

Analysis of Knowledge Management in Information Systems Faculty of Da'wah and Communication Studies UIN Syarif Hidayatullah Jakarta based on Usability Evaluation

Tom Hardi

Pamulang University, Information Technology, Indonesia

Abstract. Information systems are media used to channel information. each campus has a medium for channeling information. One of them is the UIN Syarif Hidayatullah Jakarta campus. One of the information systems owned by Uin Syarif Hidayatullah Jakarta is the information system at the Faculty of Da'wah and Communication Studies. In this system there are several parts, namely the homepage, accreditation, academic, student affairs, library and others. The purpose of this study is to evaluate Usability to improve user satisfaction in using this information system. The research method used is literature study, field studies and SUMI (Software Usability Measurement Inventory) questionnaire. The questionnaire was conducted on 20 respondents namely 10 lecturers and 10 students of the da'wah and communication faculty. The questionnaire was carried out in 3 categories, namely effectiveness, efficiency and satisfaction with the linker agreed, disagreed and did not know. The results of the SUMI questionnaire calculation of the information system are 80, 75,75,70,70,87.5. The usability evaluation results are above average, meaning that usability in the Da'wah and Communication faculty information system has been going well.

Keyword: Knowledge Management, Information systems, usability evaluation

Received 13 May 2020 | Revised 2 July 2020 | Accepted 10 June 2020

1 Introduction

Higher education has a very important concept which can build a real nation through the concepts of education, research and community service [1]. In the field of education, information technology is manifested in a system called an academic information system [2]. Uin Syarif Hidayatullah is a campus located in South Tangerang. The application of the Knowledge Management System is implemented in the Information Systems Communication Science and Da'wah. The Information System is a medium for sharing knowledge [3]. The information system greatly facilitates various activities such as downloading and exchanging data [4]. The information system is a source of knowledge in an institution for example the

*Corresponding author at: Pamulang University, Information Technology, Indonesia

E-mail address: dosen01116@unpam.ac.id

scope of lectures, namely universities. To find out the use of knowledge on the system is done by the KMSLC (Knowledge Management System Life Cycle) method. Users who use the Da'wah and Communication information system are students and lecturers. In addition, the need to measure the system through usability is very necessary. In this study the authors used the additional method of adoption of SUMI (Software Usability Measurement Inventory). The respondents used consisted of 10 lecturers and 10 students with 60 questions.

2 Literature Review

2.1 Related research

This study considers the importance of KMS in all fields, especially small and medium-sized businesses [5]. So it is necessary to understand the KMS trend by studying journals from several decades [5]. Other research related to KM also explains the importance of KMS in companies through four stages of knowledge transformation namely socialization, externalization, combination and internalization [7]. In addition, the application of KMS also needs to share knowledge about certain products in the company, for example [8]. Through certain products, it is necessary to contribute users by utilizing technology [9]. The application of KMS in other fields is smart agriculture where KMS plays a role in storing, editing, and verifying crop production [10]. To improve the quality of a system, it needs to have usefulness, there are several studies related to usability, namely Research entitled Application of Testing Methods of Usability in Evaluation of Prabumulih City Government Website, the results of this study indicate that learning ability is 100%, Efficiency 66.66%, memorability 58.33%, satisfaction 53.33% which can be used by users [11]. Research entitled Measurement of Use of Financial Information Systems Case Study: Ambassador of Internal Transactions Discourse (DuWIT), The results of this study indicate the usefulness of above 72% so that this application is declared user friendly [12].

2.2 Knowledge Management System

Knowledge management is also the process of managing knowledge by capturing, storing and disseminating knowledge using information technology media [13]. Knowledge Management consists of software systems as well as integrating and disseminating information for users for the learning process and making decisions [14]. KM implementation can enhance human capital management performance through the

A. Analysis of Evaluating Existing Infrastructure

Evaluation Process of Existing Infrastructure This is the initial stage of the KM System Life Cycle adopted from KMSLC. This process is carried out by looking at the characteristics of users of Da'wah information and communication systems UIN Syarif Hidayatullah Jakarta.

