Design and Implementation of a Social CRM-Based Website Framework for Enhanced Information Services

Ali Ibrahim¹, Ahmad Fali Oklilas², Hardini Novianti³

 ¹Master of Computer Science, Faculty of Computer Science, Sriwijaya University
 ²Department of Computer Systems, Faculty of Computer Science, Sriwijaya University
 ³Department of Computer Accounting, Faculty of Computer Science, Sriwijaya University

Email: ¹aliibrahim@unsri.ac.id

Received : Apr 25, 2025; Revised : May 8, 2025; Accepted : May 8, 2025; Published : May 17, 2025

Abstract

The development of website technology has encouraged digital transformation in various sectors, especially in the provision of information services. The website not only acts as a medium for delivering information, but also as a means of interaction between service providers and users. However, there are still many institutions that have not optimized the potential of the website to the fullest to build sustainable relationships with users. The result of this research is the design of a Social CRM-Based Website Framework for Enhanced Information Services. The Social CRM model enables two-way interaction, real-time feedback monitoring, and digital community management that supports openness and active user participation. The application of this model is directed at optimizing information services through improving the quality of communication, responsiveness, and personalization of content based on user needs. The results show that the majority of users want a website that is easy to access, informative, and integrated with social media, especially Facebook. The number of respondents in this study was 150 respondents, and the application of the Quicksort Algorithm for data analysis. This study proposes a Social CRM-based website framework to enhance user engagement in academic information services. Using the User-Centered Design (UCD) method, the system was developed and evaluated through a System Usability Scale (SUS) with 106 users. The results showed a usability score of 72 (Good). Integration with Facebook showed positive engagement, although data privacy concerns were noted.

Keywords: Information System, Social CRM, Social Media, Usability, User Centered Design.

This work is an open access article and licensed under a Creative Commons Attribution-Non Commercial 4.0 International License

1. INTRODUCTION

The development of website technology has brought significant changes in various aspects of life, especially in the dissemination of information [1][2][3]. Websites no longer function only as static media, but have evolved into interactive platforms capable of providing a more dynamic user experience. This transformation enables organizations, whether in the business, government, or education sectors, to deliver information more quickly, precisely, and relevantly [1][4]. Therefore, optimizing website technology is a crucial aspect in improving the quality of information services in the digital era.

One of the main challenges in managing information services is how to ensure user involvement and satisfaction [5][6]. Modern users not only expect fast access to information, but also more personalized and responsive interactions[7]. In this context, the concept of Social Customer Relationship Management (Social CRM) is a relevant solution[8][9]. Social CRM is the development of the traditional concept of CRM by adding elements of social interaction through social media and digital platforms. With this approach, organizations can build closer relationships with users through more interactive and data-driven communication [10][11][12]. The Social CRM model combines technology, business processes, and data analytics to understand user needs and behaviors more deeply. By leveraging data from various digital channels, such as social media, forums, and websites, organizations can identify trends, respond to complaints, and provide faster and more appropriate solutions[13][14][15]. This approach also allows for automation of interactions, personalization of services, and increased effectiveness in information delivery. The application of this model is also very potential in the context of information services to improve user satisfaction [16][17].

In the digital era, optimal information services must be able to better meet user needs, both in terms of speed, relevance, and quality of interaction [18][19]. Ineffective information delivery can lead to a lack of user trust and decreased engagement in the digital ecosystem. Therefore, a Social CRM-based approach to website management can add significant value [20][21][5]. By integrating analytics, automation and social interaction technologies, information services can be tailored to user preferences more accurately. As a result, organizations can create a better experience for users and improve the effectiveness of information dissemination.

Optimization of information services based on Social CRM can be applied in various sectors, including government, education, health, and business. In the government sector, for example, responsive information delivery can increase transparency and public participation [22][23]. In education, this technology can be used to increase student engagement and facilitate access to learning materials. Meanwhile, in the business sector, Social CRM helps companies understand customer needs and increase their satisfaction. Thus, the application of Social CRM in website technology is a strategic solution to the challenges of modern information services[24][25][26].

This research aims to design a website technology framework that integrates Social CRM to increase the effectiveness of information services[27]. The website design framework is not only a medium for delivering information, but also able to build better interactions with users. This approach will benefit various stakeholders in improving the quality of information services that are more adaptive and user-centric. The developed framework design was tested in various scenarios to measure its impact on improving information services. However, few studies have developed Social CRM frameworks specifically tailored for academic departments in Indonesia.

