DESIGNING ONLINE SHOP IN ORDER TO IMPROVE CUSTOMER RELATIONSHIP MANAGEMENT (CRM) AND PRODUCT SALE
(Case Study Pet Shop Online Muezza Cattery)

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Abstract – *The tightness in business competition nowadays force us to make some strategic steps to deal with it. By using the benefits of technology and marketing concept to improve costumer relation management, one of the steps that can be taken is designing online shops. Besides improving costumer relation management, the goal of designing online shop is as an alternative media for promoting products that in turn can improve products sale.*

The tools that was used ian this Information system design is Data Flow Diagram (DFD) and Entity Relationship Diagram. Database was design by using MySQL, webserver by Apache and Aplication web by PreProcessor Hypertext (PHP).

The result of designing online shop is some new feature. Some of the features are new costumer registration, product(s) search in the catalogue, ordering product , and write reviews.

Keywords: *online shop, customer relationship management, web design*

1. Introduction

The current regional economic developments are influenced by some of the changes going on in the world. Fluctuation of environmental changes are reflected in the global market, rapid development of technology, and changes in socio-culture. This has caused many changes and affects various aspects of community life across the country. The changes has also affect an organization's ability to compete and maintain its continuity of life. The survival of a company is not only determined by the superior quality of the product but also by the service that the company provides to consumers in the areas of customer relationship management.

In building a relationship, companies must be able to provide value to customers. Therefore when building a relationship it is important that a meeting point between the interests of the company meets with customers expectations and desire to get products or services.In this case, when a company through CRM seeks to add value to its costumers, one approach is by implementing the e-commerce application in the form of an online shop. This step is expected to encourage consumers to remain loyal to the company and increase product sales.

E-marketing or e-commerce can be seen as a new way to deal with customers. It is a dynamic set of technologies, applications and business processes that connect businesses, consumers and communities through electronic transactions where trading of goods, services, and information are all conducted electronically [3]. Thefore the purpose of this design is to implement an e-commerce applications in the online shops which are expected to enhance value to costumer relationship and eventually increase sales and profits for the company.

2. Books Review:

2.1 Customer Relationship Management (CRM)

The definition of customer relationship management (CRM) is 'The infrastructures that enable the delineation of the increase in costumer value, and the correct means by which motivate valuable customers to remain loyal indeed to buy again'[1]. Furthermore John W Gosney in his book Customer Relationship Management essential defines CRM as a strategy which has numerous aspects, but the basic idea is for the company to become more customer-centric. [6] Also another definition of CRM refers to the methodologies and tools that help businesses manage customer relationships in an organized way.

For small businesses, CRM includes:[7]

- identifying and targeting their best customers, generate quality sales leads, plan and implement marketing campaigns with clear goals and objectives;
- help form individualized relationships with customers (to improve customer satisfaction) and provide the highest level of customer service to the most profitable customers;
- provide employees with the information they need to know their customers' wants and needs, and build relationships between the company and its customers

The Benefits of Customer Relationship Management, includes: [5]

1. Encouraging customers loyalty

CRM applications allows companies to use a chisel-point information of all contacts with customers, both via the web, call center, or through marketing and service staff in the field. Aksepsibilitas and consistency of this information allows sales and better services with a variety of important information about the customer.

2. Reduce costs
With the ability to serve its own sales and customer service, there are costs that can be reduced. by using web technology for example, CRM application allow a more cheaper sales and service by a scheme marketing program that is more specific and focused on the right customer and the right time.
3. Increase operational efficiency
Automation sales process and service can reduce the risk of decline in service quality and reduce the burden on cash flow. The use of web technology and call center, for example, will reduce the bureaucratic obstacles and costs, and administrative processes that may arise.
4. Increased time to market
CRM applications allows us to bring products to market more quickly with better customer information, trend data of purchase by customers, and also integration with ERP applications for the purpose of better planning. With web sales capabilities, the constraints of time, geography, the availability of data sources could be eliminated and speed up the sale of these products.
5. Increased income
CRM applications provide the information to improve the income and company profits. With the CRM application, the sales and service are done through the website whicallows global sales opportunities without the need to provide a special effort.

