



## Analysis and Design of E-Commerce Applications on CV XYZ With User Centered Design Method

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**Abstract**—Along with the rapid and sophisticated development of technology, it has had a huge impact in today's life. This is demonstrated by the increasing development activities and development of information technology. One of the means used for the development of information technology is the use of computers. The purpose of this research is to analyze and design a website-based E-Commerce application so that it can help salesmen to get as many car purchase customer databases as possible in order to be followed up in order to realize car purchases, attract many customers and maintain customer loyalty in order to further improve the sales process on the CV. XYZ. The method used for is with user centered design where in this method seluruh activity involves the user. The result of this study is to produce a website-based application system design with the application of E-Commerce so as to make it easier for costumers to know the information of car loan simulations and monthly promos available at CV dealers. XYZ and also facilitated by being able to access independently through PCs, laptops and by using smartphones whenever and wherever consumers are, so as to increase sales on CV. XYZ

**Keywords:** E-Commerce; Website; Application; Promotion

### 1. INTRODUCTION

Data and information is a unity that can not be released in the development of technology today, promoting products with a website (e-commerce) will be more profitable and also facilitate the process of business development and promotion so as to save costs. CV. XYZ is an authorized Toyota car dealer located at Jalan Timor Raya No. 78 Pasir panjang, Kelapa Lima District, Kupang-NTT City. Toyota cars are one of the best selling car brands in Indonesia as evidenced by always outperforming the national market share. Toyota cars are also a very complete car brand with types ranging from commercial cars, hatchbacks and passangers. Not only the purchase of ritail with tough power and a very attractive model, Toyota cars are also often chosen as operational vehicles or offices in government offices or private offices so as to help to increase sales of Toyota cars.

One of the businesses in the field of toyota car sales is in need of a system that can help sales to facilitate and facilitate sales performance, currently sales promotion is still experiencing constraints including the willingness of consumer databases, recording sales transactions for sales, the introduction of products sold quickly without the need for manual browsur printed, the purpose of this research is to help sales in promoting toyota car products to consumers and increase sales , the advantages on this website there is a credit simulation feature for costumers, so as to help increase the productivity of car sales. Based on the background that has been described, the author is interested in conducting research with the title of E-Commerce Application Analysis and Design on CV.XYZ With User Centered Design Method. the selection of user centered design method approach of this method because the main aspect in this method is the involvement of all elements of the user in the process of the process in this study will also use php and Mysql programming languages, DFD, ERD and HIPO model software design.

Several previous studies related to this study as follows research conducted by Lubis (2017) under the title Web-Based Application Interface Design Using User Centered Design In Learning Diversity Culture User Centered Design (UCD) aims to help design according to the needs oriented to usability Users. Once arranged according to these needs, the application is modeled with unified modelling language (UML) so that it is clear what the systematics and usage operations of the application are designed to look like. UcD Usage can be used in designing a cultural diversity learning application in Web-based Asahan. The elements in this app are graphically depicted and can show a close relationship between its elements [1].

Research conducted by Firmansya et al (2020), under the title User Interface And User Experience Mobile Application Sibengkel For Meet User Needs With User-Centered Method Design (UCD) SiBengkel is an app designed to make it easier for motor users to perform ordering queues or service motors online at the workshop listed in the application and nearby with the user of the application. SiBengkel startup creation aims to solve problems in the service of many vehicles and also make it easier for the workshop in managing queues soaring service, There is an online booking service feature, and there is also a sales feature of parts Online. The importance of UI/UX in app development to make it easier for users to use the application, get a response from the interaction and know the needs of the user. On design using user-centered design (UCD) method, this method focuses on the needs of Users. The result of the research is a design solution on SiBengkel Application that is acceptable by users with a SUS score of 74 [11].

Research conducted by Marsudi et al, (2020) with the Title Design Of Sparepart Sales Application System On Toko Kim Jaya Motor The purpose of the research is to make it easier to manage the sales data of Kim Jaya Motor Shop so that it becomes more effective and efficient because it can help solve the problem of work related to the management of sales data. The research method used in the analysis and design of java-based sales system is qualitative descriptive,

namely by direct observation, interview with related parties and also by doing documentation to get the information needed. The result of this study is a computerized system that can make it easier for store employees to make sales transactions [12].