The results of this study make a significant contribution in the field of website technology design and Social CRM. The findings of this research are not only beneficial to theoretical development in the field of computer science, but also have wide practical applications. The application of the resulting model can be a reference for organizations that want to improve their information services through technology-based approaches and social interactions. Therefore, the research results can be an innovative solution in optimizing information services in various sectors

2. METHOD

The research methodology adopts a website technology development approach designed to support the social customer relationship management (Social CRM) model to optimize information services. It is imperative that researchers apply systematic and scientific mechanisms when conducting research. The research framework helps in identifying key aspects of the research process as shown in Figure 1.



Figure 1. Research framework

2.1. Instrument Development

The questionnaire is designed to collect data from various important aspects that will be the basis for developing the website framework design.

2.2. Instrument Testing

In testing the questionnaire instrument, 2 stages were carried out: (1) testing by experts; (2) testing with a pilot test.

2.3. Data Collection

Data collection is done by distributing instruments to respondents online. The population in the study were active students majoring in information systems totaling 908 students. Sample determination using stratified random sampling technique with the following formula:

$$n = \frac{N}{1+N(e)^2} \tag{1}$$

Description: n = number of samples N = total population e = sampling error rate

The margin of error for sampling that can be tolerated and which is taken if the population is more than 100 people is 10%. So that the minimum number of respondents in this study was 90.079.

$$n = \frac{908}{1+908 \, (0,1)^2}$$
$$n = \frac{908}{10,0800}$$

$$n = 90,079$$

In this study, there were 150 respondents, above the minimum number of responses.

2.4. Data Analysis, Quicksort Algorithm

In this study, data was collected online through the Google Form platform with 150 respondents. Respondents provided responses to a questionnaire designed to measure their experiences, preferences, and expectations regarding the Website. After the data collection process is complete, data analysis is carried out to obtain more structured results. The analysis method used in this research is the Quick Sort algorithm, which is known as one of the efficient sorting algorithms. The process begins by selecting the 'pivot' element of the array, then rearranging the other elements so that all elements smaller than the pivot are in front of it and the larger elements are behind it. Once the partitioning is done, quicksort recursively applies the same method on smaller and larger sub-arrays.

2.5. Prodoce a design framework

The framework built as a result of this research.

3. RESULT

3.1. Instrument Development

The process of making research instruments by formulating the variables measured based on the research objectives, namely to evaluate the use of the website and user expectations of the features available. The instrument was formulated in the form of a questionnaire consisting of four main variables, namely: (1) demographic information; (2) expectations of website features; (3) views on social media integration; and (4) intention to use the website. Each variable is measured through a series of questions relevant to the research subject. The following table 1. Research Instruments

	Table 1. Research Instruments									
Variables	Instruments	Code								
Demographic Information	1. Are you an Information Systems student?	D1								
mormation	2 Have you ever accessed the department we	D2								
	2. Have you ever accessed the department wet	D3								
	3. Gender	D4								
	4. Age	D4								
	5. Class	D5								
	6. Frequency of Visiting the Current De Website	partment D6								
	7. I hope that the website provides easy a academic information (lecture schedule, fina	al project F1								
Expected Website	 8. The discussion forum feature between stuvery important to me 	udents is F2								
Features	9. I want a direct communication feature with	lecturers F3								
	10. I want a communication feature with other through the website	students F4								
	11. I want a communication feature with the ad	lmin and F5								
	12. I want to be able to access lecture materia through the website.	ls online F6								
	13. Notifications and reminders about the would be helpful to me	schedule F7								
	14. Attractive visual design will improve my ex in using the website.	perience F8								

E-ISSN: 2723-3871

	15. Easy and intuitive navigation is important for comfortable use of the website.	F9
	16. I want the department website to be well accessible through mobile devices (responsive)	F10
	17. Integration of the department's website with social media will make it easier for me to get the latest information.	I1
Views on Social Media	18. I support the integration of the department website with Facebook.	I2
Integration	19. I feel that social media integration will increase my interaction with the department.	I3
	20. I am concerned about data privacy with the integration of social media on the website	I4
	21. Social media integration can disrupt my focus on accessing academic information.	15
	22. I intend to use the new department website regularly.	N1
	23. I will utilize all the features available on the website	N2
Website	24. I am willing to recommend the website to my friends.	N3
Use	25. I believe that the new website will help in academic activities	N4

3.2. Instrument Testing

Instrument testing was carried out in two stages, namely, testing by and pilot testing.

a. Results of expert testing

The research instruments were first validated by two experts. This validation aims to ensure that the questionnaires used have content validity and can accurately measure the objectives that have been set in this study. The validation process included a review of the suitability of the questions to the research objectives, language clarity, and content relevance. With this validation, the instruments used are reliable in the data collection process.

