

Development of CRM Module on Application Backpacker to Manage Customer Needs

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Abstract: One of the best strategies to compete in the midst of business competition is to maintain good customer relations. Therefore in providing services, each company is required to be able to maintain good relations in harmony. BackInd is an application- based service company that focuses on the tourism sector and homestay. This company has difficulties in getting new customers and retaining old customers. To overcome these problems the development of the Customer Relationship Management (CRM) module on applications is a relevant solution to overcome these problems. The method used is Rapid Application Development (RAD). The purpose of this study is how the implementation of the CRM module in the Backind application can be effective in maintaining good relationships with customers. The output of this research produces 4 features: Log activity features, promo features, complaint management features, and survey features.

1 INTRODUCTION

At present information technology is experiencing very rapid development and has entered almost all fields including the business field. Every company should take advantage of this moment so that it can have added value so that it can continue to compete. One of the added values offered is the aspect of relationships with customers. Where when a company has a good relationship with customers (CRM), these customers will be loyal to the products and services offered by the company. But in its development, now many companies are oriented towards consumers, so the products or services sold are tailored to the customer's desires. This change raises a fairly tight competition in the business world because the products or services sold are more or less the same. Kotler shows that there are three important business orientations, namely products, production, and sales (Buttle, 2007).

Startup BackInd is a company engaged in tourism where Startup Backind facilitates tourists to choose suitable tourist attractions and help tourism managers. The Backpacker Management System is a product built to facilitate the needs of tourists and business managers. The Backpacker Management System application is a website and Androidbased application

where tourists can access services through Android and business managers through the website. The Android service provided by the Backpacker Management System application can survey tourist attractions that you want to visit, if you have found suitable tourist attractions, tourists can purchase tickets to enter the tourist attractions. In addition, tourists can also survey the closest homestays or villas from tourist attractions through the Backpacker Management System application. If tourists have found a homestay place or villa that is suitable for tourists in booking rooms through the Backpacker Management System application. Business managers can access services through a website where the business manager is given the full right to process the Create, Read, Update, Delete (CRUD) products sold.

Related to building relationships with customers Startup Backind has a system that covers all major business processes. Startup Backind in its business process activities has used the website for the main admin and manager of tourism and mobile services for customers. However, the system has not been able to establish good relations with customers, such as attracting customers to conduct transactions, and complaints from customers cannot be channeled properly or not managed properly by the relevant part. Customer Relationship Management (CRM) is a process that can help manage all aspects of

interactions between companies and consumers. CRM is a system of how companies work with customers, solve problems for their customers, attract customers to buy goods and services offered and continue to make transactions. CRM that is built is a system that can record any menu that is frequently visited by users, help provide promo information to users, the survey features to find out what are the advantages and disadvantages of the homestay and tourism visited, and can manage complaints from customers. The system was built using the Laravel framework, the programming language PHP, and MySQL database using the Rapid Application Development (RAD) method. The reason for using the RAD method because it has several advantages such as relatively fast application development time focus on values that can be added value for software quality that is tailored to the needs of the user and the coding that is done so that it can be reused. With the development of services by adding a CRM module,

it is expected to be able to attract prospective customers to become customers and maintain good customer relations in order to keep doing transactions

2 THEORETICAL BASIS

2.1 Customer Relationship Management (CRM)

According to (Turban et al, 2015), CRM is a customer service approach that focuses on building long-term and continuous relationships with customers who can provide added value for both customers and companies. According to (Strauss, 2014), CRM is the process of targeting, acquiring, transacting, serving, maintaining and building long-term relationships with customers. So it can be concluded that Customer Relationship Management (CRM) is a process in obtaining, maintaining and improving profitable customer relationships with the aim of creating customer value. It can be concluded that Customer Relationship Management (CRM) is a process in obtaining, maintaining and improving profitable customer relationships with the aim of creating customer value. There are 3 phases in building good relationships with customers. Each phase supports increasing company relationships with customers. According to (Kalakota, 2001) there are three phases of CRM, namely (1) acquiring new customers, (2) enhancing the profitability of existing customers and (3) retaining profitable customers for life.

2.2 Rapid Application Development (RAD)

RAD is a software process model that emphasizes the short life cycle of development. RAD is a rapid adaptation version of the waterfall model, using the component construction approach (Putri& Effendi, 2018). RAD is a combination of various structured techniques with prototyping techniques and joint application development techniques to accelerate system/application development (Putri& Effendi, 2018). From the definition of the RAD concept, it can be seen that application development using the RAD method can be done in a relatively faster time. The RAD method has 3 (three) main stages as follows (Aswati& Siagian, 2016):

- Plan Requirements → At this stage, users and analysts conduct a kind of meeting to identify the purpose of the application or system and identify information needs to achieve the goal.
- Design Process - At this stage is to carry out the design process and make improvements if there are still design mismatches between users and analysts.
- Implementation - At this stage, the programmer develops the design into a program. After the program is completed in part or in whole, then the testing process is carried out on the program whether there is an error or not before being applied to an organization.

