

The Effectiveness of Electronic Customer Relationship Management at National Cardiovascular Center Harapan Kita Hospital in the Action of Methods and Research

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Abstract—This research aims to analyze how to business process of electronic customer on relationship of management to improve hospital services. The method used by an action of research. The variables analyzed are the service system, the quality of system and the quality of information. The analyzed was carried out using software of SPSS (Statistical Package for the Social Sciences) and UML (Unified Modeling Language). The study was conducted through observation, interviews and questionnaires toward the customer service staff. The average value of service system variable statements is 3.79, 3.57 for the quality system and the quality of information is 3.72. The service system of variable reliability is 0.914, the quality of system is 0.870 and quality of information is 0.905. The confidence level of sampling is about 95% and a critical value of 5%. The proposed system analysis uses UML with use case diagrams, activity diagrams, sequence diagrams and class diagrams.

Keywords— Action Research, CRM (Customer Relationship Management), The System of Information, UML (Unified Modeling Language), SPSS (Statistical Package for the Social Sciences).

I. INTRODUCTION

The hospital as one of the public service institutions requires the existence of an accurate and reliable information system, and is sufficient enough to improve its service to patients. Management of data in hospitals is one of the important components in realizing an information system in a hospital. For this reason, the strategy that must be carried out by the hospital is to be able to get customers / patients and maintain customer trust in the long term. Customer Relationship Management (CRM) is an organizational strategy that is focused and customer-oriented (Rainer and Cegienski, 2013). With the application of a good Customer Relationship Management (CRM) application, the hospital can obtain new customers, benefit from customers and retain customers who can bring benefits to the company (Kotorov 2002, Riel. 2001). The benefits of Customer Relationship Management (CRM) services for companies can not only be assessed in financial terms, but a trust and loyalty of consumers and building a positive image for the company are very valuable.

Today Customer Relationship Management (CRM) has developed electronically known as Electric Customer Relationship Management (E-CRM). With this, it is expected

to be able to assist companies in running a fast and accurate business.

National Cardiovascular Center Harapan Kita Hospital with the patient first motto, strongly emphasizes the importance of maintaining customer and maintaining quality service quality. Therefore, our hope National Cardiovascular Center Harapan Kita Hospital has Customer Relationship Management (CRM) under the auspices of the customer service unit which aims to foster good relations with patients, by providing excellent service during care and post care and identifying patient characteristics to be able to evaluate service and planning needs.

In the application of Customer Relationship Management (CRM) services currently it is still limited to VIP patient services and has not yet been systematic, so that the data obtained cannot yet be used as an evaluation material and policy makers in planning patient needs. Customer Relationship Management (CRM) patient visit data and patient contacts were only limited to processing on available information systems, so there was no continuation of Customer Relationship Management (CRM) relations with patient. In addition, all patient Customer Relationship Management (CRM) data has not been grouped into one service that connect to the hospital, especially Customer Relationship Management (CRM) officers.

Seeing this, it is time for our hope National Cardiovascular Center Harapan Kita Hospital to have an integrated system that can facilitate patient with Customer Relationship Management (CRM) to deal directly with hospital officers easily.

For this reason, researchers are interested in being able to analyze the development of Customer Relationship Management (CRM) information systems. With the Electric Customer Relationship Management (E-CRM) system it is hoped that it can bridge patients in a communication and form a community that can support and become a partner of the hospital. In term of marketing, of course this community will play an important role in helping hospitals to market superior products.

II. PREVIOUS RESEARCH

This research was carried out not apart from the result of previous studies that have been conducted as comparison and study materials. The result of the research that made the comparison is inseparable from the topic of the research, which is about the method of Action Research.

Based on a journal entitled grounded theory and action research as pillars for interpretive information system research: A comparative study examined by (Manal A and Abdel Fattah, 2015), the results of this study revealed Action Research to evaluation information systems.

According to (Ulf Melin and Karin Axelsson, 2016) in his journal entitled Action in Action Research collaborating the concepts of action, roles and public relations in a public e-service development project, it can solve the dilemmas and challenges of the practice of research in information system.

According to (Guy-Emmanuel Rigo, Cristiane Drebes Pedron, Mario Caldeira and Cintia Cristina Silva de Araujo, 2016) in his journal entitled adoption in a higher education institution CRM, action research can be achieved to achieve CRM organizational strategy goals.

According to (Celina Olszak and Tomasz Bartus, 2013) in his journal entitled Multi-Agent framework for social customer relationship management systems, is a management information system designer in developing CRM.

According to (Ned Kock, David Avison and Julient Malaurent, 2017) in his journal entitled positivist Information Systems Action Research: Methodological Issues, information system researchers can successfully use action research according to the desired results.

III. RESEARCH METHODS

The research method used in this study is the Action Research Method which consists of 5 stages including diagnosing, action planning, action talking, evaluating, learning.

According to (Baskerville, 1999) dividing action research based on the characteristics of the model (iterative, reflective or linier), structure (rigid or dynamic), purpose (for organizational development, system design or scientific science) and the form of researcher involvement (collaboration, facilitative or expert).

