Analysis of Weakness of Data Validation from Social CRM

Ali Ibrahim[1], Ermatita[2], Saparudin[3], Zefta Adetya[4]

Dept. of Information System Faculty of Computer Science

Sriwijaya University[1,2,3,4]

Palembang, Indonesia

aliibrahim@unsri.ac.id[1], ermatitaz@gmailcom[2], saparudin1204@gmail.com[3], zadetya@gmail.com[4]

Abstract—**Developments of Technology are currently expanding rapidly, CRM technology has evolved into social CRM or CRM 2.0 utilizing from web 2.0. Social. Big social data is data derived from the activities of social network users. In the benefits of implementation of CRM, the process of validating data in analyzing the selected social media becomes a matter of concern. Because one of important in the implementation of social CRM is data. Therefore the goal of the research is to show result research in social CRM currently with comparing to see problem currently and giving the solution, furthermore describing opportunities social CRM for a company, government and all people which use technology to promote something to other people (customer). The characteristics of each social network need to be reviewed to the user. Social CRM is closely related to the behavior performed by the customer (social network users).Behavior and conditions in social media greatly affect the results to be achieved. Validating data from the result of analysis data is important to make result from implementation of social CRM can be better.**

Keywords—Social CRM, Big Social Data, web 2.0, CRM

I. INTRODUCTION

Technology has grown rapidly in people. Information Technology has evolved almost all life side that impact on behavior and ways of communicating and interacting.

Social network sites are web-based services that allow individuals to construct a public or semi-public profile and interact with another user to make connection naturally on the internet [8]. Social network site is one of a result of web 2.0 that allows the user to interact with each other in a web.

Many interactions of user activities such as commenting, sending and receiving messages, voting, posting and so on that saving in database generate becoming as big data. Big data from social networks or referred to as big social data when analyzed further can be used for the use for something useful for business, education, organizations, government, institutions, and others.

Everything is talked about and seen by users in social networks like politics, government, religion, business and products, and services. The impact of social networking development on a product. According to statistics 40% of the population view product and service information from social networks, 77% of testimonials about products and 75% of users trust users from users of social networking. It happens occurs the process naturally [1]· .

Social CRM using of Social Network in the field of CRM that is useful for, serving, and retaining customers, one example of an application of the process of admission in a university. Social CRM is aimed at selecting and prospective customers who in this case are the right student candidates. Based on information from social network account [2]· . Social implementation of CRM is also different to search for users within the social network based on the results of data mining to assess a product or service offered.

II. RELATED WORK

CRM (Customer Relationship Management)

CRM is a business approach that integrates people, processes, and technologies to increase relationships with all subscribers and to provide collaboration between all functions confronted by customers.
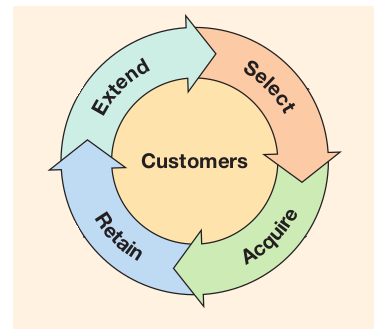

Fig.1 CRM Life Cycle[3]·

In the CRM, the customer is a vital thing because it takes the right stages in doing management.There are 4 stages in the marketing work cycle of the following customer relationships[3]:

1. Select Customers
Customer Select is the stage of identifying and establishing the type of customer based on the type that the company or organization wants to market

2.Customer Acquire
Acquiring customers is the stage of rejection and building relationships with new customers

3.Customer Retention
Customer retains a stage of retaining customers by providing needs and selecting them in a relevant way

4.Customer Extension
   Customer extension is an increasing stage of the product

CRM have focus on 3 aspects that include sales, marketing, and customer service.

Fig.2 Traditional CRM [4]·

The integration that occurs in something related to a legacy system, data warehouse, ERP (Enterprise Resource Planning) and partner. Processes that occur from the 3 aspects that have focus from CRM. CRM generates information that can be useful to CRM-related parties. Gathering information makes it very important for a product or service to be better for the customer

Operational CRM	Collaborative CRM	Analytical CRM
Marketing	Web Access	Information Search
Sales	E-Commerce	Analysis Algorithm
Services	Call Center	Community Detection
	Wireless Access	Visual Analysis

Table. Different three aspects of CRM [5]·

Social CRM
Social CRM is an approach to CRM that utilized social networking and the internet which is the result of developing web 2.0 technology. The evolution of Social CRM is an increasing of changing that changes the relationship with the utilization of technology side [6]·