Research conducted by Kurniawan (2017), with the Title Design Application Motorcycle Sales On Cv. Yamaha SBM motorcycle sales application can handle the system so that later this system able to present sales information and reports and can present sales level information annually in the form of graphic presentations. Besides that this system uses a network of client servers in order to facilitate the dissemination of information. With the presence of This application system CV. Yamaha SBM can find out presenance of motorcycle sales in the form of sales reports and graphs [13].

## 2. RESEARCH METHODOLOGY

### 2.1 Application Design

Application is program ready that can be used to execute the commands of the user of the application with the aim of obtaining more accurate results in accordance with the purpose of creating the application [1].

### 2.2 Applications

An application is a system that runs on a computer device whose instructions have been arranged in such a way that the computer can process inputs into inputs that are useful to its users [2].

### 2.3 E-Commerce

E-commerce is a process of disseminating, buying, selling, marketing goods and services through electronic-controlled media[3], e-commerce can also be distinguished into several types and characteristics, namely business to business (B2B), business to customer (B2C), Customer to customer (C2C) and Customer to Business (C2B [4].

### 2.4 User Centered Signed (UCD)

User centered design (UCD) is a method of developing or designing a system. UCD also supports tools, techniques, processes, procedures to assist with intercatve design built on experience [5]. There are several homeworks that should be considered in the UCD method, namely focusing on the user, focusing on integrated design, interconnective design and user testing [6].

### 2.5 PHP

PHP, is a programming language with which it has a public license or in other words open source users can develop PHP function codes with the need. PHP programming can be written in two forms, namely writing PHP lines of code in a single file and writing PHP code on html pages [7].

### 2.6 Mysql

MySQL is a database that connects PHP scripts using the same query commands and escape characters as PHP. And MySQL also has a user friendly look that makes it easier for users to operate their system [8].

### 2.7 Research Flowchart

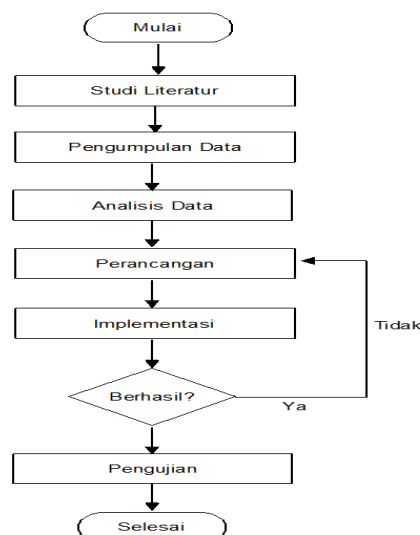


Figure 1. Research Flowchart

Based on the Flowchart in Figure 1, it can be explained as follows:

- Data collection of toyota car types, car specification data, car price data, and monthly promotional data conducted by direct observation to CV car dealers. XYZ.
- Library studies are conducted by looking for supporting reviews in the form of books, journals, both printed and online versions
- Observations carry out direct observations of the objects studied which observations are made at cv car dealers. XYZ JL. Timor Raya No.78 Kelapa Lima District, Kupang City. By observing all the process of buying and selling transactions.
- data analysis by analyzing data on the collection of data on toyota car types, car specification data, car price data, and promotional data every month, which will be used in the implementation of this study.
- System design by designing a system database design that corresponds to the data of the car dealer CV. XYZ, analyzed and ready to be designed with mysql
- Implementation of visual studio code and sublime text programming language to build the system.
- System testing at this stage the application will be executed on each interface form according to the function keys created and the results will be seen at the time the application is run.

### 3. RESULT AND DISCUSSION

#### 3.1 System Development Methods

As for system development, the method used is User Centered Design (UCD) method chosen by this method because of user involvement in the whole process. Users not only comment on design ideas but also have to be intensively involved in all aspects of planning and the role of the system. Model UCD method as shown in figure 2 below.

