A Model of Information System and Publication for Unnes Community Service Targeted Villages

M. Burhan Rubai Wijaya[1], Karsinah[2], Aprila Niravita[3], Ahmad Yulianto[4] and M. Kurniawan[5]

[1]*Faculty of Engineering, Semarang State University, Indonesia*
[2]*Faculty of Economics, Semarang State University, Indonesia*
[3]*Faculty of Law, Semarang State University, Indonesia*
[4]*Faculty of Language and Art, Semarang State University, Indonesia*
[5]*Semarang State University, Indonesia*

Keywords: Information System, Database, Community Service.

Abstract: A system for Community Service Administration has actually been initiated in the previous research of which the results were already implemented. One of them is Community Service Online System which is used to handle KKN Loksi Tahap II and Alternative II B. It has proved to be helpful for students, field lecturers (DPL) and the Centre for Community Service especially to handle reports. However, there are still problems in this system such as report administration which is incompatible to hierarchy principles, ineffective communication between field lecturers (DPL), district and or regency coordinators and the Centre for Community Service. Monitoring and evaluation of DPL's performance is also a problem. It results in complaints from students and stake holders. This study aimed to: (1) develop a bilingual information system, (2) provide database for community services programmes and target/partner villages and (3) check the system effectivity. As an applied research, this study was scheduled to be conducted in 2018/2019 Academic Year. The result shows that the new information system proved useful not only for the administrator but also for the users. It also has a more interesting interface, more complete content and most of all more accessible to those who need information about community service program

1 INTRODUCTION

The Centre for Community Service (Pusbang KKN) is one of the units in the Institute for Research and Community Service (LP2M) of UNNES. It is responsible for administering community service programmes starting from planning, conducting and evaluating all activities. Planning is the first stage of all that should be done as well as possible. For effectivity purposes, the Centre for Community Service plans its programmes for one whole academic year at once. Here are the considerations: (1) Annual programme of Community Service includes 2 KKN Lokasi and 1 KKN Alternative; (2) Community Service is inseparable from UNNES academic year; (3) a huge number of students participating and; (4) as an interdisciplinary and cross-sectoral activity, community service involves many parties both inside and outside of UNNES.

Taking into account the above mentioned aspects, it is urgent that The Centre for Community Service

(Pusbang KKN) has an appropriate information system. Actually, it already has its own portal whose url address is https://kkn.unnes.ac.id/v3/. This site provides information on community services such as guidance & regulations, timeline, procedure, administration and monitoring. Students and field lecturers (DPL) are given account and password to access this system. Nevertheless, as nothing is perfect, this system is not complete and far from being perfect.

A system for Community Service Administration was actually initiated in the previous research of which the results were already implemented. One of them is Community Service Online System which is used to handle KKN Loksi Tahap II and KKN Alternative II B. It has proved to be helpful for students, field lecturers (DPL) and the Centre for Community Service especially to handle reports. However, there are still problems in this system such as report administration which is incompatible to hierarchy principles, ineffective communication

between field lecturers (DPL), district and or regency coordinators, and the Centre for Community Service. Monitoring and evaluation of DPL' performance is also a problem. Consequently, complaints were pouring in from students and stake holders regarding community service administration.

Of the above-mentioned aspects, there are at least three things that current system can not accomodate yet and therefore require us to develop a new system, namely:

1) Publishing the Results of Community Service Activities.

It is true that the current system allows students to submit reports that contain documentation of their activities. Unfortunately, the reports are made in document format (Word, Excel & PDF) making it impossible to see the content directly without downloading and opening that particular file manually. Besides, this system does not enable students to upload photos or videos like in other systems or social medias.

2) Creating Database for Villages.

Although the current system contains quite sufficient data on the number of students involved, plotting, distribution, field lecturers (DPL) and monitoring & evaluation, there are other things to add especially detailed information on villages like geographical conditions, characteristics, society and natural potentials, community services previously conducted there, etc.

This database may contain information on target/partnered villages like Wonoloyo, Cepoko and also Corporate Social Responsibility activities which are accessible to all academics at UNNES.

3) Developing Bilingual Site.

