Knowledge Management System Analysis on the Admission Website for Adding Knowledge Sharing Features

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ABSTRACT

The website for new student admission is a medium for promotion and registration at the STMIK Amik Riau campus. Currently, the website already has several criteria from the knowledge management system but has never been analyzed. The criteria that already exist on the STMIK Amik Riau website are Repositories, Access and Authentication Layer, Application Layer, Collaborative Intelligence & Filtering. Although the STMIK Amik Riau admission website already has several knowledge management criteria, this website still finds several problems, including between users who do not know what happened when the incident occurred. Then The College Database Section, The Finance Section and The Academic & Student Administration Section often mismatch new student data. For this reason, it is necessary to add criteria, namely the Interfaces Layer, where it stores problems that occur on the website or on the knowledge sharing. However, before adding knowledge sharing, an analysis was carried out using SECI. From this analysis, it can be seen that the admission website users are ready to apply knowledge sharing later.

Keywords : Website, registration, STMIK Amik Riau, Knowledge Sharing

1. INTRODUCTION

New student admissions at the Universities or College are routinely carried out every year. The admission process starts from searching the information, filling out the registration form, to making payments to the admissions officer [1]. At some universities, there are two ways to do the registration process, namely offline and online [2]. Offline registration, where prospective new students come directly to the Universities to find information and to register. While online registration is looking for information related to the desired university through the website or social media and then registering online through the website.

STMIK Amik Riau is one of the colleges that accept new students every year. The new student admission process at STMIK Amik Riau starts from a meeting or planning for the student admissions, campus promotions, prospective students registration, entrance tests, graduation announcements, and becoming new students [3]. During the registration process, prospective new students can register directly through the website address at https://register.sar.ac.id/ [4]. On the website, registrants send registration files and proof of registration for further processing.

The STMIK Amik Riau admission website is a combination of several systems such as registration, entrance tests, announcements, and so on. A good system is a system that is integrated with several other systems. However, an integrated system is not good enough, for that it is necessary to have a knowledge management system. Knowledge management system is a strategy to increase the effectiveness and the opportunities to develop user competence of a system [5]. In fact, the STMIK Amik Riau admission website already has several knowledge management system criteria

including a repository, access, and authentication layer, application layer, collaborative intelligence & filtering. [6].

The STMIK Amik Riau admission website has never been analyzed for the knowledge management system. To find out the weaknesses on the website or the system, improvements are made at any time so that the system can be used properly and sustainably. To find out the problems on the website is to analyze or evaluate them [7][8]. This study will focus on analyzing the STMIK Amik Riau admission website which focuses on the knowledge management system contained in the Interface Layer.

All criteria in the knowledge management system are important to be applied to the website or the system. For this reason, it is necessary to analyze the STMIK Amik Riau admission website to find out its shortcomings. From the observations that have been made, there are some complaints from several sections, such as the absence of knowledge sharing on the website, thus causing ignorance between users who do not know what happened when the incident occurred. Then The College Education Database Section, The Finance Section, and The Academic & Student Administration Section there are often inconsistencies in the data of new students. The possibility that other problems will increase or system users feel comfortable with the current system can be known after the knowledge management system analysis is carried out.

Knowledge management system analysis was carried out using the SECI model. A knowledge is created through the interaction between tacit and explicit knowledge. These interactions are expressed in four phases of knowledge conversion, namely Socialization, Externalization, Combination, and Internalization [9]. The SECI model was used by several previous researchers to analyze the system [10], to develop the system [11], and to build the system [12].

The research conducted focuses to apply knowledge sharing on the new student admission website through the analysis phase using the SECI model. To perform this analysis, it involves a user who is also an admissions officer. Admission officers consist of new student recipients, interviewers, and the head of admissions. The results obtained from this study are recommendations for improvements to the STMIK Amik Riau website so that it can be better to operate and be sustainable in its use.

2. RESEARCH METHODS

The following is the research methodology used in this study to make it easier to conduct this research.
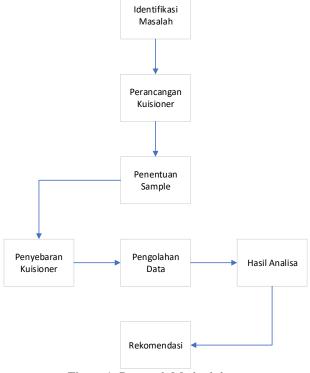
Figure 1. Research Methodology

The following is the explanation of picture 1.