Kotler in "Manajemen Jasa" by Ciptono defines the customer satisfaction level as 'a degree of a persons feeling after a performance compared to the persons expectation'.[4] Therefore,customers will not be satisfied if the customer perception and expectation is not being met. Customers will be satisfied if the perception is either same or more than expected.

2.2 E-Commerce and Online Shop Model

E-Commerce is defined by David in Onno as a " dynamic set of technologies, applications and business processes, that connects companies, customers and community through transactions of trading of goods, services, and information" [3]. In general, E-commerce can be classified into two types, Business to Business (B2B) and Business to Consumer (B2C). Online shop model is a combination of transaction processing, security, payment online and product information that allows traders to sell their products online. This model is a prototype of an e-comerce application where sellers and buyers can interact directly. Online Shops is an important media for the purpose of selling products and services at the possible merger of sale of the product, regristation, orders, and other elements that makes it easier to shop on websites.

2.3 Tool Design

Tool design information on the online stores system include context diagrams, charts alir, data entitiy, relationship diagrams, data dictionary and Structure Chart. [8]

1. Context diagram
A Context diagram are diagrams that represent all external entities that may interact with a system.This diagram is the highest level view of a system, similar to Block Diagram, showing a, possibly software-based, system as a whole and its inputs and outputs from/to external factors.
2. Data Flow Diagram (DFD)
A Data Flow Diagram (DFD) is a graphical representation of the "flow" of data through an information system.With a dataflow diagram, users are able to visualize how the system will operate, what the system will accomplish, and how the system will be implemented.
3. Entity relationship Diagram (ERD)
ERD Shows relationship of data elememnts. ERD uses a standard set of symbols to represent each of these defined data groups and then proceeds by establishing the relationships between them. Entity relationship diagramming is all about identifying entities and their relationships and then drawing a diagram that accurately depicts the system. This applies equally to the design of a new system or the analysis of an existing one. The end result of entity relationship diagramming should be a clear picture of how information is stored and related within a proposed, or existing, system
4. Data Dictionary
The data dictionary is a set of entries (definitions) of data flows, data elements, files. and data bases. The data dictionary enmes are partitioned in a topdown manner. A database dictionary contains a list of all files in the database, the number of records in each file, and the names and types of each data field. data dictionary entries and in data flow diagrams
5. A Structured Chart (CS) is a chart, which shows the breakdown of the configuration system to the lowest manageable levels. It is used to show the hierarchical arragement of the modules in a structured program. Each rectangular box represents one module. The names of the modules are written inside the box.

3. Case Studies and Data Processing

Muezza Cattery Pet-shop company is originally a family company established since 1998. Initially the company only supplies pets to the pet-shops in Jakarta. Currently, the company's pet-shop is based in Pulo Gebang Permai Blok G11 no.11 and has extended its business by opening a few Pet-shop branches in Jakarta and Bandung.

The sales system that is applied is by directly displaying the pets and products in their central and branch stores. The sales promotion that are conducted is through print media.

3.1 Interviews and Observations

The company agreed to allow the researcher to design an online shop to improve the CRM. The company acknowledge the importance to maintain a close relationship with the customers. In addition they believe it can also act as a form of promotion and enhance their market share.

Data collection for the online shop design is done through interviews and observations. The results identify the needs of consumers as bellow

1. receive a complete, clear and easy access of information
2. to purchase the items with easy, safe and fast service
3. receive discounts and special offers
4. ease of interactive communication and discussion
5. receive satisfactory response to customers complaints or suggestions
6. Obtain the required additional information on pet care such as hygiene, nutrition and balanced pet food

3.2 General Concept of web-based Applications

Online Pet Shop design uses WEB technology as the main system, in which each script programming for this WEB uses preprocessor hypertext language (PHP) and hypertext markup language (HTML). The mail server that is used is Mdaemon Service. The web server that is used is Apache which enables the process commands and communicate with the Mail Server so that both sever can serve the customer optimally.

3.3 The design shop on line

For the online shop design, a tool is needed to describe the process and the flow of data which enables the researchers to design a system that meets the needs that has been formulated on the research purposes. The tool used consists of context diagram, data flow diagram, database entity relationship diagrams and data dictionary.

a. Context Diagram

Context diagram provides clear restriction on entities within the system that is observed. This depiction below provides an explanation of the parts that are included in the system (internal entity) and the parts outside the system (external entities). The entity's in the internal system consist of administration (system administrators on-line store) and the company , while the external entity is the customers.

