Review Article

Customer Relation Management Features on Mobile Web and the Implementation for Universities in Central Java, Indonesia

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Abstract - The growth of internet usage in Indonesia is very fast, and now 62.6% of the population has used the internet. The most common devices used to access the internet are mobile devices (98%). Higher education is very interested in establishing relationships with students and prospective students. Mobile technology is an effective means of building relationships with students and prospective students. This research objective is to find the operational features of CRM on the mobile web and analyze its mobile Website. The literature study was used to find the CRM features in the mobile web. The field study was used to analyze the CRM features of a mobile website at the University. The research object used is the University's mobile Website in Central Java Province, Indonesia. The results of the study were 27 features that were proposed to be implemented in the University. These features include: About company / Company profile on Site, Find University, Local search engines, Request for catalog (Faculty & Program), Product information online (Competence & Curriculum). The most widely used feature is Site customizing, and the feature that comes in second is Telephone facilities, while the feature ranked third is About company / Company profile on Site.

Keywords - CRM Features, Mobile Web, University.

I. INTRODUCTION

At the beginning of 2020, the number of population in Indonesia was 273523615 people. As of January 31, 2020, the number of internet users was 171260000 (or 62.6% of thepopulation).(Source:https://www.internetworldstats.com/stats3.htm#asia). The device that is used to internet access 96% user access with a smartphone device. The number of mobile devices used to access the internet compared to the total population is 124%, which means that the user average has more than one mobile device.

The website plays an important role for universities to provide information to stakeholders, especially students. The Website can also be a place for capturing stakeholder aspirations. The role of university websites, among others: 1. Introducing the profile and history of University, 2. Facilitating communication; 3. Bringing prospective new students, 4. Being the official university publication media, 5. Branding, 6. Creating a professional impression, 7. Look for partner companies and other organizations.

An important component of a website is the customer relationship management facility. Customer Relationship Management (CRM) is a comprehensive approach to creating, maintaining, and developing customer relationships [1]. CRM is a business strategy combined with technology to manage the complete customer life cycle [2] effectively. Sometimes the term E-CRM appears. The term E-CRM refers to the use of e-commerce tools or electronic channels in CRM [3]. In its development, the term E-CRM is called CRM only because of technological developments that already use an electronic basis.

In modern marketing, CRM is an important concept. Anton proposes features for CRM, including [4]: 1. Contacting the company and information gathering features (Domain fault repair, Site customization, Alternative channels, Local search engine, Membership, Mailing list, Site tour, Site map, Introduction for first - time users, Chat, Electronic bulletin board), 2. E-Commerce features (Online purchasing, Reviewing presales information online, Customization possibilities, Purchase conditions, Preview product, Links), 3.Post sales support features (FAQs, Problem-solving, Complaining Ability, Spare parts). Based on the results of reviews from various sources, Feinberg identified 16 features in E-CRM, namely [5]: Program affinity, Product highlights, Request for catalog, Quick order ability, Easy of check out, Ability to track order status, Gift certificate purchase, Store locator, On sale area, Member benefits, Order, Speed of download page, Account information, customer service page, Company history/profile, Posted privacy policy. According to Hamid and McGrath, there are 12 dimensions of E-CRM, namely [6]: Information quality, Ease of navigation, Consumer service quality, Fulfillment, Integrated marketing channels, Online community, Rewards, Personalization level, Site security, Value-added Services, Perceived trust, Price attractiveness. Referring to the research conducted by Hamid and McGrath [6], Hamid et al. [7], with 14 dimensions of E-CRM, namely: Information quality, Quality services, Ease of navigation,

Consumer service efficiency, Payment options, Security and privacy policy, Multimedia features, Personalization level, Rewards, Channel integration, Reservation and tracking, Use of social media, Lower rates, Fulfillment of service. The characteristics of organizations engaged in services will be different from the characteristics of organizations engaged in goods.

The large number of internet users who access via mobile devices is an important consideration for organizations/companies to provide information that can be accessed via mobile devices. The problem that arises is the limited interface in mobile devices due to the relatively small screen size. University is an organization engaged in the service sector and not profit-oriented. This research aims to design CRM features on the university mobile web, and the second is to analyze the implementation of CRM on the university mobile web.

