

# **Management Information System Design Web Based Tracer Study On Jenderal Achmad Yani University**

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**ABSTRACT:** This study aims to determine the ideal tracer study design at Jenderal Achmad Yani University (Unjani). This research method is qualitative through structured interviews consisting of interviews, documentation and observation to several campuses in Bandung as a design reference. The objects of this research are universities that have carried out tracer studies and Jenderal Achmad Yani University for student and graduates affairs.

**KEY WORDS:** Management Information System Design, Tracer Study, Web Based

## **I. INTRODUCTION**

Outcome higher education is to educate the nation's life. Where the output of higher education is to create competitive graduates. However, on the way to achieving this vision, universities are not supported by tools that can measure success in creating good graduates. Therefore, it is necessary to have a tracer study information system so that universities can monitor and evaluate graduates with valid, effective, and efficient data.

In addition to educational and teaching activities that need to be adapted to technological developments, a university also requires operational activities that are supported by an integrated management information system. One of them is the operational activity of monitoring and evaluating graduates. Where these activities can be presented by the tracer study management information system. This certainly can be done by Jenderal Achmad Yani University (Unjani) by developing an information system on the existing website. With a website-based tracer study, data can be presented in real time online. Carrying out the process of monitoring and evaluating graduates owned by Unjani is certainly a big job, where Unjani graduates have been around since the 1990s. Not optimal tracer study data at the university level can affect the ineffectiveness of various problems, such as the need for data for accreditation, job absorption for graduates in industry, education and teaching evaluation programs, and monitoring of the career development of Unjanigraduates. With the one-stop tracer study management information system, which is centered at the university level, it is hoped that it can provide benefits for graduates and industry as job opportunities.

The description above suggests that in order to assist the student affairs sector in dealing with internal and external dynamics effectively, the tracer study information system is a part that plays a role in the development of higher education. Tracer study information system can help Unjani if there is an effort to develop the tracer study system.

This study aims to determine the design of the tracer study management information system at Jenderal Achmad Yani University. The results of this design are expected to facilitate the search for graduates and users of General Achmad Yani University graduates and to increase the effectiveness and efficiency of student work in the use of graduate and industrial data needs. The effective and efficient value that will be obtained is that it is easy for the leadership and related staff to obtain graduates tracking data and graduate users. Registered graduates will get various information about campus activities and industry and can provide and receive information related to campus activities and graduate potential.

## **II. LITERATURE REVIEW**

### **1 Management Information System**

Raymond McLeod and George Schell (2012) stated that the management information system (SIM) is a computer-based system that contains information available to users with similar needs. This information system can be run by using hardware, software, users, standard operating procedures, management models and decisions as well as databased. There is a difference between an information system and a management information system (MIS). The fundamental difference is that SIM can support operations, management and decision-making functions (Juliyanti, 2015).

## 2. The Role of SIM in Problem Solving

According to Herbert A. Simon, there are 4 stages that must be passed in the decision-making process, namely: Search (intelligence). This stage is the stage of defining the problem and identifying the information needed relating to the problems faced and the decisions to be taken. Design (design). This stage is the stage of analysis in terms of finding or formulating problem-solving alternatives. Selection (choice). This stage is the selection of alternative solutions that are estimated to be the most suitable. Implementation (implementation). This stage is the stage of implementing the decisions that have been taken.

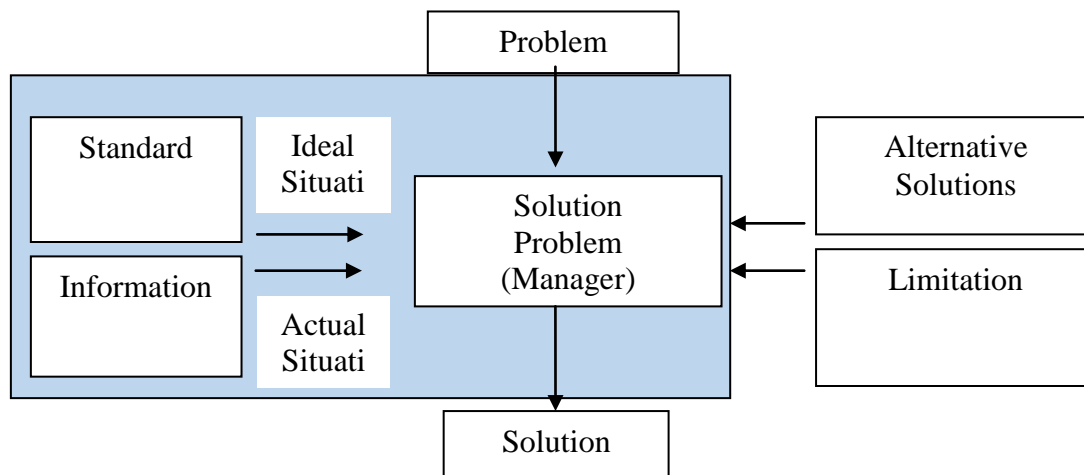
## 3. Creating Database

Determining the data that needs to be collected and stored is an important step in achieving a computer-based information system. Database management systems allow companies to create a database, maintain its contents, and distribute the data to an audience of users. Data is generally obtained through reports and forms. The tools needed to design a database conceptually, both to describe the connection between data and optimization of the database design, to describe the author's data model using the Entity Relationship Diagram (ERD), while to get a good database normalization techniques are needed. ERD is a term used for describes the logic of data consisting of the entities of an object so that it can be distinguished from others,