B. Collection of Knowledge

Knowledge acquisition is done by creating a Knowledge Map on the Da'wah information and communication system of UIN Syarif Hidayatullah Jakarta. Where each Map is integrated and interconnected

C. Implement a KM system and evaluate usability

Implementing the KM system is done by taking a screenshot of the Da'wah information and communication system of UIN Syarif Hidayatullah Jakarta.

D. Evaluation

The evaluation uses the SUMI (Software Usability Measurement Inventory) questionnaire with 20 respondents, 10 student respondents, and 10 lecturer respondents. knowledge exchange and collaboration assignment [15].

2.3 Usability

To increase the usability of a system for the community, it is needed Usability of the system. In this study the authors used the simplest usability using the SUMI (Software Usability Measurement Inventory) questionnaire was used, a questionnaire developed by Cork Collage University [16]. Usability testing is a bond between the user and the system used where the user will use the system and find flaws [17].

3 Methodology

The method used in this study is the method adopted from KMSLC (Knowledge Management System Life Cycle). Where in this study using several stages, namely Analysis of Existing Infrastructure Evaluation, Capture Knowledge, Implement KM systems, Evaluation [18].

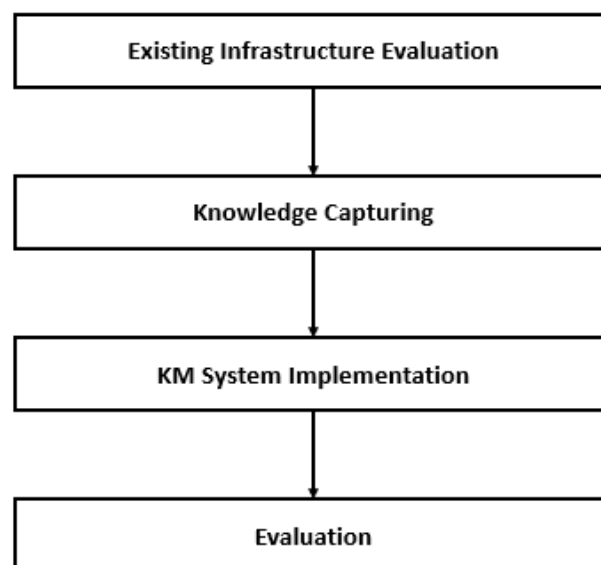


Figure 1 Research Method

The stages of the research method consist of:

1. Existing Infrastructure Evaluation

This is the initial stage of the KM System Life Cycle adopted from KMSLC. This process is carried out by looking at the characteristics of users of Da'wah information and communication systems UIN Syarif Hidayatullah Jakarta.

2. Knowledge Capturing

Knowledge acquisition is done by creating a Knowledge Map on the Da'wah information and communication system of UIN Syarif Hidayatullah Jakarta. Where each Map is integrated and interconnected

3. KM system Implementation

KM system implementation is done by taking a screenshot of the Da'wah information and communication system of UIN Syarif Hidayatullah Jakarta.

4. Evaluation

The evaluation uses the SUMI (Software Usability Measurement Inventory) questionnaire with 20 respondents, 10 student respondents, and 10 lecturer respondents.

4 Result

4.1 Evaluate Existing Infrastructure

The Existing Infrastructure Evaluation explains about the Characteristics of UIN Jakarta Information and Communication Science Information System users, where the user of this system consists of Students and Lecturers. Where is this User who uses this application in finding information, re-registration, or the latest information related to Da'wah Science and Communication UIN Jakarta. The sampling technique of respondents used snowball sampling technique. The author uses 20 respondents, consisting of 10 students and 10 lecturers. The Tangerang Selatan web page is <http://fidkom.uinjkt.ac.id> contained in Figure 2 is the initial web page.



Figure 2 faculty of da'wah and communication science in UIN Jakarta

4.2 Knowledge Capture

Knowledge Capture in Figure 3 explains about the mapping of knowledge contained in the Da'wah information system and communication science in Jakarta. The knowledge capture of Da'wah and Communication Science information systems in UIN Jakarta consists of several sections namely the homepage, accreditation, academic, student affairs, library, research, E-Campus, Online Academic Form and our Contact.