In line with Internasional Year 2018 that UNNES has launched, developing a bilingual website (Indonesian and English) is essential. Moreover, UNNES has signed MoU with several universities like UPSI (Malaysia) and Dhurakij Pundit University (Thailand). This cooperation shall allow UNNES to send its students to and receive students from foreign universities to conduct internship and community service programs. In the coming years more and more overseas students will come to UNNES. Therefore, it is urgent to develop a bilingual website.

In short, the rearrangement and development of a new information system must be carried out immediately so that students, field lecturers and other relevant parties will find it easy to follow Community Service procedure. This in turn will also make the Centre of Community Service a better organization.

In fact, improvement in policy making, administration and system management has always been a priority for the Centre for Community Service in order to enhance quality and service excellence to our users namely students and stake holders. Being responsible for this task, it has also attempted to improve itself, administer and augment its service quality & communication so that community service program runs well.

Based on the above mentioned background, the problem statements can be formulated as follow: (1) how to develop a bilingual information system for Community Service Programs which is able to publish outputs and provide database of target and partnered villages; (2) how to make that system complete, reliable, effective and easy to access.

The objectives of this study are: (1) to develop a bilingual system (Indonesian and English) for Community Service Programs which is able to publish outputs and provide database of target and partnered villages; (2) to make a system which is complete, reliable, effective and easy to access.

1.1 Theoretical Review

Studies on development of information system have been done in Indonesia especially for institution's improvement, reorganization and administration purposes. Some prominent universities have also developed their own system and had it evaluated. For example: Universitas Diponegoro with its team from Computer System Department, Engineering Faculty conducted similar research in 2015. The research was entitled Pengembangan Sistem Administrasi Pengolahan Data KKN Universitas Diponegoro and its output was published in Jurnal Teknologi dan Sistem Komputer, Vol.3, No.2, April 2015. Another similar study was conducted by researchers from Electrical Engineering Department of Universitas Negeri Gorontalo in 2014. Its output was published in SETRUM Journal – Volume 3, No. 2, December 2014. The research entitled Prototipe Website untuk Sajian Informasi Profil Desa Binaan Universitas Negeri Gorontalo sebagai salah satu Implementasi Pengembangan Tridharma Perguruan Tinggi promoted the profile of that university's target villages.

Similar studies were also carried out overseas of which one was by Prasart Nuangchalerm, Pacharawit Chansirisira Mahasarakham University, Mahasarakham, Thailand in 2012. The research whose title is Community Service and University Roles: An Action Research Based on the Philosophy of Sufficiency Economy studied university's role in

developing community services through the spirit of self-sufficiency economy under the rule of His Excellency Bhumibol Adulyadej.

The Role of Information and Communication Technology in Community Outreach, Academic and Research Collaboration, and Education and Support Services (IT-CARES) was another study conducted. Its output was published in Perspect Health Information Management Journal. It examined ICT role in empowering the people, collaborating academics and education service.

The last research referred to in this study is the one carried out by Irena Leliugiene and Viktorija Barsauskiene Kaunas University of Technology, Institute of Educational Studies, Lithuania. Its result was presented in European Conference on Educational Research, University of Hamburg, held on September 17 – 20, 2003. It studied university's role in developing society and facing global challenges.

As an intra-curricular subject, community service is obligatory for all bachelor students (S1) enrolled at Universitas Negeri Semarang. It is actually a realization of University Triple Functions (Tri Dharma) consisting of education, research and community service. Education would be baseless without research and no teaching-learning process would be effective unless it was based on research. At last, it should help solve the problems in the society through community service.

As an integrated program, community service activities are different from students' activities in general. Not only preparing its participants to be an agent of change, this program is also UNNES' commitment to society. It is intended to help solve the development problems faced by the community. To realize prosperity we should not only pay attention to physical aspect but also environmental one like conservation. This is in accordance with the mission of UNNES as Conservation University.

In addition, students' competence is shaped not only through inside but also outside campus activities, i.e. in society. Students need an occasion where they can apply their knowledge. Comunity service is an effective and educative media since students are distributed in the society either urban, rural, or particular groups/organizations. Hence, they can absorp and understand people's life including their problems, potentials, possible solution and even their aspiration. Community service is useful to help develop students' life skills such as analytical thinking based on empiric and realistic data.

In parctice students also learn to prepare and carry out programs either individually or in group,

cooperate with others, manage self-control and train themselves to work.