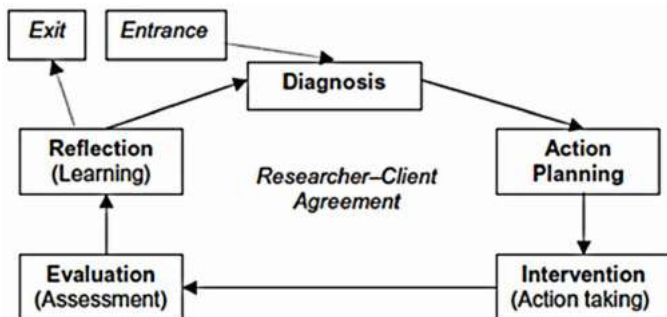


Fig. 1. Action Research Method (Davison, 2004)

According to (Davison, 2004) Action research as a research method, founded on the assumption that theory and practice can be closed in a integrated manner with learning

from the results of interventions planned after a detailed diagnosis of the context of the problem.

In this study there are 3 variables including:

1. Service System (X1)
2. System Quality (X2)
3. Information Quality (Y)

To calculate the number of samples from a particular population, the solving formula is used as follows:

$$n = \frac{N}{1 + Ne^2}$$

Information:

n: Samples

N: Population

e: The level of error or critical value

This sampling is carried out at a 95% confidence level or a critical of value 5% so that the sample size can be calculated as follows:

$$n = \frac{28}{1 + 28(5\%)^2} = 26,1$$

Based on the above calculations, the sample taken as many as 26 (rounded) people account representatives.

3.1 Proposed System Analysis

Based on the results of analysis, that customer service wants how patient and management in a relationship can be integrated in handling complaints / suggestions and can provide information in the form of giving speeches at important moment, superior products of hospitals and new products. In this case, it is necessary to briefly describe the design of an intergrade information system as follows:

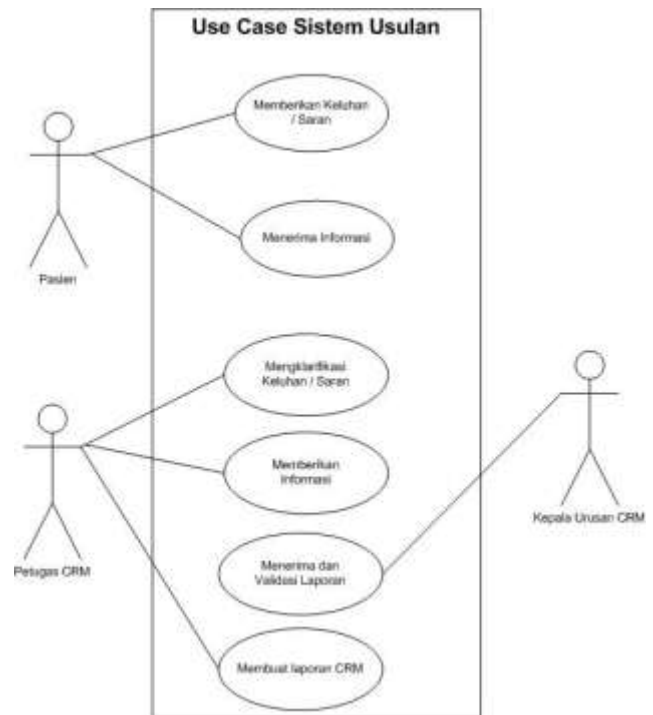


Fig. 2. Proposed use case diagram system

IV. RESEARCH RESULTS AND DISCUSSION

Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.921 ^a	.849	.836	.28992

a. Predictors: (Constant), KuaSis, SisPel

b. Dependent Variable: Kualn

Source: Research Results (2018)

Based on the results of primary data processing using the SPSS version 24.0 program obtaining an R coefficient of 0.921 which means that the relationship between the service system and the quality of the system for information quality has an effect of 92.1%. Adjusted (R²) = 0.836. meaning that the quality of information can be explained by the service system and service quality of 83.6%, while the remaining 16.4% is explained by order variables not included in modeling. This shows that the independent variables only provided part of the information needed to predict variations in the independent variable.

Based on the result of hypothesis testing, service system variables and system quality together have a positive and significant effect on the quality of information, there is a positive and significant influence between the service system on the quality of information, and there is a positive and significant influence on the quality of the information quality in the unit customer service of national cardiovascular center Harapan Kita hospital.

V. CONCLUSIONS

Based on the results of the research and discussion relating to the influence of the service system and the quality of the system on the quality of information in the national cardiovascular center Harapan Kita hospital, then conclusions can be drawn: The results of the study are partial, it is seen that the service system variables obtain significant results $0.037 < 0.05$, so it is concluded that the services system has a positive and significant effect on the quality of information in the customer service of national cardiovascular center Harapan Kita hospital.

Suggestions

Based on the above conclusions and the result of the research conducted, there are several things that need to be considered by the customer service unit: Based on the result of the research which obtained the lowest value on the 7th point services system variable of 3.34 (quite high), it is recommended that an integrated information system be developed between patient and officers.

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