Fig.3 Evolution of CRM to Social CRM [4]
From figure Above is an evolution that changes the process and relationship with the customer. The related thing is a change in a more social direction to achieve a better relationship.
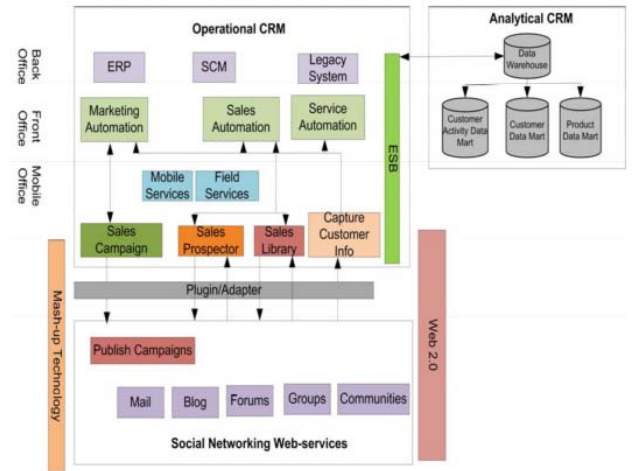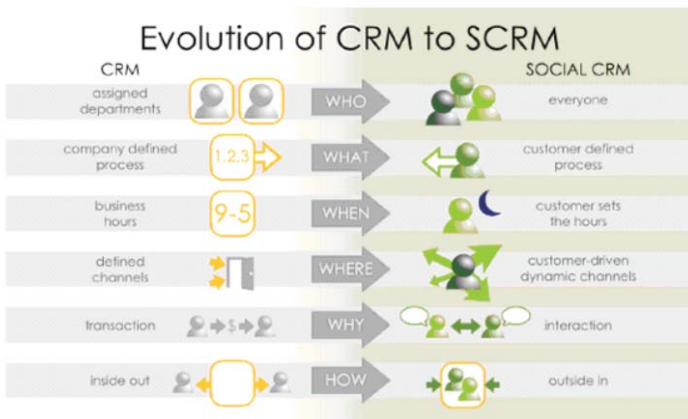

Fig.4 Social CRM System [7]

By using Social CRM organizations, we can see responses from users in using and evaluating products or services offered such as comments and likes or dislike. Information from social networks can be a decision support in shaping the organization's actions future. In addition, the interaction of organizations in the social network can be a good approaching to improve and maintain the relationship with consumers.

One of using of technology is mash-up technology that combines data, customers, and businesses into a single web platform. Components of social CRM that enable the interaction of social networks with the use of mash-up technology that is:

- Sales Prospector: Finding the right customers according to the characteristics established and predicting the relevant products used.
- Sales Campaign: Components that leverage web technology to conduct campaigns on social networks and see opportunities from user responses.
- Sales Library: A component that allows to re-locate content that has been stored for identification and is used for certain purposes
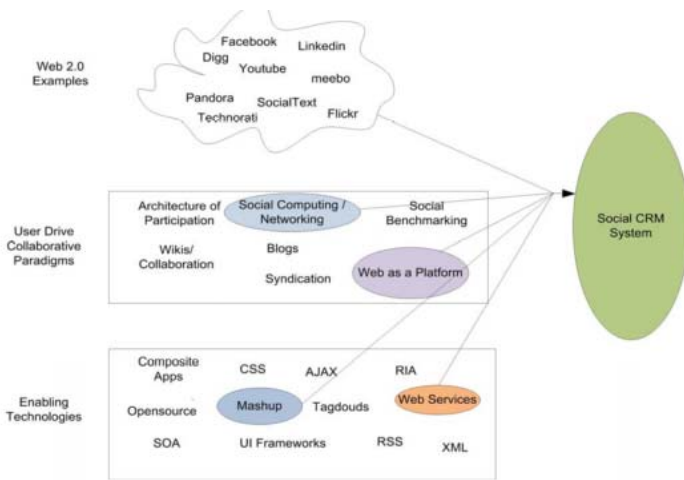
Fig.5 Collaborative Platform of Social CRM System [7]·

The use of social CRM has been done in several parts, the example processes recruitment of new students at the university, the different paths on CRM utilization.

Examples of cases that are tested at a university namely sriwijaya university. By implementing Social CRM in improving communication links like whatsapp and Facebook. From the results of the researcher's analysis of 1,279 lecturers. 80% faster communication response using whatsapp in comparison with email and web or via phone. While 20% still with via email. The reason why 80% prefer social media in improving communication links is faster information gained. From the results, it is clear Social CRM can be in communication. From the total respondents still, doubt the validity of the information submitted. Therefore it is indispensable invalidation.
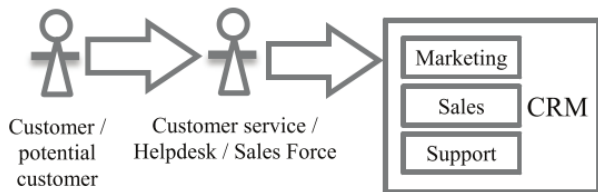

Fig.6 CRM [1]

Figure 6 Is a common flow where the customer or prospect is handled by customer service or sales force depend on condition, then CRM will be applied to be processed and analyzed.