1.2 Target Villages

Target villages may include communities, social groups and / or religious institutions whose scope of work is located in the hamlet or village selected or set out by LP2M UNNES as the location of the target village programs. Kampung Malon, Gunungpati Semarang is one of 16 regions which was selected as "Kampung Tematik" in 2016 and has been launched as "Kampung Alam Malon" (literally Malon – Natural Village) eversince. With adequate natural and human resource potentials, it can be developed as a relatively attractive tourist's destination. This site might later be an alternative site for tourism in Semarang (Dwi Dharma Buletin LP2M UNNES volume June 2017).

Besides Kampung Malon, there are still other targeted villages like Kandri with its Omah Alas (literallyJungle House) and Omah Budaya (literally House of Culture), Cepoko with its Kampung Buah Program (Village of Fruits Programme) and Wonolopo.

In addition to it, LP2M Unnes has also partnered with several companies to channel their Corporate Social Responsibility grants. Some companies that actively collaborate with UNNES for CSR programmes are Indonesia Power, Pertamina and Phapros.

1.3 Information System

Information system can be defined as (1) a man-made system that consists of integrated particular components whose objective is to present information; (2) a set of procedures which, if done correctly, will provide vital information to decision making and or to controlling an organization; (3) a particular system in an organization that combines transaction processing, supports operation, managerial and strategic and provides other parties with necessary reports (BinLadjamudin, Al-Bahra 2005).

System Development Life Cycle (SDLC) is a process of developing or changing softwares by using models and methodologies that people use to develop previous applications based on best practices or well-proven ways (A.S, Rosa dan Shalahuddin, M., 2014).

In general stages that must be taken in SDLC are : a) Initiation, b) System Concept Development, c) Planning, d) Need Analysis, e) Design, f) Development, g) Integration and Testing, h)

Implementation, h) Operations and Maintenance), and i) Disposition..

1.4 Database Design

Hoffer, et al. (2002: 4) stated that database is a set of organized data which is logically related. Being organized means that data in the structure is managed in such a way that it can be easily restored, manipulated and reused. To develop an information system using System Development Life Cycle (SDLC), we inevitably deal with database development so that database management issue is involved throughout system development process (Hoffer et al., 2002:41). Scripting programming languages and database are needed to develop an information system. The programming language needed are:

a) PHP or Preprocessor Hypertext Protocal is a script language that is installed and processed on the server. Its result is then sent to client's browser (HirinA.M dan Virgi 2011)

b) Javascript. Javascript is a set of script languages that work on a HTML document. This language is a programming language to provide additional capabilities to HTML by allowing execution of commands on the client side instead of on the server side (Adi, A.P dan Sanjay, R 2012).

c) Code Igniter. It is an open source application framework with view controller model to build dynamic websites. By using a PHP Code Igniter, it will be easier and faster for system developer to create web applications compared to creating and writing all the code itself from scratch (Wiswakrma, Komang 2010).

d) MySQL. It is software for SQL database management or multithread DMBS with approximately 6 millions users around the world. MySQL is freely available online under the licence GNU General Public Licence (Wahyono, Teguh 2009).

1.4 System Architecture

In principle an integrated information system consists of database to store profile and other additional data and the website files which are accessible to users. Database can be a module inserted into LP2M current website. All data of this new system will be stored on BPTIK server. Its system architecture can be illustrated in the diagram below.
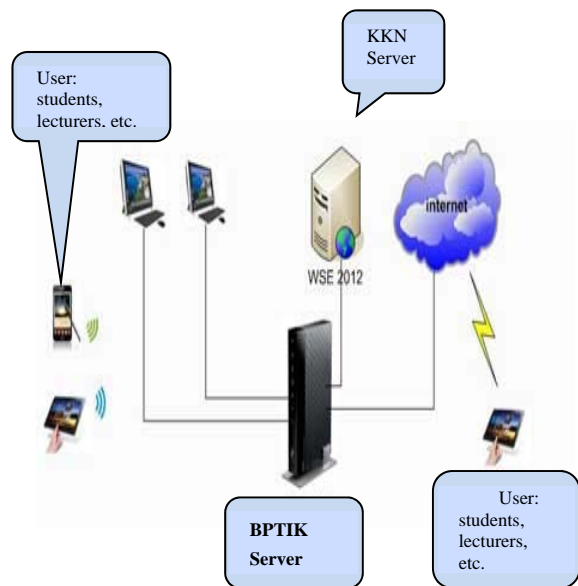