Table 2. Instrument Validation Results									
Code	Exp Relev	pert vance	Expert In	I-	Category				
Coue	Expert	Expert	Agreement	CVI	Category				
D1	3	<u> </u>	2	1.00	Valid				
D1 D2	3	4	2	1.00	Valid				
D3	3	3	2	1.00	Valid				
D4	3	3	2	1.00	Valid				
D5	3	3	2	1.00	Valid				
D6	3	4	2	1.00	Valid				
F1	3	4	2	1.00	Valid				
F2	3	4	2	1.00	Valid				
F3	3	4	2	1.00	Valid				
F4	3	4	2	1.00	Valid				
F5	3	4	2	1.00	Valid				
F6	3	4	2	1.00	Valid				
F7	3	4	2	1.00	Valid				

F8	3	4	2	1.00	Valid
F9	3	4	2	1.00	Valid
F10	3	4	2	1.00	Valid
I1	3	4	2	1.00	Valid
I2	3	4	2	1.00	Valid
I3	3	4	2	1.00	Valid
I4	3	3	2	1.00	Valid
I5	3	3	2	1.00	Valid
N1	3	4	2	1.00	Valid
N2	3	4	2	1.00	Valid
N3	3	4	2	1.00	Valid
N4	3	4	2	1.00	Valid

b. Test results with pilot testing

Pilot testing was conducted involving 30 respondents. Through this stage, potential problems such as unclear questions or irrelevant responses can be identified and corrected before the instrument is used on a wider scale. The results of this pilot testing provided important feedback to improve the overall quality of the research instrument.

Table 3. Results of Pilot Testing Variable Expectations of Website Features

Cronbach's Alpha	N of Items
.944	10

Based on Table 3, the Cronbach's Alpha value of .944 indicates that the reliability level is very high. This indicates that the items in the instrument are very consistent. This value indicates that it is very suitable for use in this study.

Table 4	Pilot T	esting	Results	of the	Views on	Social	Media	Integration	Variable
1 auto 4.	I HOU I	esting	Results	or the	VIEWS UL	Social	wicula	megration	variable

Cronbach's Alpha	N of Items
.899	6

Based on Table 4, the Cronbach's Alpha value of 0.899 indicates a high level of instrument reliability. This instrument consists of 6 items, and this value indicates that the items in the instrument have very good consistency to measure the intended variables.

Table 5. Results of Pilot Testing of Website Intention to Use Variables

Cronbach's Alpha	N of Items
.883	4

Based on Table 5, the Cronbach's Alpha value of 0.883 indicates that the instrument has a good level of reliability. This instrument consists of 4 items, which are consistently able to measure the intended variables with high reliability. Based on the pilot testing results, the research instrument shows a high level of reliability with a Cronbach's Alpha value of 0.880. This shows that the instrument used has good internal consistency in measuring the variables tested.

3.3. Data Collection

Data collection was conducted online using Google Forms as the platform for data collection. The questionnaire was opened to respondents from July 28 to October 29, 2024. The number of respondents was 150 respondents.

3.4. Analisis data, Algoritma Quicksort

After the data collection process is complete, data analysis is carried out to obtain more structured results. The analysis method used in this research is the Quick Sort algorithm, which is known as one of the efficient sorting algorithms. The Quick Sort algorithm is attached below.

 $\begin{array}{l} Quicksort(A, low, high)\\ if low < high then\\ Pi = Partition(A, low, high)\\ Quicksort(A, low, Pi - 1)\\ Quicksort(A, Pi + 1, high)\\ \end{array}$ $\begin{array}{l} Partition(A, low, high)\\ Pivot = A[high]\\ i = low - 1\\ for j = low to high - 1 do\\ if A[j] < Pivot then\\ i = i + 1\\ Swap(A[i], A[j])\\ \end{array}$ $\begin{array}{l} Swap(A[i + 1], A[high])\\ return i + 1 \end{array}$

The Quicksort algorithm is one of the sorting methods that uses a "divide and conquer" approach to organize elements in an array. It works by dividing the array into two sub-arrays based on a key element called the pivot. Elements smaller than the pivot are moved to the left side of the array, while larger elements are placed on the right side. Once this partitioning process is complete, the algorithm recursively sorts the sub-arrays on both sides of the pivot. This recursive process continues until each sub-array consists of only one element or is empty, indicating that the sorting is complete. In this way, Quicksort can produce efficiently sorted arrays, and due to its adaptive nature, it is often used in practical situations that require sorting large amounts of data. The existing quicksort algorithm is then implemented into the python programming language. From the data that has been processed, the following table is obtained:

