Web Based Application Customer Relationship Management for Helping Sales Analysis on Bike Manufacturer

Anita Nathania Purbowo, Yulia, Agustinus Ivan Suryadi

Department of Informatics
Petra Christian University
Surabaya, Indonesia
anitaforpetra@gmail.com, yulia@petra.ac.id, agustinusivanoption@yahoo.co.id

Abstract--Using the manual method makes the salespersons' productivity inefficient and late in delivering their report, besides that they cannot manage their loyal customers. This problem is in contradiction with Customer Relationship Management (CRM) concept. With that analysis, a company needs to have CRM to manage its customer relationship and get the right information of its customers so it can manage its loyal customers and help its customers to get the best sales. This application helps the company to monitor its customers in real time and help its customers to analyze the best-selling product on its shop. This application used Pareto's Law, made with Laravel Framework, and incorporated Google Maps and Google API Calendar. The results show that this application can run smoothly and have good user interface. This application can help customers in shopping and help the company manage its customers.

Keywords—customer relationship management; CRM; sales force automation; Pareto's law, ABC classification

I. INTRODUCTION

Customer Relationship Management (CRM) is employed to develop and maintain relationship between producer and customer. In the business, customer satisfaction should be the focus of the company to increase sales. This paper's subject is a company that has opened for business for more than 20 years as a bike manufacturer and produced more than 100 kinds of goods for domestic and international markets. This company has 100 sales agents who are connected to the customers. The sales agents have visit schedules to their customers and help their customers by giving suggestion on goods type to sell on their shops. The suggestion is an added value for this company to expand their customers.

Unfortunately, this company still uses manual method to keep their customer data. This method obstructs the sales agents' productivity because they cannot find the data easily and sometimes they lose the data. This problem makes it difficult for the sales agents to build close relationship with their customers. Besides that, this company gets difficult to expand their market and give suggestion to the customers. Based on our analysis, this company needs a web-based CRM application for maintaining customers, monitoring sales agents, and making sales analysis to give the best suggestion to every customer.

Therefore, to ensure that the customer relationship can be developed and sustained, at least two things need to be taken into consideration [1]:

1. Accomplishing the company's marketing objectives by focusing on achieving a competitive position on the reference market.

2. Attracting and keeping profitable customers for the organization.

II. THEORY FOUNDATION

A. Customer Relationship Management (CRM)

Every company should develope their customer relationship, that's because Customer is a part of the company just as the company needs employee to growing the company. Customer is not an external element of the interaction[2]. It should be internal and important part of the company. This can be done if the company has unique, strong corporate identity based on corporate culture and company's values[3].

The concept of CRM (Customer Relationship Management) and knowledge management have gained wide attention in both business and academia[4]. CRM can be defined as a strategic approach to managing customer relationships in order to create customer and shareholder value through the appropriate use of IT, data and customer knowledge[5]. Customer knowledge is a critical asset, and gathering, managing, and sharing customer knowledge is a valuable competitive activity for organizations [6]. These indicated that relationship is the important part of the company.

Component of CRM [7] :

1. Customer

2. Relationship

3. Management

The reason for adopting CRM[7]:

1. Competition to get customer is very intense. Economic point of view said, retain customer easier than looking for a new one. Under the pareto principle, it is assumed that 20% of customer gain for 80% will company profit.

2. In selling industry, need average 8-10 times meeting to get a new customer, and 2-3 times meeting to retain existing customers.

3. It is proved 5-10 times more expensive to get new customers than retain existing customers.

4. Increase 5% in retaining existing customers will changes to 25% or more to increase profitability.

The purpose of CRM is to develop close relationship between company and customer. CRM help company to increase customer satisfaction and get more benefits for the company.

B. CRM Phase

CRM consists of this following phases[7] :

1. Get new Customer (Acquire)

CRM should be able to promote the company's product for a good first impression of the customer. CRM must provide convenience to customer to make an order they need, for example quickly response for their order. The goals of this phases is company can offer a good product with satisfactory service

2. Increase the customer value (Enhance)

Company must build customer relationship with listen their complaints and improve company services. Customer relationship can be improve with cross selling and up selling strategy.