II. LITERATURE STUDY

According to Whiteside, Mentz [8], school graduates looking for information about universities must found useful information regarding the priorities offered in studies, accreditation, rankings and achievements, accommodation facilities, study costs, and location on the website structure. Kittle and Ciba [9] presented the characteristics most emphasized by higher education institutions, which are considered important factors for prospective students: universities' programs, quality policies, location, and value-added. Prospective students seek entry requirements and information about courses, university location maps, contacts, and communities on the university website in certain cases.

According to Saichaie [10], participants pay close attention to the admission requirements presented on the Website. Thus, three important areas of the higher education institution's Website are Registration (information about the admission process), Faculty (academic life and learning information), and Virtual excursion (an event representing the institution). Intending students also asked the following [11]: university infrastructure, libraries, use of computers, quality of study and research programs, and other extracurricular factors (sports, leisure time, canteens, etc.). Hoyt et al. [12] proved that students with higher than average abilities are interested in university rankings. Overall, students are likely to study on accredited programs, scholarship assignments. The main criteria for choosing a university relate to information on the college's reputation, cost of study, and location. The survey results analysis shows that various factors affect the learning process, including the order of the curriculum and ICT support [13].

In July 2014, the EDUCAUSE Center for Analysis and Research (ECAR) reported that Lang and Judith defined a CRM system as a strategy, business process, and software to manage and enhance the institution's interactions with customers, such as students and prospective students, alumni, faculty and staff and potential donors [14]. They also claim that the CRM system is a core system that is changing rapidly in higher education. Ideally, CRM is used to support practices throughout the student life cycle, and CRM data is used to support the institution's understanding of student enrollment options and success.

A. Customer Relation Management (CRM)

There are various definitions of CRM. Customer Relationship Management (CRM) is a comprehensive approach to creating, maintaining, and developing customer relationships [1]. Others define CRM as a set of practices that provide an integrated and integrated view of customers in all business areas to ensure that each customer receives the highest service level [15]. CRM enables ongoing one-to-one relationships with customers. The term E-CRM refers to the use of e-commerce tools or electronic channels in CRM [3].

CRM can be classified into several types:
1. Operational CRM. This is an area that deals with the automation of business processes that involve the front-office. These areas include sales automation, marketing automation, and customer service automation.
2. Analytical CRM. This includes the capture, storage, organization, analysis, interpretation, and use of data generated from the business's operational side. Integration of analytical CRM solutions with CRM operations is important to consider.
3. Collaborative CRM. This involves the collaborative use of services and infrastructure to create interactions between companies with various existing channels. This allows interaction between customers, companies, and employees.

B. CRM Features

The study conducted by Anton and Postmus identified 25 existing features of CRM, namely [4]:

a) *Features of contacting companies and information gathering*
   - Domain fault repair.
   - Check customization.
   - Alternative channels.
   - Local search engines.
   - Membership.
   - Mailing List.
   - Site tour.
   - Site map.
   - Introduction for first-time users.
   - Chat.
   - Electronic bulletin board.
b) *Commerce Features*
   - On-line purchasing.
   - Reviewing presales information online.
   - Customization possibilities.
   - Purchase conditions.
   - Preview product.
   - Links.
c) *Post sales support features*
   - FAQs.
   - Problem solving.

- Complaining Ability.
- Spare parts.

d) *Web-based CRM feature attributes*
- Availability.
- Ease in finding
- Intuitive.
- User friendly.

Feinberg and Kadam, in their research, identified by adding 16 features to E-CRM, namely [16]:
- Affinity program.
- Product highlights.
- Request for catalog.
- Quick order ability.
- Ease of check out.
- Ability to track order status.
- Gift certificate purchase.
- Store locator.
- On-sale area.
- Member benefits.
- Order.
- Speed of download page.
- Account information.
- Customer service page.
- Company history/profile.
- Posted privacy policy.