Table 6.	Quicksort	Results in	Table Form

No.	Question	Mean	Majority Answer	Majority Percentage
1.	I expect the website to provide easy access to academic information	3.03	3	39.33%
2.	The discussion forum feature between students is very important to me	2.95	3	33.33%
3.	I want a direct communication feature with lecturers through the website	2.97	2	33.33%
4.	I want a communication feature with other students through the website	3.03	3	39.33%
5.	I want a communication feature with the admin and department leaders through the website	3	3	32%

6.	I want to be able to access lecture materials online through the department website	3.01	3	40%
7.	Notifications and reminders about schedules would be very helpful to me	2.93	2	32%
8.	An attractive visual design will improve my experience in using the website	3.01	3	42.67%
9.	Easy and intuitive navigation is important for comfortable website use	2.97	3	35.33%
10.	I want the department website to be well accessible through mobile devices (responsive)	2.95	3	38%
11.	Integration of the website with social media will make it easier to get the latest information	3.75	4	32%
12.	I support the integration of the website with Facebook	3.75	4	35.33%
13.	Integration with other social media (Instagram, Twitter) will provide more benefits	3.11	3	36.67%
14.	I feel that social media integration will increase interaction	3.76	4	33.33%
15.	I am concerned about data privacy with social media integration on the website	3.09	3	34.67%
16.	Social media integration can disrupt my focus on accessing academic information	2.98	3	32%
17.	I intend to use the new website regularly	3	3	32.67%
18.	I will utilize all the features available on the website	2.98	3	38%
19.	I am willing to recommend the website to my friends	3.08	3	32.67%
20.	I believe that the new website will help in academic activities.	3.03	3	31.33%

3.5. Prodoce a design framework

Based on table 6, there is a significant positive trend towards social media integration on the website. The majority of respondents agreed that integration with social media would make it easier for them to get the latest information, with an average score of 3.75 and 35.33% of respondents supporting integration with Facebook in particular. In addition, integration with other social media platforms such as Instagram and Twitter were also considered to provide additional benefits, although the level of agreement was slightly lower with an average of 3.11. Respondents also felt that social media integration could improve their interaction with the department, indicated by an average score of 3.76 and a majority percentage of 33.33%.

However, there are some concerns that need to be addressed regarding this integration. About 34.67% of respondents expressed concerns about data privacy due to social media integration, with an average score of 3.09. In addition, 32% of respondents felt that social media integration could disrupt their focus on accessing academic information, which is reflected in the average score of 2.98. Nonetheless, the intention to regularly use the new website remained fairly stable with an average score of 3 and a majority percentage of 32.67%.

Overall, the integration of social CRM on the website shows great potential in improving information access and interaction between users. However, to ensure successful implementation, it is important to address privacy-related concerns and ensure that social media features do not distract users

from the main academic objectives. Thus, a balanced approach between benefits and risk mitigation will increase acceptance and effective use of the new website. From the data analysis, the design framework is as follows.



Figure 2. Design framework

Based on Table 6, the majority of users visit the website with moderate frequency (48.87%) and rate ease of access to academic information as the most important feature (63.91% with an average score of 4.58). In addition, interactive features such as chat and forums and social media integration also received significant attention.

These results show that users have diverse needs in using the website, ranging from easy access to academic information to attractive visual displays, as well as integration with social media to increase interaction. In addition, the majority of respondents rated the importance of easy-to-use UI/UX design and the desire to integrate with social media, especially Facebook. Therefore, at this stage, understanding user needs that focus on ease of access, visual experience, and connection with social media is a priority in developing a system that is responsive to user needs.

Through this understanding, the development of the user interface can better match their expectations and interaction habits, which will ultimately increase user satisfaction and engagement with the website. This step aims to identify and define the specific needs of the users that will be implemented in the developed system. User needs are important aspects that must be met in order for the system to function as expected and meet user expectations. In this process, data and information from the user analysis stage that has previously been carried out become the main foundation in detailing the needs of the system.

3.6. Testing the design framework

In testing the design framework using the System Usability Scale method. The System Usability Scale method is carried out using Microsoft Excel and calculated based on SUS rules. Data processing in this study begins with an odd number of questions the scale value is reduced by one and for questions with even numbers five minus the scale number. Furthermore, the number of values is multiplied by 2.5 to get the overall SUS value. After that, the average or mean value of the overall SUS score obtained is calculated. In this study, the total respondents obtained were 106 respondents. The following are the results of the SUS calculation, as in table 7.