3. Maintain existing customer (Retain)

Company can maintain existing customer with provide time to listen what customer needs, including customer dissatisfaction with company's product or service and company can provide support for the customer with services and helping application.

C. Electronic Customer Relationship Management (e-CRM)

Internet and web services as an information hub facilitate information and data transferring and sharing [8]. Currently, the Internet makes a huge effect to the society and creates a new revolution in the 21st century where everything and everyone are getting online[9].

With the current condition where everything already combine with the technology, CRM has been directed to e-CRM. E-CRM is a collection of concepts, tools, and processes that enable an organization to most out of their e-business investment. It helps companies to improve the effectiveness of their interaction with customers while at the same time making the interaction intimate through individualization [10]. E-CRM is applied electronically using web browsers, internet and other electronic media (such as email, call center, and others).

This CRM application facilitates the coordination of several business function and also coordinates various communication channels with customers.

D. Sales Force Automation (SFA)

SFA contains several aspects of the sales function, consisting of sales activities, opportunities and flow of management and prediction capabilities. SFAs are often combined with marketing tools to help facilitate sales opportunities. The SFA function can also help predict sales flows.

SFA can also be based on employees and territories. They can compare time by time so sales manager can see and analyze their productivity and sales.

The advantage of using SFA[11] :

1. Personalized Software: Company can use SFA tailored with existing business system.
2. Complete Sales Solutions for Executives and Employees : SFA can assist executives to define and set individual sales goals, stock sales, advertising information, analyze results and reports, and forecast for the future.
3. Sales agent can get convenience to get seated, monitor their customers, and set reminders for schedule and appointments.
4. Swift Launch and Incorporation: Most SFA software can be easily combined with sales program and can be configured for specific need.
5. Provide Control: With using SFA, managers can find out how their sales team is doing at any given time and also take care of any problems that may arise.
6. Data Protection: All SFA System have included security equipment that helps to keep all data, statistic and solutions. Advance technology in security enables complete protections of client and corporate data. Along with this, SFA systems has data encryption and user authentication facilities that help to back up stored data and also prevent unauthorized use of the sales solution.

E. Leads and Opportunity Sales

Lead Sales is the contact information of a person or business that allows to buy the company goods. Leads can be referred to "unqualified" sales opportunities. The sales process should be seen as a step to complete closing terms and agreements. Every business has different qualifications to indicate a person's buying desire.

Opportunity Sales is a "qualified" lead sales. It creates an opportunity is an object to increase the result of sale and have certain criteria that indicate a high values for the business. Every business has different criteria to determine how qualified lead and each business will consider qualified prospect at different stages.

F. ABC Classification Method (Pareto Law)

The ABC Classification Method is based on the discovery of Vilfredo Pareto who discovered a law which known as Pareto Law. The ABC classification method helps to know

which items of product have the greatest contribution to sales figures. This method states that from the number of product that have been sold in a certain period, 20% are items that contribute about 80% to sales figures or "A" categorized. This composition (20% - 80%) is also known as Pareto Law, meanwhile 40% of the next item is items that contribute about 15% to sales figures or "B" categorized, and the remaining 40% of the items, are items that contribute about 5% to sales figures or "C" categorized.

III. ANALYSIS AND DESIGN SYSTEM

In this chapter describes the design of systems that are using for developing the Customer Relationship Management Application in this research. Basically there are three main features in this Application et al :

1. Acquire

   To acquire new customer, company need to promote their product with news and event. This Application help company to blast the news and promotion to sales agents real time, and provide lead and opportunity feature for sales agents to help them to get new customer.

2. Enhance

   Customer relationship can be improved with provide suggestion what type of good appropriate to the customer, provide easy purchase system which can track their order, and provide the newest news or promotion from company. Customer need to communication their problem with customer and get the fastest solution.

3. Retain

   This Application has features to collect problem from customer with open cases feature, and some features for sales agent to maintain their existing customer. Sales agent need to maintaining schedule visit and doing sales analysis to help sales agent to give suggestion for their customer.

