products.
3. E-commerce Angon help breeder and livestock users in selecting livestock products as needed before deciding to make a purchase.

In the process of designing and manufacturing of e-commerce Angon there are testing process. Here are some suggestions results from testing for next development e-commerce Angon :

1. Need for improvements to the user interface of e-commerce Angon to make it more interesting.
2. Add the security function to store data livestock actor.

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