	Table 7. SUS calculation							n Score				
R	01	02	03	04	05	06	07	08	00	010	Total	(Total x 2.5)
1		Q2	Q3	V ⁺	Q 3	QU 1	<u>v</u> '	Q0	Ŷ	QIU	20	(10tal X 2.5)
1.	3	1	3	3	3	4	3	4	2	2	28	70
2.	3	1	3	4	3	4	3	4	2	1	28	70
3.	4	2	2	4	4	4	2	4	3	1	30	75
4.	3	2	2	3	4	4	3	3	2	2	28	70
5.	3	1	2	3	4	4	3	4	2	2	28	70
6.	4	2	3	4	4	4	3	4	3	1	32	80
7.	3	1	3	3	3	4	3	4	2	2	28	70
8.	3	2	3	4	4	4	2	3	3	2	30	75
9.	4	2	2	3	4	4	3	4	2	1	29	73
10.	3	2	3	4	3	4	3	3	2	1	28	70
11.	3	1	3	3	4	4	3	3	2	2	28	70
12.	4	1	2	4	4	3	2	3	3	1	27	68
13.	3	2	3	3	3	4	3	3	2	2	28	70
14.	4	2	2	4	4	3	3	4	3	2	31	78
15.	3	1	3	3	3	4	3	4	3	1	28	70
16.	4	2	3	3	4	4	3	4	2	2	31	78
17.	4	1	2	4	3	4	2	4	2	1	27	68
18.	3	2	2	4	4	4	3	4	2	2	30	75
19.	3	2	2	4	3	3	3	4	2	1	27	68
20.	3	1	3	4	3	4	3	4	2	1	28	70
21.	4	2	3	4	3	4	3	4	2	1	30	75
22.	3	1	3	3	4	3	3	3	2	2	27	68
23.	4	2	3	3	3	4	2	4	2	1	28	70
24.	4	1	3	4	4	4	3	4	3	1	31	78
25.	4	2	3	4	4	4	3	4	2	2	32	80
26.	4	2	3	4	3	4	3	4	3	1	31	78
27.	4	2	3	3	3	4	3	3	2	1	28	70
28.	3	2	2	4	3	3	2	4	2	1	26	65

Jurnal Teknik Informatika (JUTIF)

P-ISSN: 2723-3863 E-ISSN: 2723-3871

29.	4	1	2	3	4	4	3	3	3	1	28	70
30.	4	2	2	4	4	4	3	4	3	2	32	80
31.	4	2	2	4	4	3	3	4	2	1	29	73
32.	3	1	3	4	3	3	3	3	2	2	27	68
33.	4	1	3	4	3	3	3	3	3	1	28	70
34.	4	2	3	4	4	4	2	3	2	1	29	73
35.	4	1	3	4	3	4	2	3	3	1	28	70
36.	3	1	2	4	4	3	2	3	2	2	26	65
37.	4	1	3	3	4	4	3	4	2	1	29	73
38.	3	1	2	3	4	4	3	4	3	2	29	73
39.	3	1	2	4	3	4	3	3	2	1	26	65
40.	3	2	2	3	3	4	3	4	3	1	28	70
41.	3	1	2	3	3	4	3	3	3	2	27	68
42.	3	1	2	3	3	4	3	4	3	2	28	70
43.	4	1	3	3	4	3	3	4	3	1	29	73
44.	3	1	2	4	3	3	3	4	3	1	27	68
45.	3	2	3	3	4	4	3	4	3	2	31	78
46.	4	2	2	3	4	4	3	3	2	1	28	70
47.	4	1	3	4	4	4	3	3	3	2	31	78
48.	4	2	3	3	4	4	3	4	2	2	31	78
49.	3	2	2	4	3	4	3	3	3	1	28	70
50.	3	2	2	3	4	3	3	3	3	1	27	68
51.	3	1	2	4	3	3	3	3	2	2	26	65
52.	4	1	2	4	3	4	3	4	2	1	28	70
53.	3	1	3	4	3	3	3	3	2	1	26	65
54.	4	2	3	4	3	3	3	3	3	1	29	73
55.	3	2	3	3	4	3	3	3	3	2	29	73
56.	4	1	2	3	4	3	3	3	3	1	27	68
57.	3	2	3	4	4	3	3	4	3	2	31	78
58.	4	1	2	3	4	4	3	4	2	2	29	73
59.	4	2	3	4	4	4	3	4	2	2	32	80

Jurnal Teknik Informatika (JUTIF)