A. *Problems Identification*

At this stage, problem identification on the website is carried out. There are some problems in this research, but this research focuses on knowledge sharing. The problem that occurs at this time is the unavailability of a system that accommodates the problems experienced by the admission committee when they are on duty. These problems will usually be immediately notified by the head of the admission or notified via WhatsApp. However, the problem is that the head of the admission is often slow to notify other committees, and in WA chats, the problems encountered when they occur are overwritten by other chats.

B. *Questionnaire Design*

The design of the questionnaire refers to the SECI model, namely Socialization, Externalization, Combination, and Internalization.
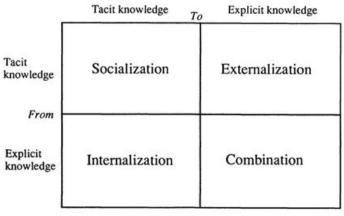

Figure 2. SECI Model [13]

The following is an explanation of the SECI model [11]:
   a) Socialization
      In the socialization process, social interaction occurs between individuals so that there is an interaction between tacit knowledge, generally, the form of the socialization process such as discussion, stories, or sharing experiences.
   b) Externalization
      It is the process of converting or translating knowledge in tacit form into explicit knowledge, generally in the form of texts or pictures.
   c) Combination
      It is a process of dissemination and/or development of existing explicit knowledge. The documented knowledge can be disseminated through a meeting in the form of a document or through an education or training process.
   d) Internalization
      The process of changing explicit knowledge into tacit knowledge is generally carried out through the learning and/or study process conducted, or the experiences that are going through by every individual.

In making the questionnaire that has been designed there are 4 dimensions, namely knowledge, culture, technology, and SOPs. In the knowledge dimension, there are 7 instruments, then in the cultural dimension, there are 7 instruments, in the technology dimension there are 6 instruments, and the last dimension is SOP there are 8 instruments. The total number of instruments in this study was 28 instruments.

C. Sampling and Questionnaire Distribution

The distribution of questionnaires on new student admissions was given to several parties who were responsible for the admission process. These parties are listed in the decision letter issued by the college leader. Sampling in this study uses non-probability sampling which is a sampling technique that does not provide equal chance or opportunities for each element or member of the population to be selected as a sample. [14]. Non-probability sampling has several techniques, one of which is a saturated sample. The use of saturated sampling is because the population is less than 30 people. Saturated sampling, namely the number of samples is the entire population [15].

D. Data Processing and Analysis Results

Data processing is carried out on the data generated through the distribution of questionnaires carried out via google form. The data is then processed using SPSS to see the validity and reliability of the distributed instruments. After the process is done, the next step is to analyze the data by looking at the presentation on each instrument which is then given the recommendation to add the knowledge sharing feature on the college admission website.

E. Recommendation

The recommendations generated from the research come from the percentage of each instrument that has been analyzed. This recommendation contains the stages of implementing knowledge sharing so that it can be carried out properly and run as desired.

3. RESULTS AND DISCUSSION

The results of the questionnaire have been generated through SPSS data processing. Figure 2 is the distribution of data which is then tested for validity and reliability.

	N	%
Cases Valid	17	100.0
Excluded[a]	0	.0
Total	17	100.0

Figure 2. the data distribution validity test results

In Figure 2 it can be seen that the validity test carried out contained 17 respondent data. The next step is to validate the distributed instrument using the product-moment correlation formula [16].

$$r_{count} = \frac{n(\sum XY) - (\sum X)(\sum Y)}{\sqrt{\{n.\sum X^2 - (n.\sum X)^2\}\{n.\sum Y^2 - (\sum Y^2)\}}} \quad (1)$$

Description:
n   : Number of Data Pairs X and Y.
$\sum X$: Total Sum of Variable X.
$\sum Y$: Total Sum of Variable Y.
$\sum X^2$: Square of The Total Variable X.
$\sum Y^2$: Square of The Total Variables Y.
$\sum XY$: Multiplying the Total Number of Variable X and Variable Y.