2.3 Black Box Testing

Black Box testing is a testing technique without having knowledge of internal application work. It only discusses the fundamental aspects of the system and has little relevance to the internal logical structure of the system (Khan, 2012).

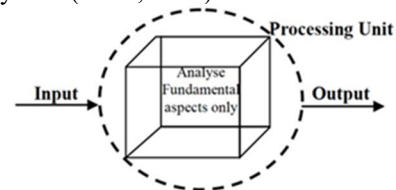


Figure 1: Black Box Testing (Khan, 2012).

Figure 1 illustrates that black box testing treats software as a "Black Box" that is without knowledge of internal work and only examines the fundamental aspects of the system (Khan, 2012). When a tester tests a black box, the tester must know the architecture of the system. Black box testing has sixteen testing techniques. But what is used in this

study are four techniques, namely unit testing, and integration testing.

3 RESULTS AND DISCUSSION

Based on the system development process used is the rapid application development method, as follows, an explanation of the results of all phase based iterations:

3.1 Black Box Testing

The result of this stage is to get a user requirement, namely the need for software development obtained from the results of observations from existing applications. Based on observations there are no features that accommodate relationships with customers. Therefore the application requires some additional features. Additional feature specifications can be seen in table 1.

Table 1: User Requirement.

Requirement Code	Category	Needs	Description
REQ-01.01	Log Activity	Recoueactivity	The process of the user looking for a tourist place/homestay
REQ-02.01	Promo	See promos	The process of viewing promos on the website application
REQ-02.02		Create a promo	The process of making a promo on the website application
REQ-02.03		Promo update	The process of updating promos on the website application
REQ-02.04		Delete Promo	The process of deleting a promo on the website application
REQ-02.05		Broadcast promo	Promotional broadcast process through the website application
REQ-03.01	Complaint Management	Seeing complaints	The process of viewing complaints

Requirement Code	Category	Needs	Description
			through the website application
REQ-03.02		View details of complaint history	The process of seeing the detailed history of the complaints process through a website and mobile application
REQ-03.03		Print complaints	The process of printing complaints through the website application
REQ-03.04		Complaint process	Process complaints through the website application
REQ-03.05		Make a complaint	The process of making a complaint through a mobile application
REQ-03.06		See the complaint details	The process of viewing complaint details through a mobile application
REQ-04.01	Survey management	See survey	The process of viewing surveys on a website application
REQ-04.02		Create survey questions	The process of making survey questions on the website application
REQ-04.03		Update survey questions	The process of updating survey questions on a website application
REQ-04.04		Delete survey	The process of deleting a survey on a website application
REQ-04.05		Answering Survey	The process of answering surveys on a mobile application

3.2 Design Process

At this stage is to carry out the design process and make improvements if there are still design mismatches between the user and the analyst.

3.3.1 Designing CRM

To describe the data contained in CRM information systems carried out structurally from the general process to the process in more detail. The process is presented in the form of Data Context Diagrams for the most common processes, and Data Flow Diagrams (Data Flow Diagrams / DFD) for detailed processes (As, 2013).

- Level 0 Data Context Diagram (DFD)
Data context diagram CRM Information System Backind application has 4 external entities related to the system. These entities are Customers / Partners, Customer Service, Admin, and Marketing Section. For more details, the data context diagram can be seen in Figure 2. Customers are people who receive services from the Backind Application. While Partners and Admin are people who receive reports produced by the system, customer service is the person who serves customers. In addition there is also the Marketing Section, which is the person who promotes the customers, and the last is the Partner who is in charge of entering new product data. No dot should be included after the section title number.

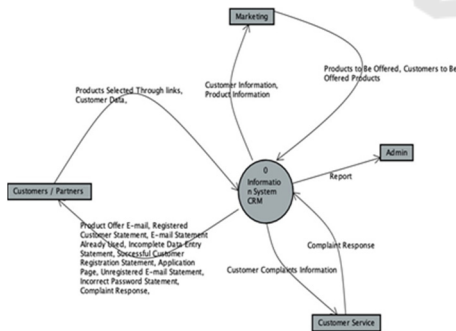


Figure 2: Diagram Kontek Data Backind (As, 2013).

- DFD Level 1
In DFD Level 1 CRM Information System has 7 main processes (see Figure 3), namely: (1) Customer registration process is a process when there are new customers who have never been registered in the Backind Application; (2) Customer login process is a login process for customers who already have a User ID, and if

they want to make a transaction in the Backind Application, they must first log into the system; (3) Marketing Program is a marketing process carried out by the marketing department aimed at marketing products to customers; (4) partner registration program is the process by which customers who want to become business partners; (5) The product filling process is the process of entering data for new products from the Backind Application; (6) Report Process is the process of making reports from data in the Backind Application database; (7) Customer service process is a process carried out by the customer service department, to handle complaints from customers, such as complaints related to service issues and so on.