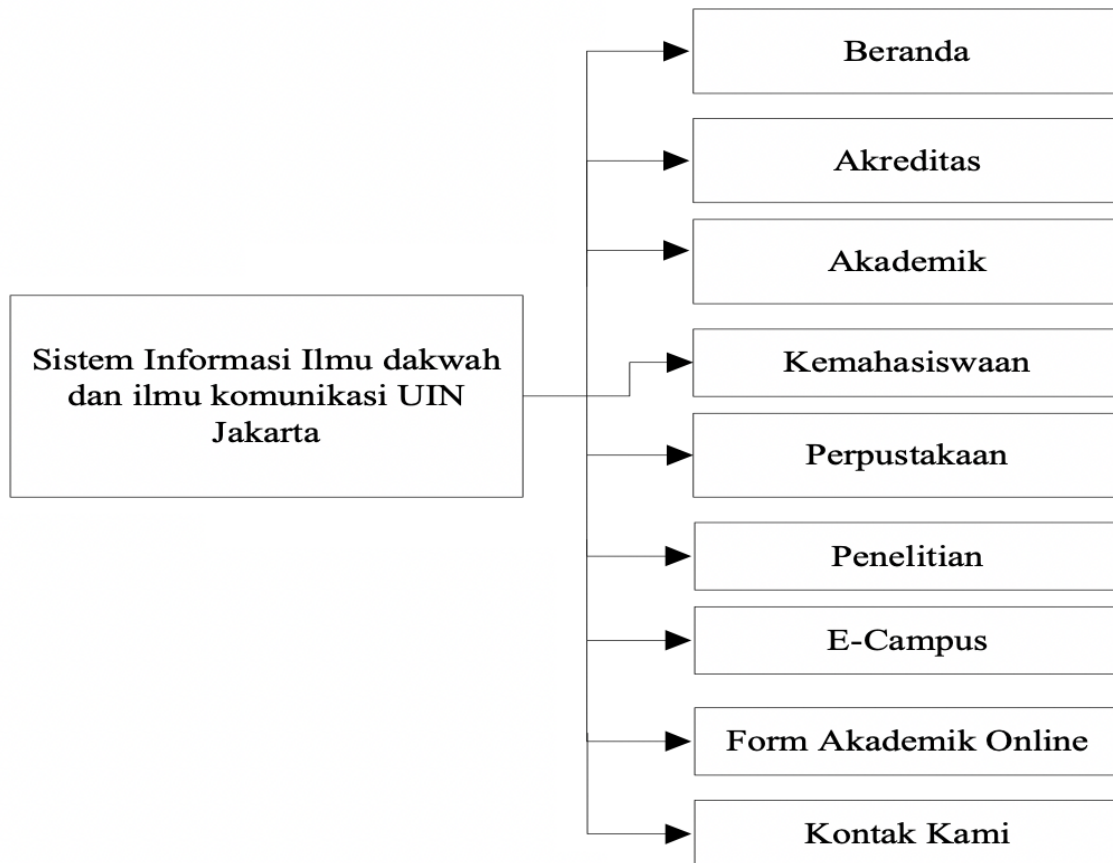


Figure 3 Knowledge Capture of Information System in Da'wah and Communication Science UIN Syarif Hidayatullah Jakarta

4.3 Implement KM System

The home page consists of a general description of the activities, visions, missions and history of the Faculty of Da'wah and Communication Science. Accreditation consists of BAN PT and AUN QA, BAN PT consists of Institutional accreditation and Study Program accreditation. Academic consists of all the majors found in the faculty of da'wah and communication science uin and current activities. Student affairs consist of student organizations and alumni. The library consists of OPAC (catalog) and forms to become members of the library. The study consisted of the results of student work in the form of a thesis contained in each class. E-Campus refers to the academic system of students in which there are student grades and student tracer studies. The online academic form consists of requests for research permits, active lecture letters and others that can be done online. Our collections consist of addresses and telephone numbers that can be contacted at any time. The start page of the faculty of da'wah and communication is contained in Figure 4 area. Figure 5 is E-campus which refers to the AIS of the student concerned



Figure 4 Main Page of Implement KM System in Da'wah and Communication Science



Figure 5 E- Campus in Da'wah and Communication Science



Figure 6 General and procurement section page

Figure 6 is our contact, which consists of the address and telephone number that can be contacted.

