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Mobile Customer Relationship Management (m-CRM) Application Development in MSMEs Indonesia

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Mobile Customer Relationship Management (m-CRM) Application Development in MSMEs Indonesia

Vidila Rosalina[1]*, Hamdan[2], Saefudin[1]

[1]Department of Information Technology, Universitas Serang Raya, Banten, Indonesia
[2]Department of Economic, Universitas Serang Raya, Banten, Indonesia

*vidila.suhendarsah@gmail.com

Abstract Micro, Small and Medium Enterprises (MSMEs) in Indonesia still utilize e-commerce which only focuses on sales, not yet equipped with good relations management with their customers after the transaction. The information technology system used to retain customers with the aim of increasing customer loyalty is called Customer Relationship Management (CRM) System. The current CRM application is more developed for large companies so that when applied to MSMEs it causes many gaps and is not adaptive. This study tries to develop a CRM application based on Android or called Mobile-CRM (m-CRM) that is adjusted to the needs of MSME businesses in Indonesia using a local approach and based on the characteristics of MSMEs in Indonesia. Modeling the system in the MSME CRM is described by the Use Case Diagram. The development of this application uses one model of system Rapid Application Development(RAD), namely Phased Development. The results of this MSME m-CRM application are generally equipped with product management features, transactions, managing customer relationships, and seeing delivery tracking. These features are expected to be able to help MSMEs in Indonesia increase customer loyalty and build global marketing in order to support the independence of the national economy.

1. Introduction

Customer Relationship Managementisgrowing very rapidly and understanding customers is one of the important strategies in the success of business [1]. The obstacle that is often faced by most Micro, Small and Medium Enterprises (MSMEs) is to maintain existing customers to remain loyal to MSME products in addition to several other obstacles such as lack of innovation, household finance mixed with industrial finance and traditional business management. Understanding retaining customers is one of strategy in business success. This often becomes a major obstacle to MSMEs in the midst of increasingly fierce competition. MSMEs need to maintain good relationships with customers and increase their loyalty through knowledge and fulfillment of customer needs quickly and precisely. CRM System as an information technology application will be able to overcome this problem because the goal of CRM is to deal with the relationship between the company and customers in order to increase the value of the company in the eyes of its customers. To achieve a competitive advantage by focusing on customer relations, companies need information about who their customers are, what customers want, how their customer needs are satisfied and other related factors. CRM can help

MSMEs get a better understanding of their customers and their needs by providing features to manage relationships with their customers equipped with customer data banks,call centers, and reports on customer satisfaction(mates rates). CRM applications are currently on the market, mostly made by American and European companies that have already implemented CRM in their companies. AMR Research reports several CRM software providers such as eLoyalty,Siebel Systems, Microsoft (Microsoft Dynamic), Clarify (Nortel Networks), PeopleSoft and Oracle as market leaders. This is what makes MSMEs reluctant to use CRM applications into their business ventures, because of the high cost of the application and foreign vendors still lack an understanding of different MSMEs business processes [2]. The background of this research is to help MSMEs in Indonesia to maintain customer loyalty by developing inexpensive, easy and affordable CRM applications. The purpose of this study is to create a model Mobile Customer Relationship Management (m-CRM)and develop m-CRM applications with the method of developing Phased Development (PD) to produce a technological innovation for MSMEs in Indonesia in maintaining customer loyalty and expanding marketing globally. This research is in line with the policy direction that will be pursued by the Ministry of Cooperatives and MSMEs in the efforts to develop Cooperatives and MSMEs as mandated in the 2015-2019 RPJMN, namely to increase the competitiveness of Cooperatives and MSMEs so they can grow into sustainable businesses on a larger scale (upscale or scaling-up) in order to support the independence of the national economy. The results of a preliminary survey conducted on 100 MSMEs spread across Indonesia in this study found that only 8% applied CRM, although many MSMEs realized the importance of CRM and the use of CRM is a necessity that cannot be avoided by every MSMEs the foremost position in a business. The following is information on the level of CRM implementation in MSMEs in Indonesia (Figure 1).
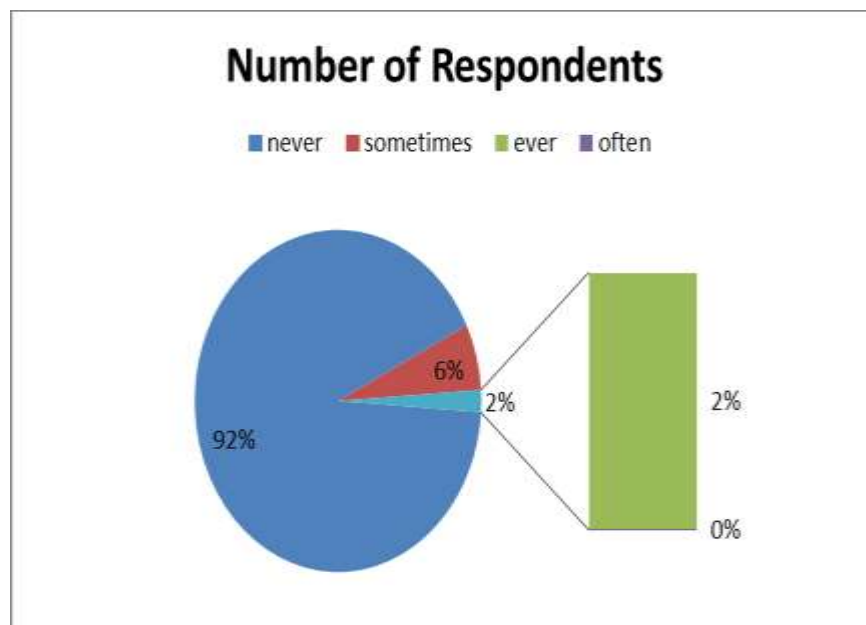