## 4. Decision Support System

Management makes decisions to solve problems. The problem-solving approach consists of three stages, namely: preparation efforts, defining efforts and solving efforts. The elements of the problem-solving process are as follows:

Figure 2.1 Elements of Problem Solving Process



Source: Raymond McLeod and George Schell (2012: 328)

In Figure 2.1, it can be seen that the difference between the ideal state and the actual is called the solution criterion. It is the manager's responsibility to identify alternative solutions. After various alternatives are identified, information systems can be used to evaluate them. This evaluation must consider the existing internal and external limitations. Internal limitations in the form of limited resources exist within the company. Decision support systems are still used to describe systems designed to help managers solve certain problems.

## III. RESEARCH METHODS

### 1. Research Design

This research uses qualitative methods through interviews, documentation methods, observation methods and uses secondary data obtained from several sources and internet media.

## **2. Data Collection Methods**

To make it easier for writers and readers to understand this research, a lot of information is needed using various methods of collecting data. This research is directly aimed at the object of research. In this case, the data that the authors collect consists of primary and secondary data.

## **3. Primary Data**

Collecting data directly from the object under study. The methods used to collect this data are as follows.

### **A. Interview Method (Interview)**

The author conducted interviews and direct dialogue with leaders and employees in the student affairs section of the Jenderal Achmad Yani University and other universities that have carried out a tracer study. Interviews were conducted to find the information needed from the graduates tracer management information system. The author collected data and documents on the implementation of the graduates tracer activities. The form of documents collected can be in the form of tracer study documents or regulations related to the Unjani tracer study.

### **B. Observation Method**

In this method the authors make direct observations of the object to be studied which aims to strengthen data, know and get information directly. How is the system running in the tracer study at Unjani. In addition, this method is also used when collecting information on the tracer study system at other universities.

### **C. Data analysis technique**

The method used in this research is descriptive research with more descriptive characteristics from the results of interviews and observations. The data obtained were then analyzed qualitatively and described in descriptive form. According to Moleong quoted by Prastowo (2011: 238) data analysis is the process of organizing and compiling data into patterns, categories and basic description units so that themes can be found and work hypotheses can be formulated as suggested by the data. In the principle of qualitative data analysis is carried out in a manner together with the data collection process. Data analysis techniques proposed by Basrowi and Suwandi (2008: 209);

### **D. Data Validity Testing Techniques**

Sugiyono (2007: 147) explains that there are four forms of data validity testing, namely data credibility test (internal validity), data dependability test (reliability), transferability test (external validity / generalization), confirmability test (objectivity). But of the four forms, the credibility test is the most important. To test the credibility of the data, seven techniques can be done, namely: triangulation, extension of observations, increasing persistence, discussion with peers, member checks, case analysis, using reference materials.

Testing the validity of the data in this study using the credibility test with triangulation techniques. Moleong (2006: 330) explains that triangulation is a data validity checking technique that utilizes something other than the data for checking purposes or as a comparison to the data. This technique is divided into four types, namely triangulation of sources, techniques, time, investigators, and theory.

In this study, testing the validity of the data used is the triangulation technique with the type of triangulation technique, where this technique is used to test the credibility of the data by checking the data to the same source with different techniques. There are two strategies used in this technique. First, checking the degree of confidence in the findings of research on several data collection techniques. Second, checking the degree of confidence of several data sources using the same technique (Prastowo, 2011: 265).

## **IV. RESULTS AND DISCUSSION**

### **1. Analysis of Interview objects**

The following will explain the responses from various research objects, namely the student affairs sector of Jenderal Achmad Yani University, Maranatha Christian University (UNPAR), Bandung Islamic University (UNISBA), and the Indonesian Education University (UPI). The reasons for choosing the higher education institution were private and public universities in Bandung.

### **2. Interview Object Response**

UNJANI has conducted a tracer study but it is not website-based. The question items in the tracer study have been adjusted to the questions according to Pangkalan Data Pendidikan Tinggi (PDDikti) standards. Additional questions are tailored to the needs of the Faculty. The divisions involved in the tracer study at Unjani are student affairs at the faculty and university levels, but there is no special division that manages tracer studies. Tracer study reports in the field of student affairs at the faculty are submitted to the student affairs at the university level. The important part in reporting the tracer study is the number of graduates and the number of registered graduate users.