4.4 Evaluation

The vision of the Faculty of Da'wah and Communication Science is: "To be a leading faculty in education, research, and community service based on Da'wah and communication science in the frame of scientific, Islamic, and Indonesian integration at the regional and international levels at. To realize this vision, it is necessary to have an evaluation, especially an evaluation of the use of the Da'wah information system and the UIN syarif Hidayatullah Jakarta communication menu. This evaluation consists of a detailed interface on the information system. This study uses a questionnaire adopted from SUMI (Software Usability Measurement Inventory). The purpose of conducting a questionnaire is to evaluate the system, measure usability and can be a learning medium for users of the application to be used. Usability is a context for using an application with measures of effectiveness, efficiency and satisfaction so that it can measure the extent to which an application can be used easily. Instructions for completing the questionnaire, namely:

1. This questionnaire sheet contains 30 questions regarding user usability in accessing Da'wah Information Systems and Communication Studies. Lecturers and Students as many as 20 respondents, provided that 10 lecturers and 10 students ...
2. Put a check mark (✓) in the column provided that best reflects your choice with the choice of agree (S), don't know (TT) and disagree (TS).

Calculations The SUMI questionnaire is conducted in the categories S, TT, TS where S (agree) times 4, TT (don't know) times 2, and TS (disagree) times 0. The calculation results of the Median Effectiveness, Efficiency and satisfaction for lecturers and students are shown in Table 1, Table 2, Table 3, Table 4, Table 5, Table 6. Table 7 and Table 8 Results of the SUMI questionnaire against Lecturer and students.

Table 1 Lecturer Effectiveness Categories

Lecturer Effectiveness Categories									
1	2	3	4	5	6	7	8	9	10
30	75	75	75	80	80	100	100	100	100
<div style="border: 1px solid black; width: 50px; margin: 0 auto; padding: 2px 10px;">80</div>									

Table 2 Lecturer Efficiency Categories

Lecturer Efficiency Categories									
1	2	3	4	5	6	7	8	9	10
10	20	60	75	75	75	100	100	100	100
<div style="border: 1px solid black; width: 50px; margin: 0 auto; padding: 2px 10px;">75</div>									

Table 3 Lecturer Satisfaction Categories

Lecturer Satisfaction Categories									
1	2	3	4	5	6	7	8	9	10
45	50	60	60	70	70	90	100	100	100
<div style="border: 1px solid black; width: 50px; margin: 0 auto; padding: 2px 10px;">70</div>									

Table 4 Students Effectiveness Categories

Students Effectiveness Categories									
1	2	3	4	5	6	7	8	9	10
30	30	50	60	70	70	95	95	100	100
<div style="border: 1px solid black; width: 50px; margin: 0 auto; height: 15px;"></div> 70									

Table 5 Students Efficiency Categories

Students Efficiency Categories									
1	2	3	4	5	6	7	8	9	10
60	60	60	70	70	70	80	100	100	100
<div style="border: 1px solid black; width: 50px; margin: 0 auto; height: 15px;"></div> 70									

Table 6 Students Satisfaction Categories

Students Satisfaction Categories									
1	2	3	4	5	6	7	8	9	10
45	60	70	70	80	95	95	100	100	100
<div style="border: 1px solid black; width: 50px; margin: 0 auto; height: 15px;"></div> 87,5									

Table 7 Results of the SUMI questionnaire against Lecturer

User	Lecturer		
	Effectiveness	Efficiency	Satisfaction
1	30	10	45
2	75	20	50
3	75	60	60
4	75	75	60
5	80	75	70
6	80	75	70
7	100	100	90
8	100	100	100
9	100	100	100
10	100	100	100
Median	80	75	70

Table 8 Results of the SUMI questionnaire against students

User	Student		
	Effectiveness	Efficiency	Satisfaction
1	30	60	45
2	30	60	60
3	50	60	70
4	60	70	70
5	70	70	80
6	70	70	95
7	90	80	95
8	100	100	100
9	100	100	100
10	100	100	100
Median	70	70	87.5

5 Conclusions

Evaluation usability in Da'wah Information Systems and Communication UIN Jakarta has been successfully carried out using a questionnaire SUMI (Software Usability Measurement Inventory). Respondents used in this study consisted of 20 respondents, 10 lecturers and 10 students. The results of the SUMI questionnaire calculation namely 80, 75,75,70,70 and 87.5. Results Usability above average means usability on This system has entered good category. For further research need to try testing the application with another method.