On social CRM, the process starts from the internet (social media) or more specifically the social network. Data obtained targeted as needed. Phases used are sales → marketing → CRM evolves into social CRM with social network flow → tool (crawler) → CRM (marketing, sales, etc).

The process of analysis and extraction by retrieving data is done on a social network using a specific tool. This process is divided into 4 modules:

- Data Extraction module: Handling results from data extraction from social network
- Data Analysis Module: Part of using data from the extraction results are analyzed deeper .Data used derived from social network data.
- Social Media Data: The data in the analysis is stored into CRM storage media for subsequent development and utilization in order to generate value to get something of value from the data taken.
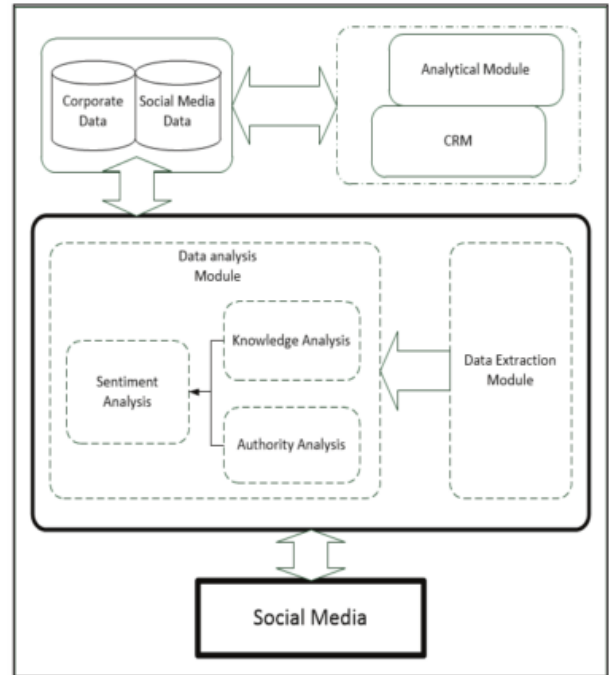- Analysis Module: The results of the analysis of the analyzed data

Fig.7 Extraction and analysis architecture of the CRM social tool[1]·

Crawler Tool is used in the process of retrieving data from social networks,then analyzed and extracted into 3 processes:

- Knowledge Analysis
  A process to see something from the quality of user opinions to a product
- Authority Analysis
  A process to see the effect of an opinion that includes the "influence scores" and "rate review" process.
- Sentiment Analysis
  A Process to see the behavior of social network users in responding and judging from a product.

Social Network has big data that can be opportunities to view the opinion of users of a product or service. Hence, extraction and analysis using Hadoop are required. The flow in the process starts from the selection of product keywords, then

collected using the crawler tools in the next extraction by category, Data stored in the database Hadoop (Hbase)

Social CRM utilization is also done on the application in the company by using a tool called VIVIE [6]. VIVIE has succeeded in implementing social CRM by looking at trends based on searched keywords and monitoring social networks that can be one of the supporting benchmarks for companies to establish decisions.

III. DISCUSSIONS

This research using literature review to find different between result research social CRM and implementation for the people in the specific case. The various research literature on the application of social CRM has caused the question of the needs and problems that occur in different cases, increasing dynamic technological developments to make competition in certain things is also increasing. Using of big social data in the application to social CRM will produce something way to make opportunities and to solve many problems with customers in some case. Focus research is comparing relate some literature to see another side in social CRM from implementing social CRM to find the problem which can be solved so as a company, government and anyone which using CRM can consider social CRM to be a way to make relation with customer. In social CRM, Changing the behavior of individuals the in using social networks from time to time should be used as an experience because it relates to the relationship that will be established with the customer. Some points of the mistake are visible from the social CRM literature that has been found:

IMPLEMENTATION TARGET

In research conducted by N. Karna [2] about the application of social CRM at the admission of new students to the university. Universities in Indonesia are divided into 2, public universities and private universities. This research is better applied to private universities considering the tendency of people to prefer public universities compared to private universities. The flow of new admissions is also almost always the same
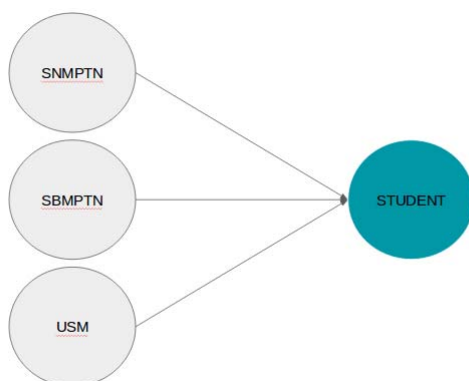

Fig.8 The flow of acceptance of public University Students

- SNMPTN is the stage where participants are selected based on report cards from previous education level.
- SBMPTN is the stage of receipt and written response
- USM is the acceptance stage where the participants do the same written test with SBMPTN.