Figure 1.Context diagram

b. Data Flow Diagram (DFD)

Before describing the application system DAD Muezza Cattery, we firstly need to describe the process or activity that occurs on the core system. As an example, the processes performed on the consumer on-line store has a flow as follow:

- First customers will see or find items that have a web page on the online shop site. Customers can search products by keyword or enter a keyword in the available fields to find the product of interest. This is intended to save time in the search process of a product
- If the consumer decides to purchase the product, they must first login as a member if he is registered as a customer. If not, the consumer must register first by filling out the form of the costumers private data. When the login or registration process is finished, the consumers will be confirmed through the web page display
- The products that are purchased will be included in the shoping chart. Afterwards the customer will be given three options: update the cart, continue to shop for another product, or proceed directly to the transactions process
- If the customer chooses to process the transaction, a delivery and billing address will be displayed. Afterwards, the customer can see a summary of its status order via e-mail.
- For the customer payment, the payment system is done by two ways: bank transfer and Cash on delivery
- If customers choose to transfer, the Administrator will check the customer payment order. If the customer has payed, the Administrator then creates an invoice or slip package to the packaged product marking the delivery process. Afterwards the administrator provides an status order to the customer that the product will be shipped immediately.
- After the product has reached the destination, the customer signs the invoice that indicates that the product has been received by the customer.

The process of consumer transactions with DAD can be seen in figure 2.