P-ISSN: 2723-3863 E-ISSN: 2723-3871

60.	3	2	3	3	3	4	3	3	3	2	29	73
61.	3	1	2	4	3	4	3	3	3	2	28	70
62.	4	2	2	4	4	3	3	4	3	1	30	75
63.	4	2	3	3	3	3	3	4	3	2	30	75
64.	3	1	2	3	3	4	3	3	2	1	25	63
65.	3	2	2	3	4	3	3	3	2	2	27	68
66.	4	1	3	3	3	3	3	3	2	2	27	68
67.	3	1	2	3	4	4	3	3	2	1	26	65
68.	3	2	3	3	4	4	3	4	3	1	30	75
69.	3	2	2	4	4	4	3	4	3	2	31	78
70.	3	1	2	3	4	4	3	3	3	2	28	70
71.	3	2	3	3	4	4	3	3	2	1	28	70
72.	3	2	2	3	4	4	3	4	2	1	28	70
73.	3	2	2	3	4	4	3	3	2	2	28	70
74.	3	2	3	3	4	4	3	4	3	2	31	78
75.	3	2	2	3	3	3	3	4	3	2	28	70
76.	4	1	3	4	4	3	3	4	3	2	31	78
77.	4	1	2	4	4	4	3	3	2	1	28	70
78.	4	2	3	3	4	4	3	4	3	1	31	78
79.	3	1	3	3	3	3	3	3	2	2	26	65
80.	3	2	2	3	3	4	3	4	3	2	29	73
81.	3	2	2	3	3	4	3	3	2	2	27	68
82.	4	1	2	3	4	4	3	3	3	2	29	73
83.	4	2	3	4	4	3	3	4	3	1	31	78
84.	4	2	3	3	3	4	3	3	2	1	28	70
85.	3	1	2	3	4	4	3	4	2	2	28	70
86.	4	2	3	3	3	3	3	4	2	2	29	73
87.	3	2	3	4	4	4	3	3	3	1	30	75
88.	4	1	3	3	3	3	3	4	3	1	28	70
89.	3	2	3	3	3	3	3	4	2	1	27	68
90.	3	2	3	3	3	3	3	3	3	2	28	70

Jurnal Teknik Informatika (JUTIF)

P-ISSN: 2723-3863 E-ISSN: 2723-3871

91.	4	2	3	3	4	4	3	4	2	2	31	78
92.	3	1	3	4	4	3	3	3	3	1	28	70
93.	3	1	3	3	4	4	3	4	3	1	29	73
94.	4	2	2	4	4	3	3	4	2	2	30	75
95.	3	1	2	3	4	4	3	4	3	1	28	70
96.	4	1	3	4	4	3	3	4	2	2	30	75
97.	4	2	2	3	4	4	3	4	3	1	30	75
98.	4	1	2	4	3	4	3	3	3	2	29	73
99.	3	1	3	4	4	3	3	3	3	2	29	73
100.	3	1	3	4	3	3	2	4	3	2	28	70
101.	3	1	2	4	4	4	3	3	2	1	27	68
102.	4	1	3	4	4	4	3	3	3	1	30	75
103.	3	2	3	3	4	4	2	3	3	2	29	73
104.	4	2	3	4	4	3	3	3	2	2	30	75
105.	3	2	2	4	3	3	3	4	3	2	29	73
106.	4	1	2	4	3	3	3	4	3	2	29	73
	Average score (Final Result)											72

After the calculation, the average SUS value is 72. To determine the SUS results in the form of user acceptance levels, there are several ways that can be used, namely based on the interpretation of rank comparisons and can be in Figure 3.



There are four perspectives used to determine the results of the SUS method score value calculation, namely:

1. NPS (*Net Promoter Skor*)

The NPS value indicates how likely users are to recommend the tested product. NPS has three categories: detractor, passive, and promoter. The NPS of website development falls into the "passive" category.

2. *Acceptability*

Acceptability ranges consist of 3 parts, namely not acceptable, marginal (low and high) and acceptable. Acceptability is used to assess the extent of user acceptance of a system. Website development falls into the "Marginal High" category, which means that it is marginally high.

3. *Grade Scale* Grade Scale is used to determine the level of grades consisting of letters A, B, C, D, E, and F. If the website development is converted to letter grades, it is in the "C" grade category.

4. *Adjective Rating* Adjective Rating is used to determine the rating of a system. Adjective Rating involves an assessment at various levels, namely worst imaginable, poor, ok, good, excelent and best imaginable. For Adjective Rating, the SUS score for website development falls into the "Good" category.