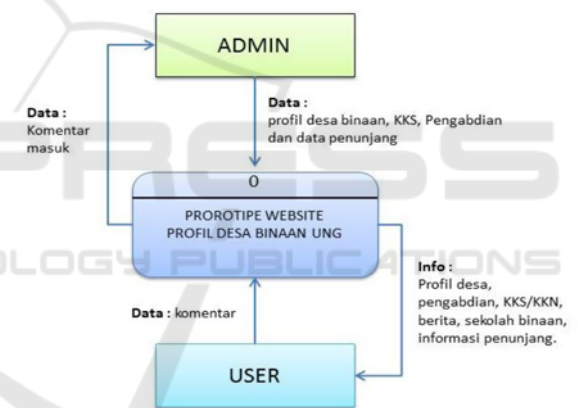Figure 1: Information System for Community Service & Target/Partner Village.

Figure 2: Flow Chart of Website For Community Service & Target Village.

2 RESEARCH METHODOLOGY

This research is set to be conducted in 2018/ 2019 Academic Year and is an applied research whose primary goals are to develop a certain product and to test that product's effectivity. The product to be developed is an integrated information system (website) for Community Service Programs and target/partner villages.

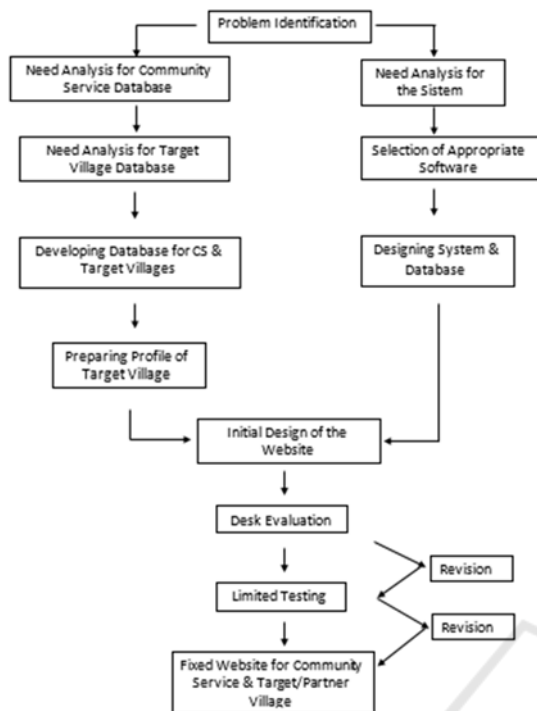The steps taken in this applied research can be illustrated in the diagram below.

Figure 3: Flowchart of the Research.

In developing the information system for Community Service Programs and Target/Partner Village, we follow standardized steps of development namely analysis, planning, product development, testing, revision and evaluation stages.

The first stage is identifying the need for the system. It involves students participating in community service programs, lecturers and other relevant parties in order to find out what kind of system is needed. This analysis need includes hardware and software identification necessary for developing the site.

When this stage is completely done, the next step to do is to create database for Community Service Programs and profile for target/partner villages. An initial design (prototype) of the information system is then developed. This preliminary design needs to pass desk evaluation by a team of developers from the Centre for Community Service Programs.

The next stage is limited testing involving LP2M staffs and a number of lecturers (users). It is intended to assess the system functionality, interface, accuracy and comfort from the users' side. Criticisms, inputs, and suggestions from the users are used to improve the system and make it fixed product.

This study is conducted in the Centre for Community Service Programs (Pusbang KKN), the Institute for Research and Community Service (LP2M) and several target/partner villages.

2.1 Indicator to Be Observed

It is expected that the result of this study will bring positive impacts both for the system itself and the users. From the system point of view, this study will expectedly improve community service program in the procedure as well as monitoring & evaluation so that it will be better, more informative and more accessible to UNNES' academics who need it.