Figure 1. The level of CRM utilization in MSMEs in Indonesia

We can immitate in other countries that MSMEs have begun to use CRM in managing their businesses, Micro Small and Medium Enterprises (MSMEs) in Malaysia, found 48.8% of SMEs in Malaysia have implemented information systems to support their business processes. By utilizing information technology to manage customers, SMEs in Malaysia are able to increase their competitive advantage in the face of increasingly fierce business competition [3]. In the same year, 2012 it also found research publications that showed how CRM concepts could be implemented in small businesses to help improve and drive the success of a business unit. Garcia, et al. offers a framework

for implementing CRM based on case studies on MSMEs in one of the developing countries in Latin America, Mexico. Within this framework, Garcia et al. offer a CRM architecture for MSMEs that is divided into two parts, namely operational CRM and analytical CRM [4] [8].

2. Methods

Thefollowing are the stages of the process that have been carried out in the overall research on the development of m-CRM MSMEs applications in Indonesia, namely: (1) Observation and survey of MSMEs in Indonesia, (2) Requirement Analysis of m-CRM MSMEs in Indonesia, (3)m-CRM Modeling with Local Wisdom to MSMEs in Indonesia, using Use Case Diagrams [5], (4)The development of m-CRM MSMEs software based on MSMEs business processes in Indonesia uses the method Phased Developmentthrough the stages: Planning, Analysis, Design, and Implementation, (5) So that m-CRM MSMEs Application is produced As Efforts to Increase Customer Loyalty of MSMEs in Indonesia.
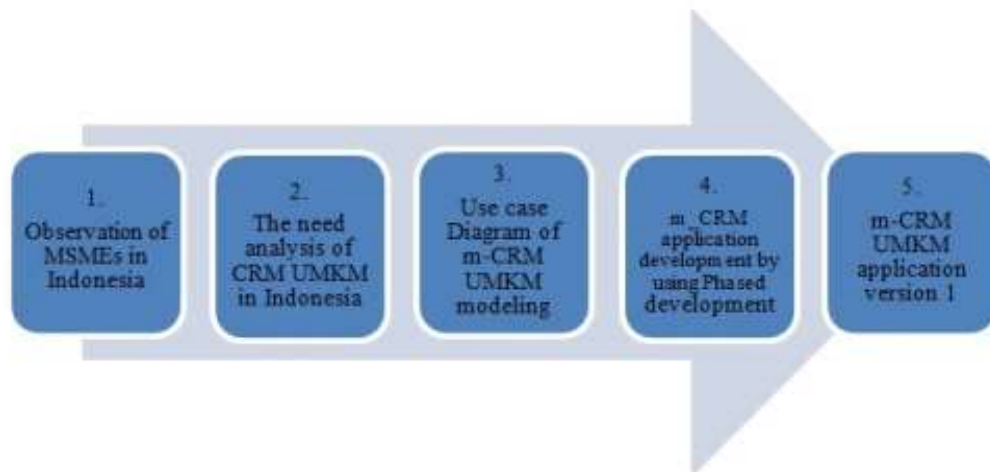