Company need to analyze their customer to get prospecting customer For supporting the analyze, there are several stages for determine sales lead and sales opportunity on this company. The Stages in Fig 1.
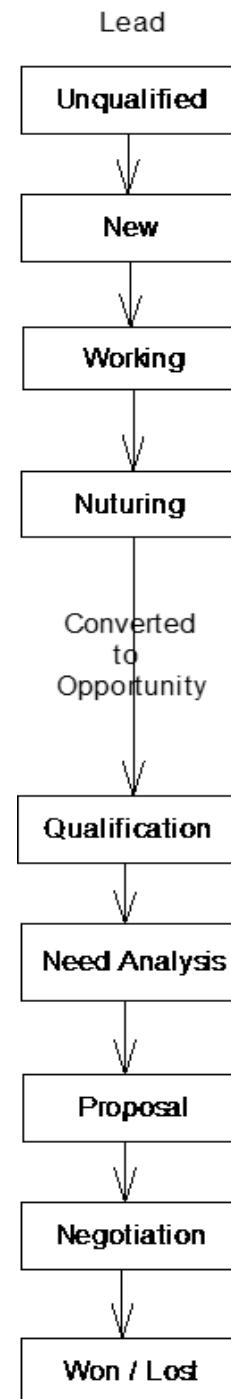

Fig. 1. Leads and Opportunity Sales Stages

Users for this Application are Customers, Sales Representative, Administrator and Sales Manager. Context Diagram for this application in Fig 2.
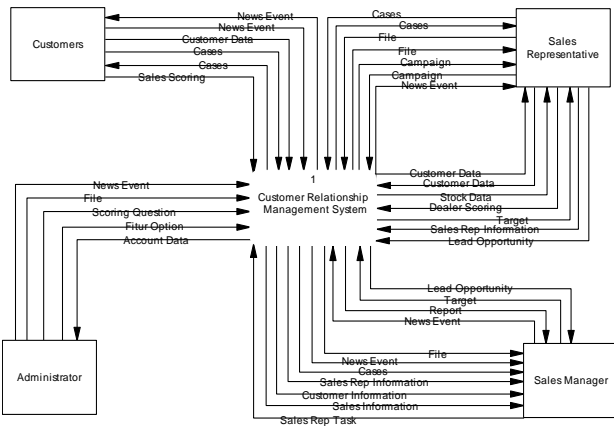
Fig. 2.   Context Diagram

This application divide by 5 sub-systems et al :

1. Data setting

   This sub-system manages the spread of news and files to sales representatives, sales managers, and customers.

2. Dealer information settings

   This sub-system collects data for new customer. After collected the customer data, the customer can be sales lead.

3. Leads and opportunity determination

   In this sub-system there is several stages to determination customer position.

4. Sales tasking

   In reaching on their targets, sales representative must doing some task to manage and this sub-system help sales representative to know and doing their task.

5. Dealer visit.

   This sub-system collects date and time dealer visited by sales-representative.

IV. EXPERIMENTS

In this section, we present an experimental result of Customer Relationship Management application.

A. Administrator

There is 3 sections for administration et al : User Administrators, System Administrators, and Front desk. Administrators manage all permission for user and organizing the list of questions for sales agent to analyze their customer. The question different for each criteria customer. To avoid data errors, need front desk user to check data from closed opportunity and news from customer. Administrator page and menus in Fig 3.
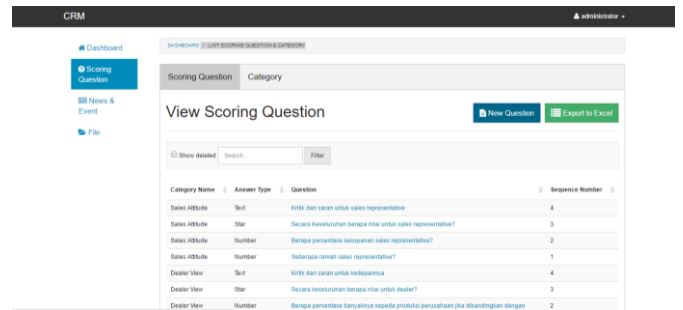