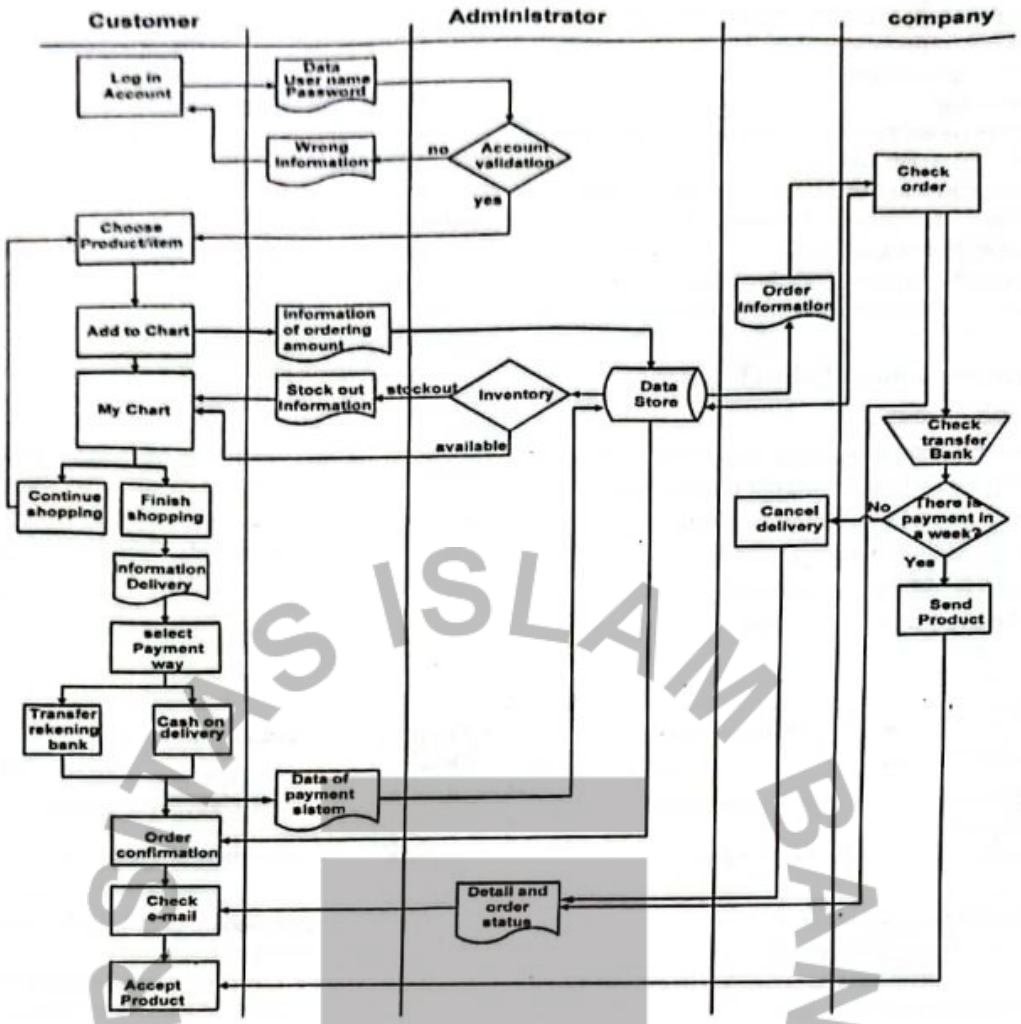

Figure 2. The process of consumer transactions with DAD

c. Home page chart structure

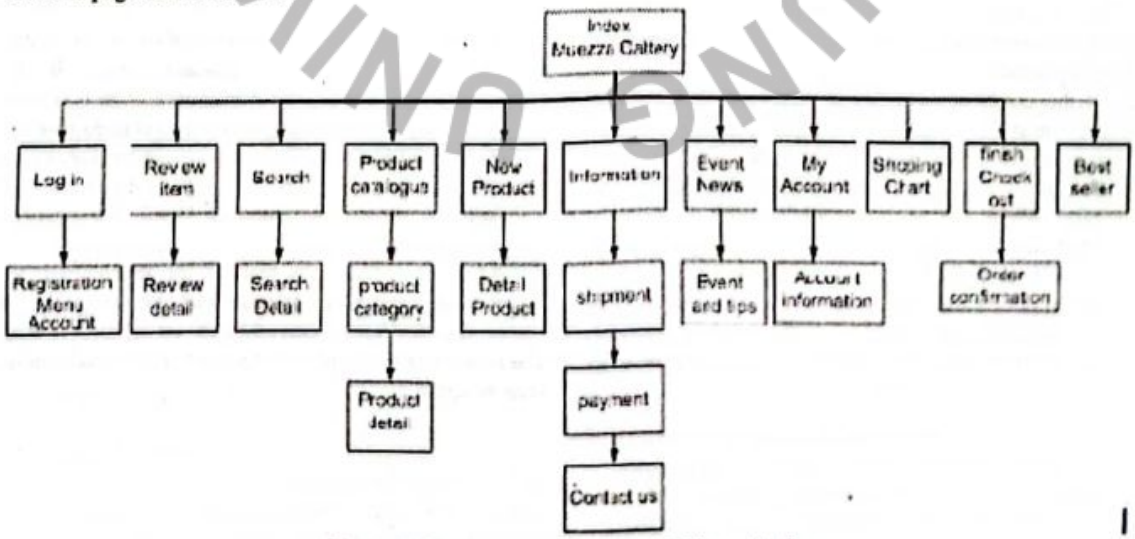

Figure 3. Chart structure from the Online web shop

d Home page display

The home page display serves to display information in accordance with the costumers need of information. It is also used for the purpose of collecting costumers information when they log in to the site. An example of the home page display can be seen in figure 4.