Then the question instrument is tested into the r-count formula with the criteria that if r-count > r-table, then it is declared valid, and vice versa [17]. In this study, the number of samples tested was 17 respondents. The value of the r-table with a level of 5% of 17 respondents is 0.482. Table 1 is the result of the validity test that has been carried out using SPSS.

Table 1. Validity Test Results

No	R-count	R-tabel	Description
1	0.853	0.482	Valid
2	0.921	0.482	Valid
3	0.906	0.482	Valid
4	0.888	0.482	Valid
5	0.871	0.482	Valid
6	0.899	0.482	Valid
7	0.902	0.482	Valid
8	0.929	0.482	Valid
9	0.939	0.482	Valid
10	0.913	0.482	Valid
11	0.853	0.482	Valid
12	0.851	0.482	Valid
13	0.649	0.482	Valid
14	0.875	0.482	Valid
15	0.873	0.482	Valid
16	0.918	0.482	Valid
17	0.857	0.482	Valid
18	0.904	0.482	Valid
19	0.911	0.482	Valid
20	0.918	0.482	Valid
21	0.722	0.482	Valid
22	0.847	0.482	Valid
23	0.874	0.482	Valid
24	0.787	0.482	Valid
25	0.891	0.482	Valid
26	0.729	0.482	Valid

27	0.705	0.482	Valid
28	0.688	0.482	Valid
Total	1	0.482	Valid

After testing the validity, the next step is to test the reliability. The reliability test is carried out to determine the level of accuracy of the test and non-test measuring instruments used [18]. An instrument can be said to be reliable if the instrument can be performed at different times and on different occasions with the same results [19]. The reliability test was carried out by referring to the statistical reliability table by comparing the value of Cronbach's Alpha > Limit of Realibitility, then the instrument is said to be reliable [20]. Table 2 is the Reality level of the coefficient interval, with levels ranging from very low, low, moderate, high, and very high [21].

Tabel 2. List of Interpretation of Coefficient r

Coefficient Interval	Realibitility Level
0.800-1.000	Very High
0.600-0.800	High
0.400-0.600	Moderate
0.200-0.400	Low
0.000-0.200	Very Low

After calculating with SPSS, the reliability value of the instrument that has been distributed is 0.985 which when interpreted to the coefficient r, the instrument has very high reliability.

Reliability Statistics

Cronbach's Alpha	N of Items
.985	28

Figure 3. Reliability Test Results

After testing the validity and reliability, the next step is to analyze the answers from the respondents, that is the admissions committee. The results obtained are quite satisfactory related to the use of the website or the admission system. However, there are still some users who are not optimal in getting information related to the problems experienced by the committee while on duty. For this reason, knowledge sharing is needed in dealing with these problems. The following are questions that are considered important in this research to build knowledge sharing.

Indicators that are considered important are indicator 6 on the knowledge dimension, then on the cultural dimension, there are 2 indicators, namely 12 and 13. Furthermore, on the technology dimension, there are also 2, namely indicators 18 and 19, and the last is the SOP dimension on indicators 27 and 28. Table 3 is the percentage resulting from indicator 6 i.e. I always documented my knowledge.

Table 3. Percentage of Indicator 6

		Frequency	Percentage	Valid Percentage	Cumulative Percentage
Valid	TS	1	5.9	5.9	5.9
	KS	2	11.8	11.8	17.6
	S	10	58.8	58.8	76.5
	SS	4	23.5	23.5	100.0
	Total	17	100.0	100.0	

From table 3 it can be seen that there is 1 committee that disagrees and 2 less agree related to always documenting their knowledge. The 10 committees agreed to the statement, but the documentation carried out is still stored in the admission officer WA Group which is often buried with other chats. In the cultural dimension, there are 2 indicators that are used as references in building knowledge sharing.