Fig. 3.   Administrator Page

B. Sales Agent

Sales agent divided by 2, sales manager and sales representative. Sales manager and sales representative have same function on this application but sales manager can see all sales representatives on their line. Every sales representative can get customer on specific stages. Sales agent page in Fig 4.
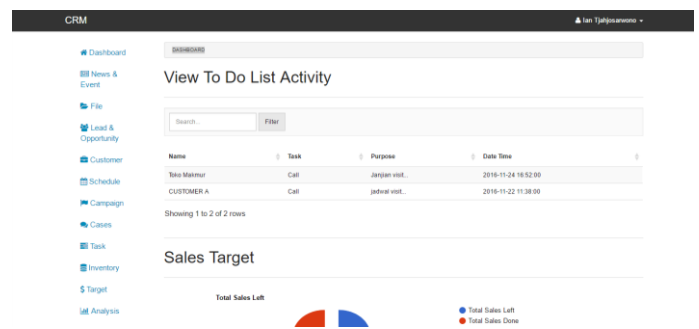

Fig. 4.   Sales Agent Page

C. Customer

Customers use this Application to get information about the company and their sales representative. Besides of that, customer can open cases for their problem on customer page. Customer page in Fig 5.
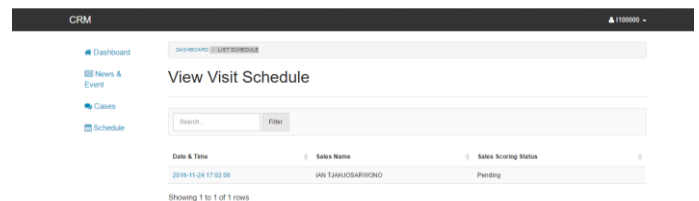

Fig. 5.   Customer Page

D. Lead and Opportunity

Sales representative can make new prospective contact and It can be customer leads or opportunities. To save new contact, sales representatives need to get detailed information about their new prospects. New prospects can be an opportunity by following the stages. Every stage change saved for the customer history. Contact Form in Fig 6.

Fig. 6.   New Customer Form

Every sales representative can have contact and know the step for every customer. Lead Form can be see in Fig 7 and Step Change Form in Fig 8.

Fig. 7.   New Customer Form

Fig. 8.   Step Change Form

E. Visiting Schedule

Sales agent can schedule their visits for their customer. Each schedule will get customer score and sales representative form. Customer need to value sales representative on their visiting and sales representative need to provide score for customer to get the next stage. Before giving a score by answering some question. Sales agent can see score by their customers. List schedule in Fig 9, Detail Schedule in Fig 10 and scoring form in Fig 11.

Fig. 9.   List Schedule

Fig. 10. Detail Schedule

Scoring Question

Dealer View

1. Bagaimana penyusunan sepeda produksi perushaan pada dealer? :   0   [──────────────]

2. Berapa persentase banyaknya sepeda produksi perusahaan jika dibandingkan dengan kapasitas dealer? :   0   [──────────────]

3. Secara keseluruhan berapa nilai untuk dealer? :   ⊖ ☆ ☆ ☆ ☆ ☆   Not Rated

4. Kritik dan saran untuk kedepannya :   [_____]

Fig. 11. Scoring Form

F. Customer Scoring

Sales representative need to provide value for their customer on each visit. This score will help sales manager to see and analyze the customer. Scoring will be able on every schedule by sales representative. Sales manager can view all customers' values for their sales representative. Score Result in Fig 12.
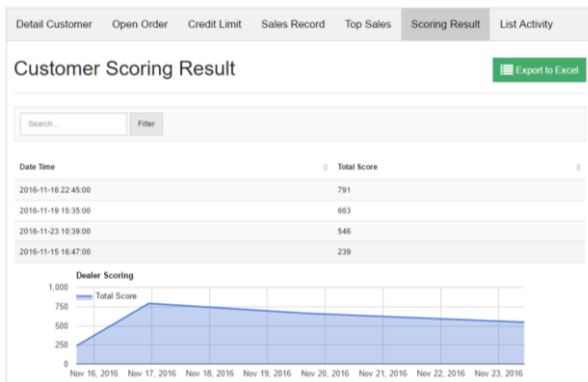

Fig. 12. Customer's Score Result

G. Customer Cases

Customer and sales representative can open cases to get solution for their problem. The different on customer and sales representative added the case form is sales representative can choose with whom they share the problem and the customer cannot choose, the customer's issues will be automatically share to their sales representative and sales manager. This Application automatically share the case via email when case status changes. Open case form in Fig 10.