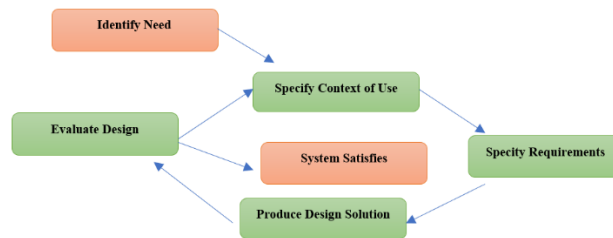


Figure 2. Method Used Is User Centered Design (UCD)

- The first stage of the UCD process is to context the use of identification of the people who will use the product, what they will use it for, and under what conditions they will use it.
- The second stage determines the requirements of identifying business requirements or user objectives that must be met in order for the product to succeed.
- The third stage makes the design solution part of this process can be done gradually, building from rough concept to complete design.
- The last step is to evaluate the evaluation design ideally through usability testing with actual users – as integral to quality testing for good software development.

#### 3.2 Software Design

The software design starts with a system flowchart that shows the workflow or what is being worked on in the system as a whole and explains the order of the procedures in the system [9].

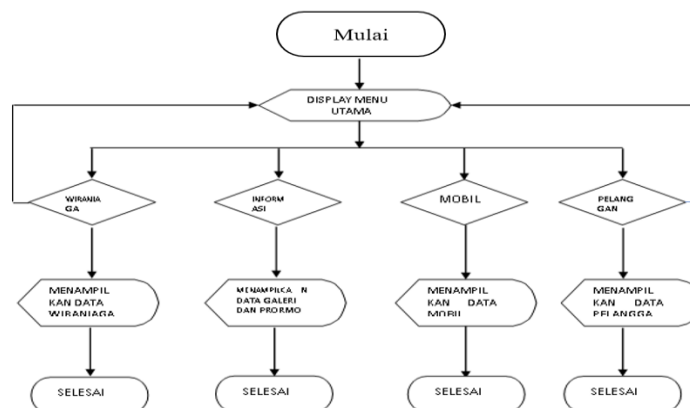


Figure 3. Flowchart Sistem

Entity Relationship Diagram (ERD) is a technique used to model the data needs of an organization as a condition in system development [10].