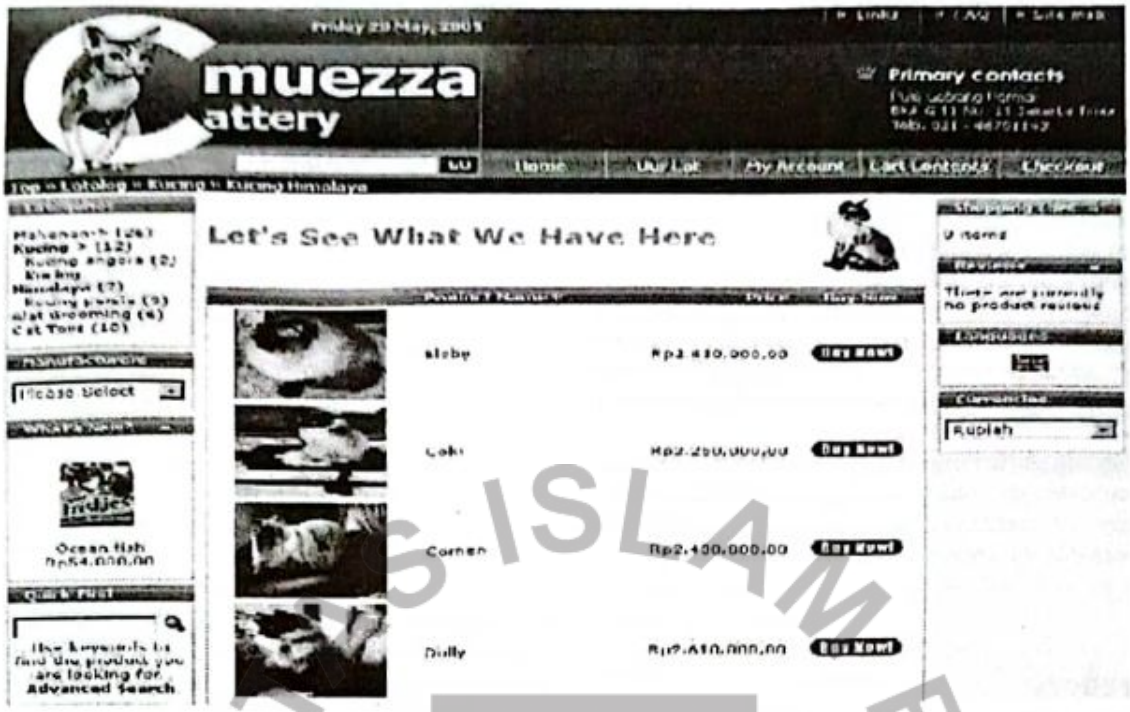

Figure 4. Display home page: menu catalogue product

6. Analysis

The design of the online shop is arranged to make easier interaction with costumers. The menu of the services available includes: Contact Us, Search Tool, Shopping Chart, Price Information, Currencies, Latest Product Information, Best seller, Special Product (discount), Write a Review, Tell a Friend, Order Confirmation, Billing Information, Shipping Information, Order Status Reports, FAQ (Frequency answer question), News and Tips page, and Menu. The services were design to meet the costumers satisfaction when shopping at the online store. The menu of services can still be developed as needed.

In designing the system, the researcher aimed for the sytem design to be as ideal as possible. However, a system will never reach abosulte perfection. This online shop design also has some weakness, which are:

1. Not yet integrated with the procurement system of goods.

   System design Online shop at this time is not yet integrated with the system information relating to the procurement of goods or stock in the warehouse.

2. Payment is still off line

   In the online shop design, the way of payment available is transfer via a bank account and cash on delivery. Payment transaction online is not yet available although the system is already designed with the module that enables online payment transaction. However, there is not yet a cooperating system with the banks that enables the validation of credit card online transaction with the company.

Some important factors in the design of this online shop that are expected to improve customer relation management are:

1. Provide a more efficient purchasing services so that it can respond to customer requests more quickly and accurately
2. Provide a complete and clear information of goods and services and an easier way to to access the information
3. Provide as many bonuses, special offers, and discounts
4. Provides special attention to the input / feedback from customers
5. An increase of interactive communication with the costumers
6. News and Features provide tips page in which costumers receive additional information they require such as: pet care, products and current events, etc.
7. Customer ease the criticism or suggestions to the media as they have direct access through the company e-mail. This giving of information also acts as good feedback for the development of the company

Besides improving relationships with customers, the online shop is a web site that has the same fuction as a showroom to promote products. It's advantage is that it provides wide market coverage to broad custumers that are not limited in space and time. The technology that is used is the internet, and therefor available to all those connected to the internet.

7. Conclusion:

- The online shop design can support the Customer Relationship Management because it provides a more variatif, interactive and effective communication with customers
- Implementation of Customer Relationship Management Web-based company wil also get detailed information about their customers. These information includes private customer data, criticism, suggestions on what customers needed, that is important for enhancing the service and the changes that match the customer desires
- Implementation of a Web-based Customer Relationship Management is expected to improve the quality of services by increasing customer satisfaction and loyalty which in turn is expected to increase company sales
- With a web based e-commerce Application, companies can promote the products with a wider range of marketing because the Internet can be accessed by all people

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