Figure 2. Research Methods for m-CRM MSMEs Development in Indonesia

3. Results and Discussion

Based on the results of observations and the needs analysis described in the previous stages, identification of CRM needs in MSMEs in Indonesia using the local wisdom approach, CRM models in MSMEs in Indonesia are described using use case diagram as shown in figure 3.
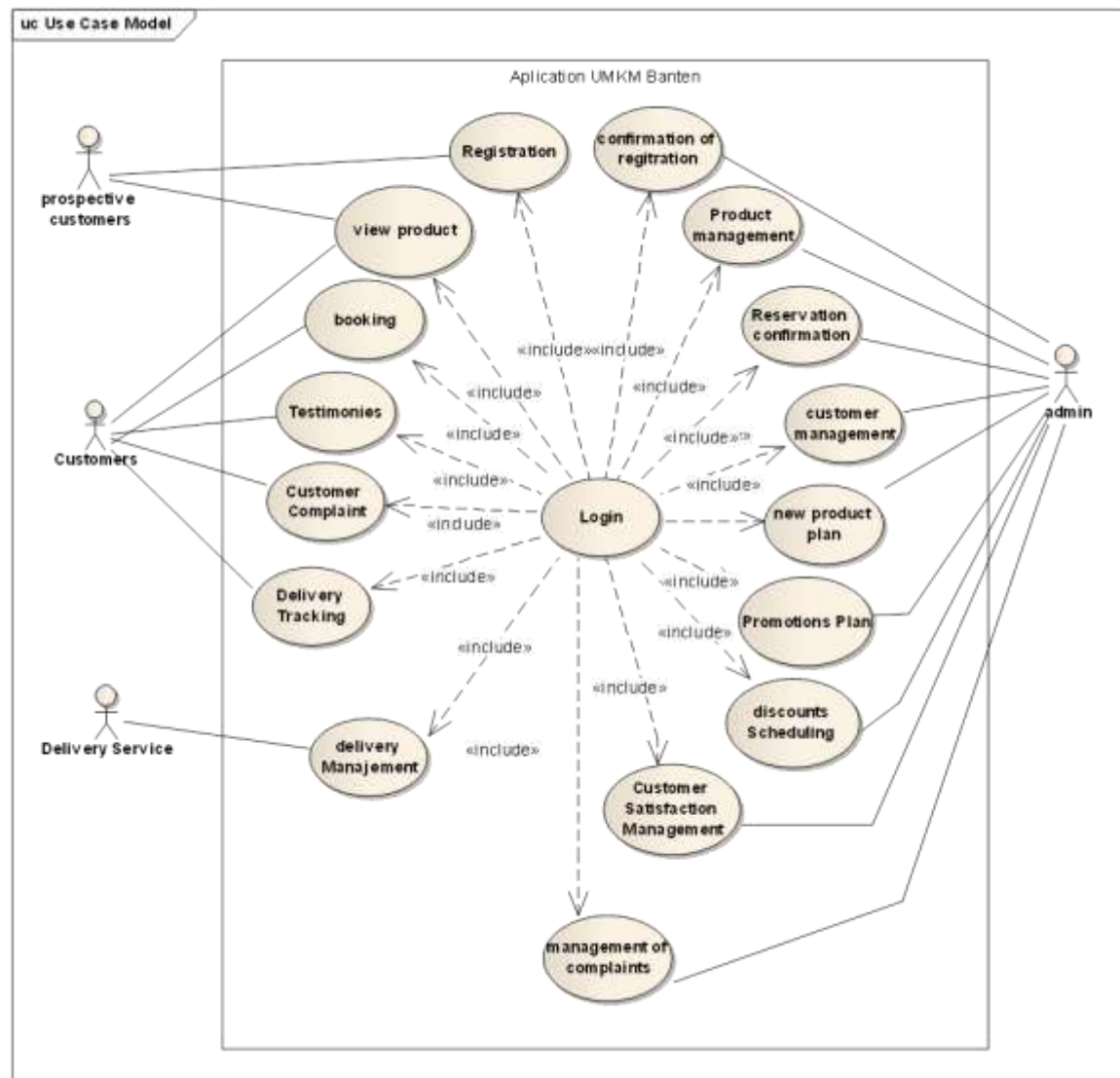
Figure 3. Use case m-CRM diagram of MSMEs in Indonesia

Based on the use case diagram above, m-CRM MSMEs do not require features like in large companies but its simple features adjusted to the needs of MSMEs in economical Indonesia and contain local language to present a user-friendly impression to MSMEs actors [7]. The following are the conclusions of m-CRM application specification SMEs in Indonesia (table 1).