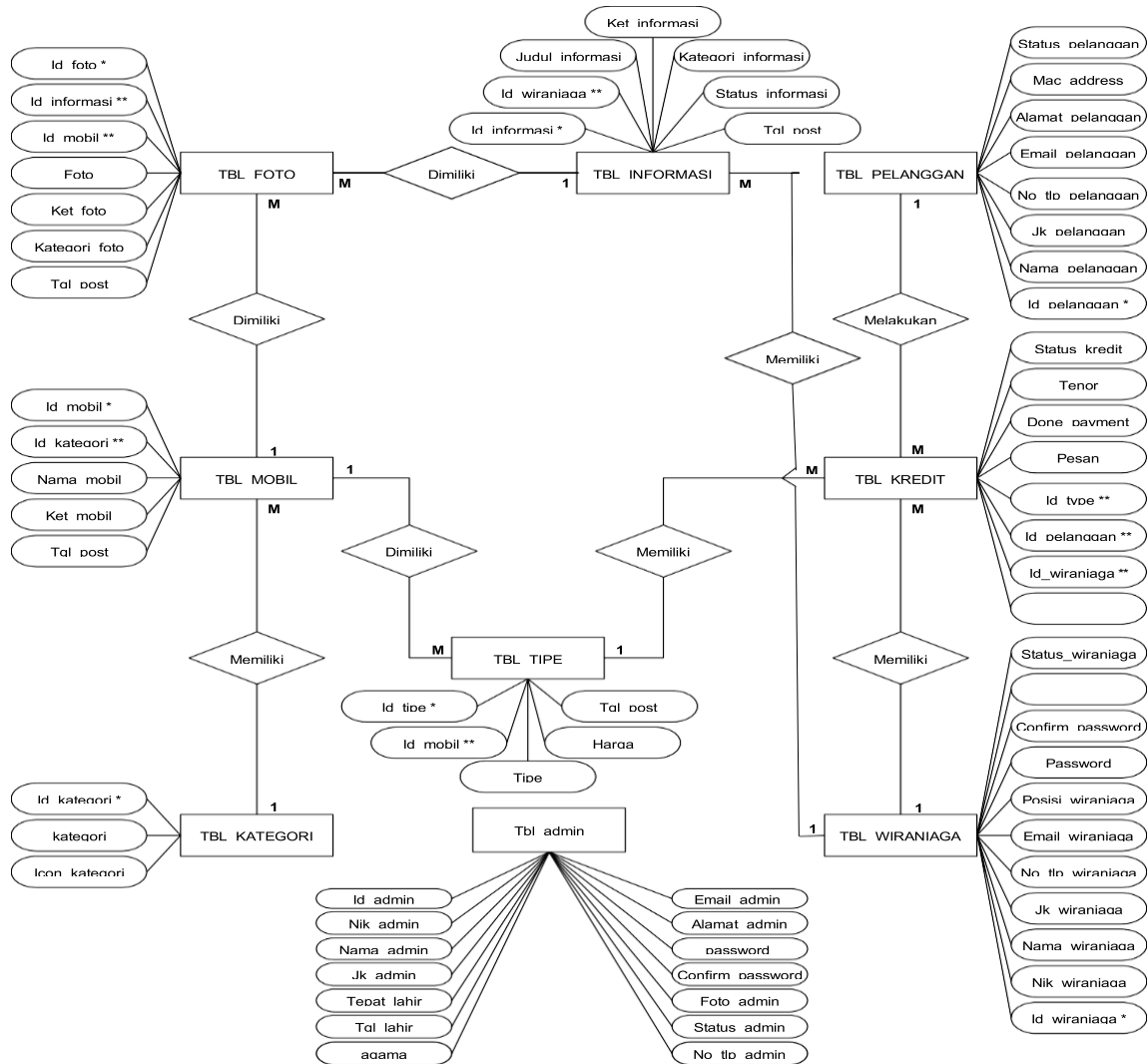


Figure 4. Entity Relationship Diagram (ERD)

### 3.3 Implementation Program

The admin input interface is an interface created on cv websites. CV.XYZ which contains forms inputting personal data admin. The admin input interface view can be seen in the following figure 5.

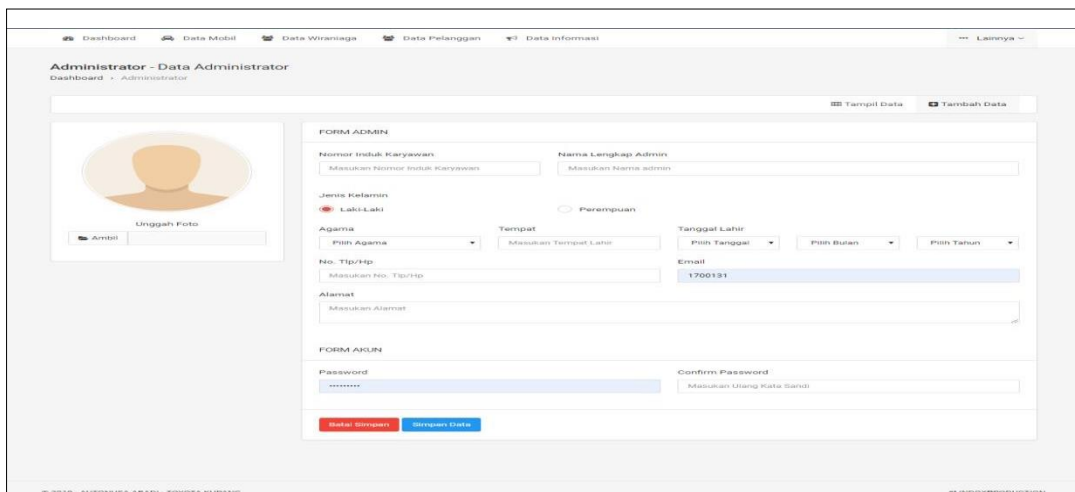


Figure 5. App Home Admin Interface Design

The information data input interface is an interface created on the CV website. XYZ which contains forms input data gallery information and promo. The interface view of data input information can be seen in the following figure 6.