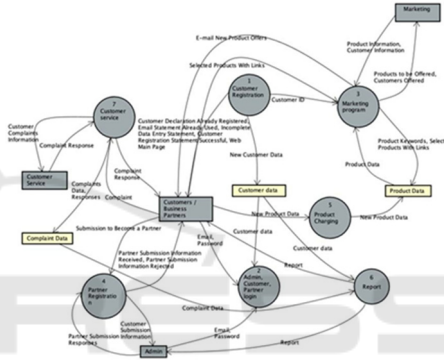


Figure 3: DFD Pengembangan Aplikasi Backind (As, 2013).

3.3.2 Section Titles

At this stage, the developer develops the design into a program. After the program is completed in part or in whole, then the testing process is carried out on the program whether there is an error or not before being applied to an organization. Application implementation can be seen in Figure 4 and Figure 5.

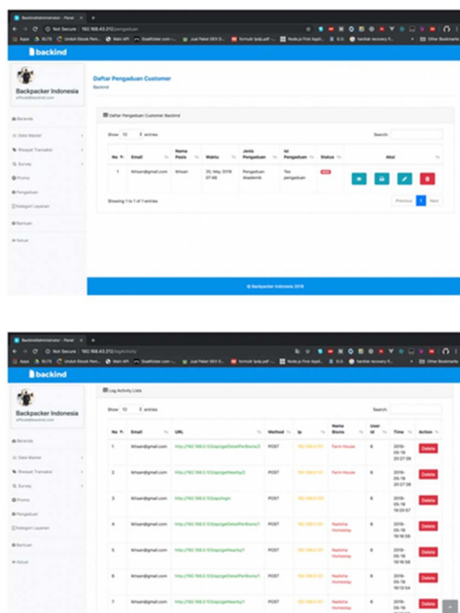


Figure 4: Diagram Kontek Data Backind (As, 2013).

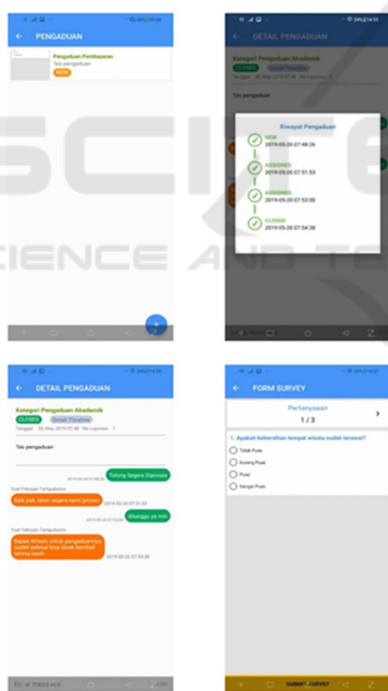


Figure 5: Tampilan Aplikasi Mobile.

3.3.3 Blackbox Testing

In testing the CRM module on BackInd, it is done using black box testing, in this test a test is performed on the performance of the user and super admin. The type of test performed is unit testing and integration testing. This can be seen from the overall functioning

of the website and mobile application Backind. The results obtained are as follows.

In the log activity management process, it can be seen that the success has been achieved 100% because it has managed to get a list of activities performed by the user. In the broadcast promo management process, it can be seen that success has been achieved 100%. The process of seeing promos, creating promos, changing promos, broadcast promos is running correctly, and the customer has successfully received promotional emails.

In the complaints management process, it can be seen that 100% success has been achieved. The process of seeing complaints, making complaints, seeing details of complaints, seeing details of the timeline, sending and replying to messages, the complaints process has gone according to procedure.

4 CONCLUSIONS

The design of CRM in the BackInd application is designed using the Rapid Application Development (RAD) method which includes 3 phases, namely (1) Requirement Plan, (2) Design Process and (3) Implementation based on existing business processes BackInd companies engaged in Tourism and Homestay fields so CRM modules are needed to maintain and get new customers while increasing company profits. CRM development in the BackInd application produces 4 features, namely: (1) Log Activity that is useful for recording user activities in using applications, (2) Promos that are useful for offering existing products, (3) Complaints that are useful for reporting customer complaints to respond and provide customer complaints solutions and (4) surveys that are useful for getting feedback from customers regarding the services that have been provided. CRM development in the BacInd application is divided into 2 website and mobile platforms. The CRM system built on the website uses PHP programming languages, phpstorm, and MySQL code editors. While the CRM system built on mobile uses the Java programming language, and android studio code editor. Further research is needed to analyze the successful of the promotion, so we can evaluate promotion programme that have been created. It is also needed to develop promo features such as filtering users when sending promotions according to the preferences of the log activity.

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