Fig. 13. Open Case Form

V. CONCLUSION

Conclusion for The implementation of Web Based Application Customer Relationship Management at el:

1. This application can be able to support the performance of sales representatives to conduct business processes, because the sales representative can maintain relationships with their customers by arranging schedule of visits and conduct regular assessments and can be monitored directly by the sales manager. Sales manager can give assignment to their sales representative with easier way

2. Sales representative can be stored their data safely and regularly so they can get the latest information and accurate report about the customer and company.

3. Based on questionnaire that has been distributed, it can be concluded that the system can help the sales agent for daily process, it is supported by the user's opinion both in the ease of application use, design and suitability needs.

For the next step need to add live chat to help sales representative communicate with their sales manager or their customer.

REFERENCES

[1] M. Kalamárová, J. Parobek, E. Loučanová, and P. Trebuňa, "Competitiveness Evaluation of the Slovak Forest Industry," Proc. 7th Int. Scientific Conf. of Int. Assoc. for Economics and Management in Wood Processing and Furniture Manufacturing (WoodEMA), Zvolen (Slovakia), May 2014, pp. 58–62.

[2] A.F. Cruceru and D. Moise, "Customer Relationships through Sales Forces and Marketing Events", Proc. 2nd World Conf. on Business, Economics and Management (WCBEM2013), Procedia - Social and Behavioral Sciences, vol. 109, pp. 155–159, Jan. 2014, doi: 10.1016/j.sbspro.2013.12.436.

[3] M. Triznova, H. Mat'ova, J. Dvoracek, and S. Sadek, "Customer Relationship Management Based on Employees and Corporate Culture", Proc. 4th World Conf. on Business, Economics and Management (WCBEM2015), Procedia Economics and Finances, vol. 26, pp. 953–959, 2015, doi: 10.1016/S2212-5671(15)00914-4.

[4] H. Gebert, M. Geib, L. Kolbe, and W. Brenner, "Knowledge-enabled Customer Relationship Management: Integrating Customer Relationship Management and Knowledge Management Concepts," J. Knowledge Management, vol. 7, no. 5, pp. 107–123, 2003, doi: 10.1108/13673270310505421.

[5] A. Payne and P. Frow, "A Strategic Framework for Customer Relationship Management", J. Marketing, vol. 69, no. 4, pp. 167–176, Oct. 2005.

[6] F. Khodakarami and Y.E. Chan, "Exploring the Role of Customer Relationship Management (CRM) Systems in Customer Knowledge Creation", Information & Management, vol. 51, no. 1, pp. 27–42, Jan. 2014, doi: 10.1016/j.im.2013.09.001.

[7] R.S. Hassan, A. Nawaz, M.N. Lashari, and F. Zafar, "Effect of Customer Relationship Management on Customer Satisfaction," Proc. 2nd Global Conf. on Business, Economics, Management and Tourism, Procedia Economics and Finance, vol 23, pp. 563–567, 2015, doi: 10.1016/S2212-5671(15)00513-4.

[8] A. Souri and N.J. Navimipour, "Behavioral Modeling and Formal Verification of a Resource Discovery Approach in Grid Computing," Expert Systems with Applications, vol. 41, no. 8, pp. 3831–3849, Jun. 2014, doi: 10.1016/j.eswa.2013.11.042.

[9] N.J. Navimipour and B. Zareie, "A Model for Assessing the Impact of e-Learning Systems on Employees' Satisfaction," Computers in Human Behavior, vol. 53, pp. 475–485, Dec. 2015, doi: 10.1016/j.chb.2015.07.026.

[10] I. Mahdavi, N. Cho, B. Shirazi, and N. Sahebjamnia, "Designing Evolving User Profile in e-CRM with Dynamic Clustering of Web Documents," Data & Knowledge Engineering, vol. 65, no. 2, pp. 355–372, May 2008, doi: 10.1016/j.datak.2007.12.003.

[11] B.M. Krishna, Customer Relationship Management, Coursebook of Lovely Professional University, New Delhi (India): Excel Books Private Limited, 2013. [Online] Available: http://ebooks.lpude.in/management/bba/term_6/DMGT308_CUSTOMER_RELATIONSHIP_MANAGEMENT.pdf.