Table 4. Percentage of Indicators 11

		Frequency	Percentage	Valid Percentage	Cumulative Percentage
Valid	TS	1	5.9	5.9	5.9
	KS	1	5.9	5.9	11.8
	S	10	58.8	58.8	70.6
	SS	5	29.4	29.4	100.0
	Total	17	100.0	100.0	

Table 5. Percentage of Indicators 12

		Frequency	Percentage	Valid Percentage	Cumulative Percentage
Valid	TS	2	11.8	11.8	11.8
	KS	4	23.5	23.5	35.3
	S	7	41.2	41.2	76.5
	SS	4	23.5	23.5	100.0
	Total	17	100.0	100.0	

Tables 4 and 5 are instruments on the cultural dimension, indicator 11 related to statements that always shared the knowledge gained with fellow committee members. There was 1 committee that disagree and 1 less agree with the statement. Then on indicator 12, which is related to receiving information and knowledge given by the colleagues. In that statement, there were 2 committees that disagreed and less agree 4. The number of people who did not agree was because the committee did not announce it thoroughly, only to the committee who asked the questions so that the other committees would not ask for knowledge or information that would be obtained except through meetings held each time for evaluation. Then in tables 6 and 7 are the dimensions of technology that are used as a reference to build this knowledge sharing.

Table 6. Percentage of Indicators 18

		Frequency	Percentage	Valid Percentage	Cumulative Percentage
Valid	TS	1	5.9	5.9	5.9
	KS	1	5.9	5.9	11.8
	S	9	52.9	52.9	64.7
	SS	6	35.3	35.3	100.0
	Total	17	100.0	100.0	

Table 7. Percentage of Indicators 19

		Frequency	Percentage	Valid Percentage	Cumulative Percentage
Valid	TS	1	5.9	5.9	5.9

	KS	1	5.9	5.9	11.8
	S	9	52.9	52.9	64.7
	SS	6	35.3	35.3	100.0
	Total	17	100.0	100.0	

From the two tables above, there are similarities, such as there is 1 disagree and 1 less agree. in table 6 the instruments that are asked are related to uploading and downloading the materials obtained in the admission system. Then in table 7, the instruments are related to always using the internet to share with other committee members. The entire committee on average already knows this technology dimension because most of the committee are graduates in the field of information technology such as informatics, computer science, information systems, and information technology. Then in Tables 8 and 9 are the dimensions of the SOP that are used as a reference in building knowledge sharing.

Table 8. Percentage of Indicators 27

		Frequency	Percentage	Valid Percentage	Cumulative Percent
Valid	TS	3	17.6	17.6	17.6
	KS	2	11.8	11.8	29.4
	S	10	58.8	58.8	88.2
	SS	2	11.8	11.8	100.0
	Total	17	100.0	100.0	

Table 9. Percentage of Indicators 28

		Frequency	Percentage	Valid Percentage	Cumulative Percentage
Valid	TS	4	23.5	23.5	23.5
	KS	2	11.8	11.8	35.3
	S	9	52.9	52.9	88.2
	SS	2	11.8	11.8	100.0
	Total	17	100.0	100.0	

Table 8 provides statements related to the institution conducting training for the committee assigned to the admissions committee. In indicator 27 there are 3 disagree and 2 less agree. Then in table 9 provides a statement related to the training provided according to or not with institutional operational standards. From indicator 28, there are 4 committees that disagree and 2 less agree.

From the results obtained in this study, it can be seen that to apply system knowledge, especially on the interface layer criteria, all system users are ready. This can be seen from the committee in charge of admissions who are able to understand the application system and the internet. However, because there is no sharing feature on the STMIK Amik Riau admissions website which causes misunderstandings and ignorance of the problems that occur on the website.

4. CONCLUSION

From the explanation of the introduction to the results section, it can be concluded that the application of knowledge sharing on the admissions website is very feasible. This is because the entire admissions committee is familiar with technology such as operating computers and the internet. Of all the instruments presented, there are 2 indicators given by respondents that are unsatisfactory, namely those related to receiving information and knowledge given by their colleagues, and the questions related to the training. However, this research still has many shortcomings that need to be improved.

The research conducted is only in the analysis phase. For the future, the application of the system needs to be carried out which is adjusted to the analysis of the readiness of its users using a framework such as the Technology Readiness Index (TRI). Then this study also has not discussed related to the data generated by the admissions website, whether the data generated is valid or needs improvement if it is used by other units. For this reason, it is necessary to conduct research related to the data generated so that this admissions website can be used sustainably. Therefore, a gradual evaluation must be carried out to find out the shortcomings and continue to update the website according to need.

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