From users' point of view, many people who use this system will get used to thinking and working according to the procedure set out. The indicator to be observed and assessed from this study is as follows:

Students and field lecturers (DPL) shall fully understand the procedure to carry out community service programs thanks to adequate and appropriate information available on the website. Other advantages can be described as follows:

a) Community service activities and its output can be published in a more informative and accessible way so that they can inspire others.

b) An integrated system will enable the Center for Community Service Programs to monitor students', field lecturers (DPL)'s and coordinator's performance.

c) Students who will conduct community service will be able to access information on the previous data so to avoid overlapping programs

The subjects of this research are students participating in community service, target/partner villages, staff of LP2M, staffs of the Center for Community Service Programs and field lecturers (DPL) in the year 2018/2019. The data were collected through observations, interviews and Forum Group Discussion. Observation and interview were conducted by observing and noting remarkable things during community service programs, during report submission through data entry and during activities held in target/partner villages. Forum Group Discussion was carried out to discover findings from community service activities. It involved students, LP2M staff, staff of the Center for Community Service Programs and DPL. Data collected were analyzed with triangulation technique.

3 RESULT OF THE STUDY

This study was commenced upon the contract signing at LP2M UNNES. Its initial phase of preparation began with coordinating meeting at the Centre for Community Service.

Figure 4: LP2M UNNES.

To help design the website, a professional team was hired. Its development was conducted through several steps starting from concept discussion until development of fixed product. Here are the details:

Table 1: Activities Timeline.

No.	Type of Activities	Timeline
1	Discussing general concept of the website and its menu	April 25, 2018
2	Discuss the detail interface	May 3, 2018
	Web theme	May 3, 2018
	Website Template	May 3, 2018
3	Revising initial website	May 19, 2018
	Discussing back end	May 19, 2018
	Constructing back end functionality	May 19, 2018
	Integrating back end with front end	May 19, 2018
4	Developing fixed back end	June 27, 2018
	Revising front end and back end	June 27, 2018
	Final and fixed front end	June 27, 2018
	Final and fixed back end	June 27, 2018
	Integrating back end to front end	June 27, 2018
5	Complete revision (1)	July 2, 2018
	Adding user management menu	July 2, 2018
	Integrating user management to back end	July 2, 2018
6	Complete revision (2)	July 9, 2018
7	Reporting the product UNNES web administrator	July 11, 2018
8	Initial Socialization I (to students who are about to conduct community service)	July 14, 2018
9	Initial Socialization II (to students who are about to conduct community service)	July 20, 2018

Here are some screenshots of the website before finalization stage.
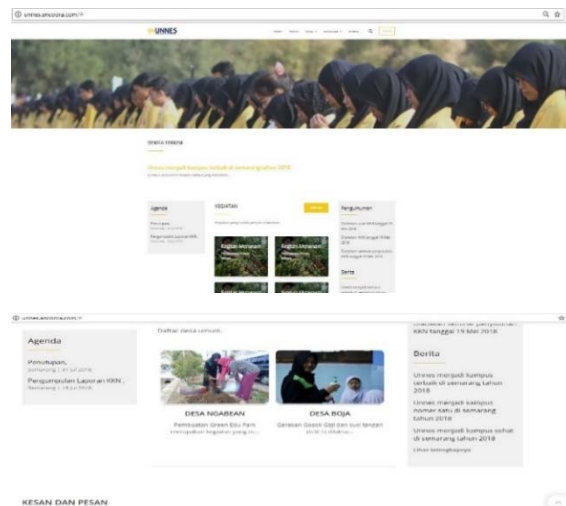

Figure 5: Screenshots of the Website before Finalization Stage.

Socialization – Stage I and II held in Borobudur Room LP2M building, UNNES

Figure 6: Socialization – Stage I.

Figure 7: Socialization – Stage II.

This website will be used to publish community service activities. To make maximum use of the system, there are still several things to do like:
a) System testing for limited users;
b) Further socialization;
c) Field data collection;
d) Completion of system features for the users;

e) Forum Group Discussion;
f) Evaluation

Evaluation is intended to assess the research accomplishment. It is done by giving questionnaries to the students who have conducted community services and lecturers regarding villages' potentials. Inputs and suggestions are highly welcome and expected for the betterment of the system. In addition, further programs will be formulated in the upcoming community service projects.

4   CONCLUSIONS

It can be concluded that the new information system proved useful not only for the administrator but also for the users. It has a more interesting interface, more complete content and most of all more accessible to those who need information about community service program.

From the result obtained, it is suggested that we conduct an in-depth evaluation and descriptive analysis so that a more accountable and measurable result can be gained.

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