REFERENCES

- [1] M. Br. Ginting et al, "Pengembangan sistem pengetahuan berbasis ontologi dan jaringan semantik", *Jurnal Perpustakaan Pertanian*. vol. 19, no, 1. 2010
- [2] R. Tan, "Perancangan model manajemen pengetahuan menggunakan model nonaka takeuci (studi kasus administrasi akademik)", *Jurnal Informatika*. vol. 6, pp. 51-64 no.1. 2010.
- [3] M. I. Sikki, "Membangun manajemen pengetahuan dalam ketahanan pangan", *Jurnal LPPM PARADIGMA*. vol.11, no. 1. 2010
- [4] Soullignac V, Ermine JL, Paris JL, Devise O, Chanet JP, "A Knowledge Management System for Exchanging and Creating Knowledge in Organic Farming", *The Electronic Journal of Knowledge Management*, vol. 10, pp. 163-182, 2012.
- [5] Hamidah, "Pengembangan Situs PTN Menggunakan Usability Engineering Dan Evaluasi Usability Dengan Kuesioner SUMI", *Skripsi*, Bogor (ID): Institut Pertanian Bogor, 2013 .
- [6] R. Cerchiano, E. Espasito. "Using Knowledge Management System: A Taxonomy of SME strategis", *International J. of Information Management*, 1551-1562 , 2017.
- [7] K. Iskandar, M. I. Jambak, R. Kosala, H. Prabowo, "Current Issue on Knowledge Management System for future Research: A Systematic Literature Riview", *International Conference on Computer Science and Computational Intelligence ICCSCI*. Procedia Computer Science 116 (68–80), 2017.
- [8] F. M. Cordova, F. A. Gutierrez. 2018. "Knowledge Management System in Service Companies". *The International Academy of Information Technology and Quantitative Managemnt*, The Peter Kiewit Institute, University of Nebraska. Procedia Computer Science 139: 392-400.
- [9] Y. Xin, V. Ojanen, J. Huiskonen. "Dealing With Knowledge Management Practices in different Product Lifecycle Phases Within Product Services System". 11th CIRP Conference on Industrial Product- Service Systems. Procedia CIRP 83: 111-117. 2019
- [10] P.O. Skobelev, E. V. Simanova, S.V. Smimov. D. S. Budaev, G. Yu. Voshchuk, A. L Morokov. Development of Knowledge Base in The "Smart Farming" System For Agricultural Enterprise

- Managemnt. 13th Internasional Symposium “Intelligent Systems” (INTELS’ 18). *Procedia Computer Science* 150: 154-161, 2019.
- [11] Hidayat W, Radis HY, Efendi U, “Penerapan Metode Usability Testing dan Evaluasi Situs Web Pemerintahan Kota Prabumulih”, *Jurnal Teknik Informatika Universitas Bina Darma Palembang*, 2014.
- [12] L.F. Lai, “A Knowledge Engineering Approach To Knowledge Management”. *Information Sciences an international journal*. vol. 177, pp. 4072-4094, 2007.
- [13] A. J, Rhem, UML For Developing Knowledge Management Systems. Boca Raton New York : Taylor &Francis Group, 2006.
- [14] J. Kayani, M. Q. Zia. The Analysis of Knowledge , Knowledge Management and Knowledge Management Cycles : A Broad Review. 1, 2012.
- [15] V. E. Veenendaal, 1998. Questionnaire Based Usability Testing. Conference Proceedings European Software Quality Week; Brussels, November 1998. Valkeenswaard: Improve Quality Services Waalreseweg..
- [16] Baihaqi MAW, Rosidi A, Syahdan SA, “Analisis Usability Aplikasi E-Learning Di Fakultas Teknik dan Ilmu Komputer Unsiq Wonosobo”. *Jurnal PPKM III*, pp. 159-173: 2354869x.
- [17] E. M. Awad, H. Ghaziri, Knowledge Management. Prentice Hall, 2010.