Table 1. Specifications m-CRM MSMEs in Indonesia

No.	Specification	m-CRM MSMEs
1	Easy to Install and User-Friendly	Can be downloaded quickly via google play and can be directly used with ease
2	Android Base Application	Can be used mobile on a smartphone.
3	Local Language	Using Indonesian which is a language commonly used by business people and their customers
4	Economical	Investing only smartphones does not require personal computer (PC)

The following are the stages of developing m-CRM in Indonesia using the Phased Development model [9] and the results of these stages:
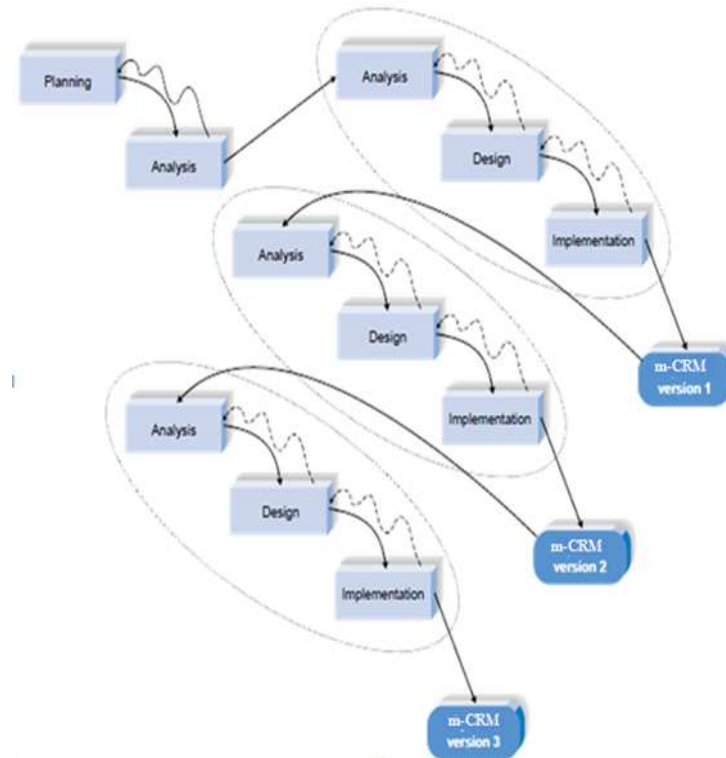

Figure 4. Phases of Phase Development in m-CRM MSMEs

From the description of the m-CRM MSMEs development above, the phase development stage produces m-CRM MSMEs into several versions made based on the requirements so that it will continue to produce more perfect versions.

Following is the appearance of the M-CRM MSMEs application developed using Phase Development and built on the characteristics of MSMEs in Indonesia:

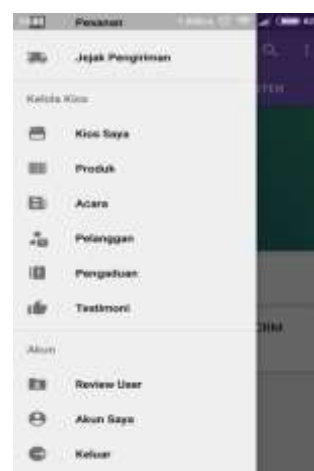**Figure 5.** Display of m-CRM MSMEs Version 1.1

Figure 6. Display M-CRM MSMEs Menu Features

The application of m-CRM MSMEs was tested on 30 people of MSMEs and MSMEs customers. The evaluation of the m-CRM MSMEs application is measured based on the characteristics of Functionality, Reliability, Usability, Efficiency, Maintainability, Portability[10]. The data used in this assessment is in the form of a questionnaire containing the user's assessment of m-CRM MSMEs application with a Linkert scale 1–4 namely 1 (Bad), 2 (Moderate), 3 (Good) and 4 (Very Good). The following is a graph of the assessment results:
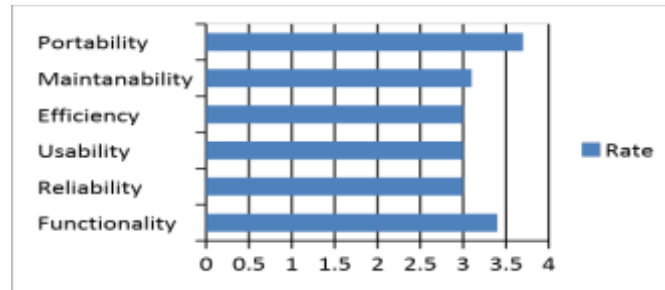

Figure 7. A scale of Linkert

4. Conclusion

From the discussion of processes, analysis, and results described above, the following conclusions can be drawn as follows:

a. M-CRM modeling in MSMEs in Indonesia uses case diagram that is simplified with 4 actors and 17 processes because it does not require features such as in large companies but simple features adjusted to the needs of MSMEs with specifications: (1) Easy to install and user friendly, (2) Android Base Application, (3) Indonesian, (4) Economical.

b. The development of e-CRM applications in MSMEs in Banten region through the stages of the Phase Development model, namely planning, analysis, design, and implementation, which is repeated continuously produced m-CRM applications in several versions that are continuously refined.

c. The evaluation results of m-CRM MSMEsSoftware based on 6 characteristics: Functionality, Reliability, Usability, Efficiency, Maintainability, Portability produces an average value of 3.2 in the good category.

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