C. *Mobile Web Evaluation Criteria*

Several researchers proposed mobile web evaluation criteria, as following:
- Lee and Benbasat with evaluation criteria for mobile web consisting of [17]: Context, content, community, customization, communication, connection, commerce, mobile settings, and mobile device constraints.
- Turel with the mobile web evaluation criteria are as follows [18]: Learnability, memorability, efficiency, errors, and satisfaction.
- Zarifopoulos and Economides with the following mobile web evaluation [19]: Interface, navigation, offered services, content, reliability, and technical aspects.
- Travis and Tay with the following evaluation criteria [20]: Interface design, user characteristics, and content delivery.
- Al-Khalifa with the following evaluation criteria [21]: Interface (Design principles, Layout and text, Flexibility and compatibility), Navigation (Logical structure, Ease of use of the Site, Search engine, Navigational necessities, Content and services offered (Information quality, Authority, Provided services, Services quality), Technical aspects (Loading speed, Browser compatibility)

Based on the above literature and considering that: (1) the university is engaged in services, (2) the University is "not" for for-profit purposes, and (3) the limited screen size of mobile devices used to access the mobile web, the

CRM feature is proposed in the University's mobile web is as follows:

Table 1.
University Customer Relation Management (CRM) Features

NO.	FITUR
1	About the company / Company profile on Site
2	University location map
3	Local search engines
4	Request for catalog (Faculty & Program)
5	Study program competence
6	Study program Curriculum
7	Product highlights (Excellence of the study program)
8	Customer service pages (Pages that contain information on facilities and services)
9	On sale area (Page for new student registration)
10	Purchase conditions (Requirements for new student enrollment)
11	Online purchasing (Online new student enrollment)
12	Frequently ask questions (FAQ)
13	Problem-solving (Help facility in case of invalid input)
14	Membership (Membership for the general public)
15	Member benefits (Information about member benefit)
16	The privacy policy posted (Information privacy policy posted)
17	Mailing List
18	Your account information
19	E-Mail
20	Telephone
21	Fax
22	Online chat
23	Voice over Ip (Voip)
24	Call back button
25	External links
26	Affinity program
27	Site customizing

III. RESEARCH METHODS

In this study, an assessment of public and private universities' mobile websites in Central Java is a province in Indonesia. Universities' mobile website is analyzed whether it contains CRM features. Researchers who act as the general public analyzed the mobile Website one by one to analyze the extent to which the CRM feature was implemented.

This research population is the websites on the mobile web of universities in Central Java Provincy in Indonesia. The number of existing universities is 60 (source of Higher Education Database, Ministry of Research, Technology and Higher Education in Indonesia). Because the size is small, all populations are used as research objects.

The type of data used is qualitative data. Researchers recorded and analyzed the existing CRM components at each mobile university website in July 2020. The data source used in this study is the primary data.

In this study, the instrument used to collect data was a list of CRM features on the mobile university website that had been made by the researcher. The list of CRM features on the mobile Website was developed based on the theory and results of research conducted by relevant previous researchers. The list of features is used to record and analyze the presence or absence of CRM features on universities' mobile Websites in Central Java Provincy.

Based on the research objectives, the list of CRM features developed is used to assess how the CRM features

are used on the mobile Website of universities in Central Java. The analysis was carried out by tabulating each feature's presence or absence on the University's mobile Website so that the percentage of use of each feature for the University's mobile Website in Central Java was known. This study will answer the extent to which CRM is implemented on the mobile Website of universities in Central Java.

IV. RESULTS AND DISCUSSION

The object of research in this research is the University mobile website in Central Java, Indonesia. The number of mobile websites used as research objects is 60. The results of the analysis of 60 university websites obtained the percentage of CRM feature users as follows:

Table 2. Number of University User CRM Features

NO	CRM FEATURES	PERCENT
1	Site customizing	100,00%
2	Telephone	98,33%
3	About the company / Company profile on Site	96,67%
4	E-Mail	91,67%
5	University location map	85,00%
6	On sale area (Page for new student registration)	85,00%
7	Purchase Conditions (Requirements for new student enrollment)	81,67%
8	Fax	81,67%
9	Request for catalog (Faculty & Program)	80,00%
10	Local search engines	70,00%
11	Online purchasing (online new student enrollment)	65,00%
12	Customer service pages (Pages that contain information on facilities and services)	55,00%
13	Online chat	55,00%
14	External links	48,33%
15	Study program competence	36,67%
16	Affinity program	26,67%
17	Study program Curriculum	20,00%
18	Frequently ask question (FAQ)	10,00%
19	Problem-solving (Help facility in case of invalid input)	8,33%
20	Voice over Ip (Voip)	3,33%
21	Product highlights (Excellence of the study program)	1,67%
22	Membership (Membership for the general public)	1,67%
23	The privacy policy posted (Information privacy policy posted)	1,67%
24	Mailing list	1,67%
25	Your account information	1,67%
26	Call back button	1,67%
27	Member benefits (Information about member benefit)	0,00%