4. CONCLUSION

This research successfully developed a website framework design with the concept of Social Customer Relationship Management (Social CRM) that is able to post from the website to Facebook and vice versa. Although Facebook integration is not fully automated and public due to legal constraints, the website framework design has met the research objectives by applying the User Centered Design method in UI/UX development. The results of usability testing using the System Usability Scale (SUS) show an average score of 72, which means the website has "Good" usability and is well received by users.

CONFLICT OF INTEREST

The authors declares that there is no conflict of interest between the authors or with research object in this paper.

ACKNOWLEDGEMENT

Acknowledgement is only addressed to funders or donors and object of research. Acknowledgement can also be expressed to those who helped carry out the research.

REFERENCES

- C. Uwasomba *et al.*, "Data-Driven Agility: Assessing Agile Culture transformation in a technology organisation," *Inf. Softw. Technol.*, vol. 183, no. March, p. 107729, 2025, doi: 10.1016/j.infsof.2025.107729.
- [2] C. Shah and E. M. Bender, "Envisioning Information Access Systems: What Makes for Good Tools and a Healthy Web?," *ACM Trans. Web*, vol. 18, no. 3, 2024, doi: 10.1145/3649468.
- [3] S.-D. Gheorghe, "A Review of the Information Technology and Operational Technology Convergence Using Internet of Things within the Circular Economy," *Proc. Int. Conf. Bus. Excell.*, vol. 18, no. 1, pp. 829–845, 2024, doi: 10.2478/picbe-2024-0073.
- [4] D. Tichomirov, A. Ferraris, and A. Lamprecht, "Semantic-Based Anomaly Detection Approach for Large-Scale Time Series Data in Acceleration Events," vol. 21, no. 1, 2025, doi: 10.4018/IJSWIS.373313.
- [5] F. Mohammed, R. B. Ahmad, S. B. Hassan, Y. Fazea, and A. I. Alzahrani, "An empirical evidence on the impact of social customer relationship management on the small and medium enterprises performance," *Int. J. Inf. Manag. Data Insights*, vol. 4, no. 2, p. 100248, 2024, doi: 10.1016/j.jjimei.2024.100248.
- [6] M. M. Naumann, S. M. Olaru, G. S. Lampe, and F. Pitz, "Analysis of Relationships between Non-conformities, Process Maturity and Continual Improvement in Information Security Management Systems," *Proc. Int. Conf. Bus. Excell.*, vol. 18, no. 1, pp. 494–506, 2024, doi: 10.2478/picbe-2024-0043.
- [7] M. Mudjahidin, A. P. Aristio, S. M. Febyanti, L. Junaedi, and A. S. Septiananda, "Structural

Model for Analyzing the Impact of Social CRM on Customer Relationship Performance in Automotive Manufacturing Company," *Procedia Comput. Sci.*, vol. 234, no. 2023, pp. 861–868, 2024, doi: 10.1016/j.procs.2024.03.073.