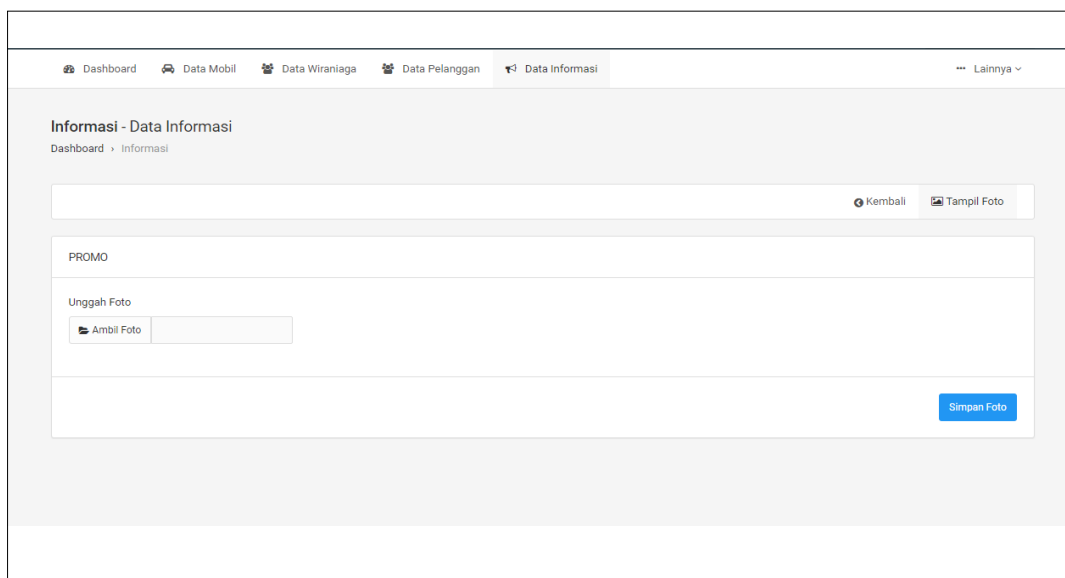


Figure 6. Design Interface input data information

Car data interface page is a page that contains forms input admin data, on this page can also be done the process of input and save car data. The interface view of the car data input interface can be seen in figure 7 below.

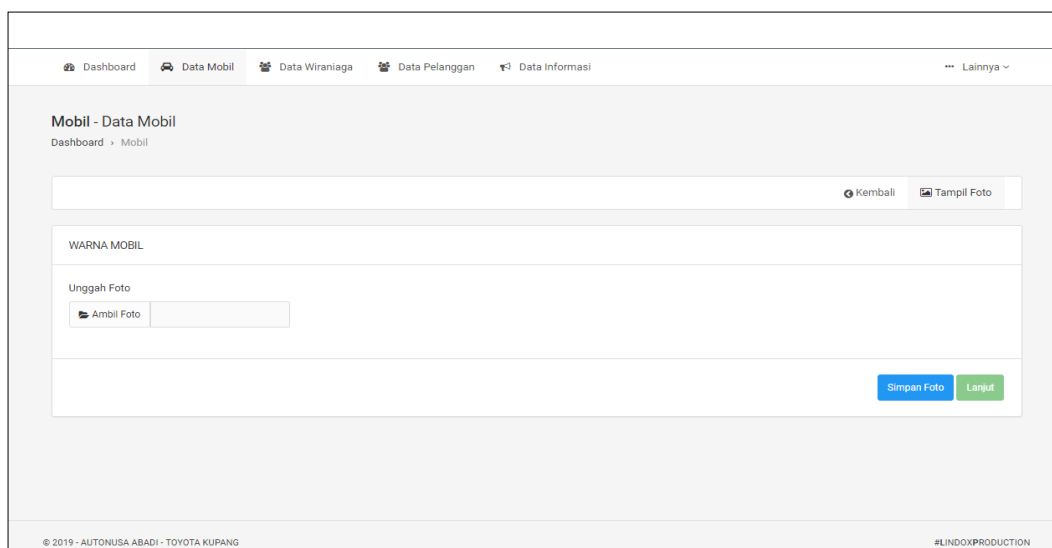


Figure 7. Design of car data input interface

## 4. CONCLUSION

Based on the descriptions and discussions that have been presented this research produced an application design to help sales sales of toyota cars to consumers so as to increase the number of sales and improve service to customers sacara electronics. For the development of the system in the future can be added design of this application system for the android version, CV.XYZ must also prepare a good infrastructure to support this system in the future, consumer data security must be maintained well and cooperate with online-based service providers

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