Implementation of Social CRM at the public university is not very effective because prospective students will choose a university with a high ranking from last education.

Conditions of Social networking become one of the performance benchmarks of the application of social CRM. Social Network also has its own characteristics that cause the user also has a specific character and also from certain groups. For example LinkedIn, LinkedIn is a social network dedicated to professionals (office people). Activities in LinkedIn have many differences with other social networks. The information from the visible profile data is created like a CV (Curriculum vitae).Unique features in LinkedIn like job vacancy, apply for the job only by using CV, establishing cooperation and business relationships and much more. In this case required the decision of the intended consumer and the appropriate marketing methods.

DATA AUTHENTICITY

The problem that must be considered in the application of social CRM is seen in the data taken for the analysis process. The data collected can not be separated which is the original or not, other than that violating activities such as spreading a hoax, cyber bullying and so forth is a problem to be faced.

One of the causes of spreading hoax is behavior from the user who shares the fake site which usually contains fake news. One of evidence at news US election in 2016

Fig.9 Share of Visits to US News Websites by Source [9]

Checking the validity of data becomes important because remembering the explanations previously discussed does not explain the process so that review becomes the best option to avoid deviating results from what exists

HUMAN INTERACTION

Internet activity is something that we can automate, using certain tools, set of goals and time, the tool will automatically run the command. Can we take the example of such a spam email that allows users to send email to all targets that have been registered only with a click. With certain tools, the information can be delivered quickly. The tool automatically includes also happens on the social network. In some social networks also occur spamming, but it must be noted also that in the social network also occurs chain messages or chain posting that serves to assert an event or problem or want to attract the attention of the public, the goal sometimes for other users in this case the government or A kind to act decisively. The use of chain messages either naturally or artificially is sometimes made to bring down a particular organization or individual.

Therefore it must be known and can distinguish between the original or artificial interaction (tool) so that the data obtained is really data that is from the right interaction.

IV. CONCLUSION

Social CRM is closely related to the behavior performed by the customer (social network users). From the literature study on social CRM especially the application on social network many benefits that can be felt. Social CRM is another way for the people to make relationship with customer

More attention should be paid to the use of social CRM, the required data must be the original with a defined standard and based on the right source, therefore, the process of checking the truth of the data should be added to the analysis process of the social network data, review the characteristics From the social network and all that is inside is a thing to be reckoned

for anyone who wants to implement this social CRM, with obtained results can be in accordance with what is needed.

For the next development that develops social CRM as one way to solve the problems that occur, the data validation phase must be designed and implemented because social media is a data created naturally between interactions or human activities that require good results

V. PREFERENCES

[1] F. Z. Ennaji, A. El Fazziki, M. Sadgal, and D. Benslimane, "Social intelligence framework: Extracting and analyzing opinions for social CRM," Proc. IEEE/ACS Int. Conf. Comput. Syst. Appl. AICCSA, vol. 2016–July, 2016.

[2] N. Karna, I. Supriana, and N. Maulidevi, "Social CRM using web mining for Indonesian academic institution," 2015 Int. Conf. Inf. Technol. Syst. Innov. ICITSI 2015 - Proc., 2016.

[3] D. Chaffey, E-Business and E-Commerce Management. 2010.

[4] D. K. Sharma, "A Social Network Perspective by CRM," IEEE Int. Conf. Granul. Comput., vol. 2, pp. 2–7, 2011.

[5] X. L. Deng, L. Zhang, B. Wang, and B. Wu, "Implementation and research of social CRM tool in mobile BOSS based on complex network," 2009 1st Int. Conf. Inf. Sci. Eng. ICISE 2009, pp. 870–873, 2009.

[6] V. Company, A. C. Manager, and S. F. Insurance, Praise for The Definitive Guide to Social CRM,2015.

[7] S. Mohan, E. Choi, and D. Min, "Conceptual Modeling of Enterprise Application System Using Social Networking and Web 2.0," 2008 Int. Conf. Converg. Hybrid Inf. Technol., pp. 237–244, 2008

[8] N. B. Ellison, "Social Network Sites: Definition, History, and Scholarship," vol. 13, pp. 210–230, 2008.

[9] H. Allcott and M. Gentzkow, "Social Media and Fake News in the 2016 Election," J. Econ. Perspect., vol. 31, no. 2, pp. 211–236, 2017.