- [8] A. P. Aristio *et al.*, "Strategic and Operational Profit Increase Structural Model for Social CRM in Hospitals," *Procedia Comput. Sci.*, vol. 234, pp. 837–844, 2024, doi: 10.1016/j.procs.2024.03.070.
- [9] M. García-Nieto, J. M. Ramón-Jerónimo, and R. Flórez-López, "Effectiveness of Customer Relationship Management in Shopping Malls: Mall–Retailer Collaboration Empirics," Adm. Sci., vol. 15, no. 1, 2025, doi: 10.3390/admsci15010031.
- [10] R. Rostamzadeh, M. Bakhnoo, W. Strielkowski, and D. Streimikiene, "Providing an innovative model for social customer relationship management: Meta synthesis approach," *J. Innov. Knowl.*, vol. 9, no. 3, p. 100506, 2024, doi: 10.1016/j.jik.2024.100506.
- [11] Meyliana, B. Sablan, A. N. Hidayanto, and E. K. Budiardjo, "The critical success factors (CSFs) of social CRM implementation in higher education," *Int. Conf. Res. Innov. Inf. Syst. ICRIIS*, no. 1, 2017, doi: 10.1109/ICRIIS.2017.8002528.
- [12] A. Ibrahim, A. Pratiwi, D. I. Meytri, Madri, M. A. Kurniawan, and N. Yuniarti, "Measuring Customer Satisfaction Using CRM Scorecard in Canteen FASILKOM UNSRI," *Proc. 2018 Int. Conf. Electr. Eng. Comput. Sci. ICECOS 2018*, no. October, pp. 403–408, 2019, doi: 10.1109/ICECOS.2018.8605253.
- [13] I. A. Elshaer, A. M. S. Azazz, S. Fayyad, S. A. Mohamed, A. M. Fouad, and E. A. Fathy, "From Data to Delight: Leveraging Social Customer Relationship Management to Elevate Customer Satisfaction and Market Effectiveness," *Inf.*, vol. 16, no. 1, pp. 1–23, 2025, doi: 10.3390/info16010009.
- [14] S. Natu and M. Aparicio, "Journal of Innovation," *J. Innov. Knowl.*, vol. 7, no. 4, p. 100248, 2022, [Online]. Available: https://doi.org/10.1016/j.jik.2022.100248
- [15] A. Ibrahim, D. R. Indah, and D. I. Meytri, "The implementation of social customer relationship management for tourism information system," *Indones. J. Electr. Eng. Comput. Sci.*, vol. 24, no. 3, pp. 1578–1588, 2021, doi: 10.11591/ijeecs.v24.i3.pp1578-1588.
- [16] J. Xue, "Social media marketing, customer relationship management strategies, and e-commerce strategies: Basis for marketing performance framework," *Int. J. Res. Stud. Manag.*, vol. 12, no. 2, pp. 155–166, 2024, doi: 10.5861/ijrsm.2024.1026.
- [17] T. Njonge, "Influence of Psychological Well-Being and School Factors on Delinquency, During the Covid-19 Period Among Secondary School Students in Selected Schools in Nakuru County: Kenya," vol. VII, no. 2454, pp. 1175–1189, 2023, doi: 10.47772/IJRISS.
- [18] P. Meyliana, A. N. Hidayanto, and E. K. Budiardjo, "Social Media Adoption for Social CRM in Higher Education: an Insight from Indonesian Universities," *Int. J. Synerg. Res.*, vol. 4, no. 2, p. 7, 2016, doi: 10.17951/ijsr.2015.4.2.7.
- [19] M. A. Almarashdah, "The role of organizational culture on the relationship between employee training and job performance in Jordan," *Uncertain Supply Chain Manag.*, vol. 12, no. 1, pp. 505–512, 2024, doi: 10.5267/j.uscm.2023.9.002.
- [20] I. A. Elshaer, A. M. S. Azazz, H. A. S. Elsaadany, and A. K. Elnagar, "Social CRM Strategies: A Key Driver of Strategic Information Exchange Capabilities and Relationship Quality," *Inf.*, vol. 15, no. 6, pp. 1–23, 2024, doi: 10.3390/info15060329.
- [21] F. Shalihati, U. Sumarwan, H. Hartoyo, and L. N. Yuliati, "Mapping Customer Relationship Management Research in Higher Education: Trends and Future Directions," *Adm. Sci.*, vol. 15, no. 2, pp. 1–21, 2025, doi: 10.3390/admsci15020068.
- [22] C. De Muylder, J. L. La Falce, J. R. L. Guerraand, J. A. Viana, and O. Reinhold, "Model of acceptance and use of social customer relationship management in micro and small enterprises," *Int. J. Innov.*, vol. 13, no. 1, pp. 1–43, 2025, doi: 10.5585/2025.27096.
- [23] A. Ibrahim, Ermatita, and Saparudin, "Social Customer Relationship Management as a Communication Tool for Academic Communities in Higher Education Institutions through Social Media," *Int. J. Adv. Comput. Sci. Appl.*, vol. 13, no. 5, pp. 401–411, 2022, doi: 10.14569/IJACSA.2022.0130548.
- [24] S. S. R and N. Legowo, "Overcoming Challenges in Social CRM Implementation: A Systematic

Analysis of Emerging Trends and Best Practices," *J. Syst. Manag. Sci.*, vol. 14, no. 8, pp. 382–393, 2024, doi: 10.33168/jsms.2024.0824.

- [25] D. Griol, J. M. Molina, A. Sanchis, and Z. Callejas, "A data-driven approach to spoken dialog segmentation," *Neurocomputing*, vol. 391, pp. 292–304, 2020, doi: 10.1016/j.neucom.2019.02.072.
- [26] A. Ibrahim *et al.*, "Social Consumer Relation Management Using Social Media As a Marketing Scheme in University," *J. Appl. Eng. Technol. Sci.*, vol. 5, no. 1, pp. 229–244, 2023, doi: 10.37385/jaets.v5i1.3149.
- [27] M. A. M. Popescu, A. Barbu, I.-C. Costea-Marcu, and D. Dumitriu, "Conceptual Framework for Unified E-Government Web Platform," *Proc. Int. Conf. Bus. Excell.*, vol. 18, no. 1, pp. 3503– 3514, 2024, doi: 10.2478/picbe-2024-0284.