Based on Table 2, the results show that the most widely used feature is Site customizing, which is 100%, although the scope of customization is still limited to setting page size and page moving. The definition of customizing in general means that users can change something on the Website according to their needs.

The feature that ranks second is telephone facilities, in which 98.33% of universities display telephone numbers. Telephone facilities are still popular for universities.

The third order is About company / Company profile on Site. Most company profiles contain the history of the organization and the vision and mission of the organization. The number of universities that display a company profile on their mobile Website is 97.67%, while those that do not include a company profile are 3.33%.

The feature that is ranked fourth from the number of users is E-Mail. Many organizations have reduced the use of paper for document matters. Documents tend to be directed more into files (paperless). Correspondence that used to be done physically is now mostly non-physical and is done electronically in an e-mail. The number of universities that display e-mail on their web is 91.67%.

The ranked fifth features are the University location map and sale area (page for new student registration), 85% each. Most universities complete the map on their Website. The map on the web linked to the google map helps the community get to the desired location, especially since people are already familiar with the google map on cellphone devices. On sale are (page for new student registration) is a page devoted to recruiting prospective new students. Information related to the provisions for new student admission is on that page.

Purchase conditions (requirements to new student enrollment) and Fax facilities were in the sixth rank, namely 81.67%. The purchasing conditions contain the conditions for becoming a new student. Even though they already have e-mail facilities, fax facilities are still considered important by most universities.

Some universities have not displayed the Faculty and Department / Study program's name on their mobile Website. That is, 20% of universities do not display it. This is due to the incomplete university web. The University has not considered the web as an important medium for providing information or obtaining information from the public, so the Request for catalog feature (Faculty & Program) is ranked seventh.

Local search engines were ranked eighth. That is, 70% of universities have this facility on their mobile Website. Local search engines are search engines that are used to find information on the Website itself. The online purchasing (online new student enrollment) facility is ranked ninth. The number of universities that have this facility is 65%. The tenth rank is the customer service page (pages that contain information on facilities and services) and online chat, with 55% of universities owning it. The customer service page is a special page dedicated to providing services to the public, including facilities for filing public complaints. Online chat is a chat facility that is carried out online on the University's Website.

The next features rank is as follows: External links, Study program competence, Affinity program, Study program curriculum, Frequent ask question (FAQ), Problem-solving (help facility in case of invalid input), Voice over Ip (Voip), Product highlights (excellence of the study program), Membership (Membership for the general public), Privacy policy posted (information privacy policy posted), Mailing list, Your account information, Call back button. Facilities that provide information on benefits for

members (member benefits) are not included in the University's mobile Website.

After the data is sorted based on the number of features used, the results are obtained. A university that ranks at the top in terms of completeness of its CRM features is Diponegoro University, which has used 81.48% of the CRM features. The second rank is Sultan Agung Islamic University, which has used 70.37% of the CRM features. The third rank is the University of Al-Quran Science, which already uses 66.67% of features. Universities in Central Java that have implemented more than 50 percent of the CRM features as much as 30%.

The object of this research is universities in Central Java, Indonesia. Higher education is not only University. There are other higher education besides the university, such as academy, institute, and polytechnic, that have different characteristics. Research needs to be trialed at other than universities. CRM is important for universities to improve and maintain good relations between students, parents of students, and the general public. The results showed that many CRM features had not been included in the mobile Website. The Website needs to add CRM features.

V. CONCLUSION

Based on the results of this study, the following were obtained:

1. There are 26 kinds of CRM features used in the mobile university website. The most commonly used feature is Website customizing, and the feature ranked second is the Telephone facility. In contrast, the ranked third feature is the About company / Company profile on the Site.

2. Universities in Central Java that have implemented more than 50 percent of the CRM features as much as 30%.

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