In addition, information on the number of graduates who have worked less than six months after graduation. Information that becomes important is also related to the quality of graduates consisting of skills, knowledge, and the attitude of graduates. The tracer study process is carried out at the faculty level by contacting graduates via letters and social media, where the tracer study question items have been prepared in advance. Tracer studies are carried out an average of one year after graduation. External parties related to the tracer study at Unjani are PDDikti, industry or graduates user companies.

The features of this website-based tracer study management information system will be tailored to the needs of graduates. The interviews conducted with the graduates were related to the features needed in the tracer study management information system. From the results of interviews with informants, information regarding the features that are expected in the website-based tracer study management information system was obtained.

The features are as follows:

1. Information about business training for graduates, such as making legality legal entities.
2. Features for sharing information such as information from graduates to fellow graduates or students. This is useful for providing information about job vacancies and vacancies for internships.
3. Features that can announce information about business opportunities.
4. Certification information needed for graduates so that they will have more competence to enter the workforce.
5. Graduates are very wide open to being the object of research, because it really helps the development of the company. So it takes a feature to receive information about the research from Unjani.
6. In the world of work, there is a Corporate Social Responsibility (CSR) program. This can be done together with Unjani. So a feature is needed to receive information about community service programs from Unjani.
7. Graduates, both who are already working or who will continue their studies, need information about scholarships, either given by Unjani or by parties who have collaborated with Unjani.
8. Graduates need information about events held by Unjani, so that graduates can help in terms of sponsorship or collaboration in the organizer.
9. Graduates need information about the names of lecturers at Unjani, so that graduates who need resource persons for their workplaces can contact the lecturers according to their experts through the tracer study website.

### **3. Graduates User Objects Interview Responses**

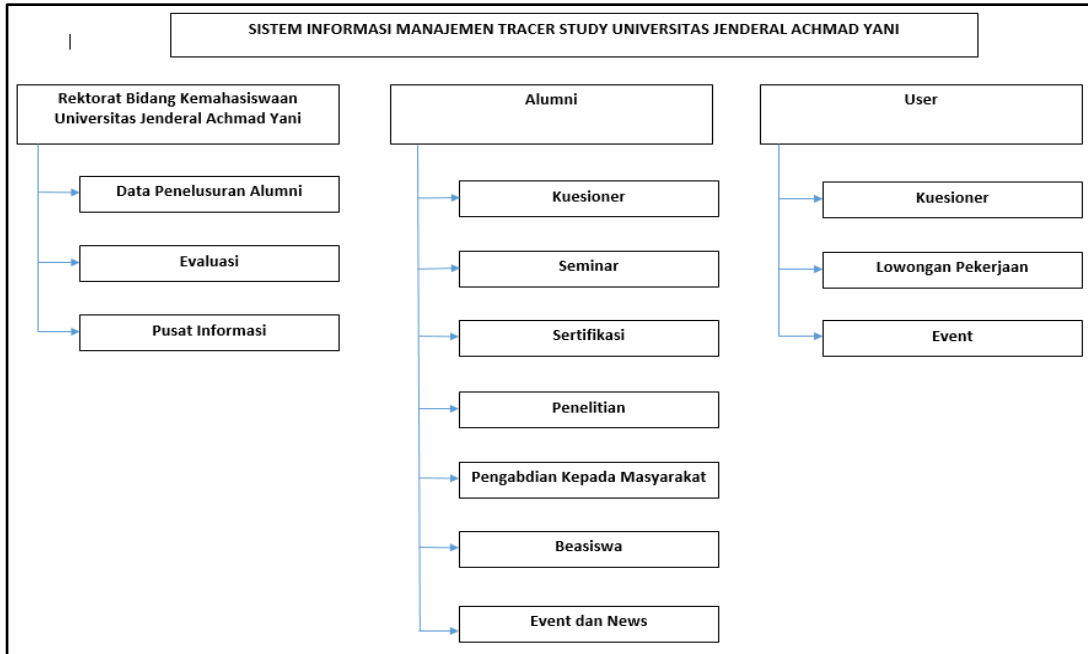
This study also conducted interviews with graduate users. The graduates user who was used as an informant was Pradipta as the Event Coordinator of PT. Chitose. The writer considers choosing the company to be interviewed because there are quite a lot of Unjani graduates who work at the company who are spread across various divisions and positions. In addition, the company also recruits Unjani graduates from various departments.

The results of the interview obtained information that PT. Chitose has not collaborated with any university in this tracer study. Expected features on the tracer study website. If the tracer study is website-based and can interface between the campus and industry, the operators from the industry can be carried out by Human Resource and Development (HRD) staff. It is hoped that with this tracer study collaboration, the industry will be able to obtain graduate data reports which will become an additional source for the employee recruitment process. The report can be sent through the system and there is a notification or notification to the operator. The main features that are expected to be found on the tracer study website are locker information features and event notifications. These features are used to inform job vacancies and events related to Unjani. Job vacancies information will be useful for graduate users during the recruitment process. In addition, the event feature will be useful for graduate users to participate in events that Unjani holds and there is potential for cooperation outside the recruitment process, for example work on sponsorship.

### **4. Tracer Study Management Information System Features Unjani**

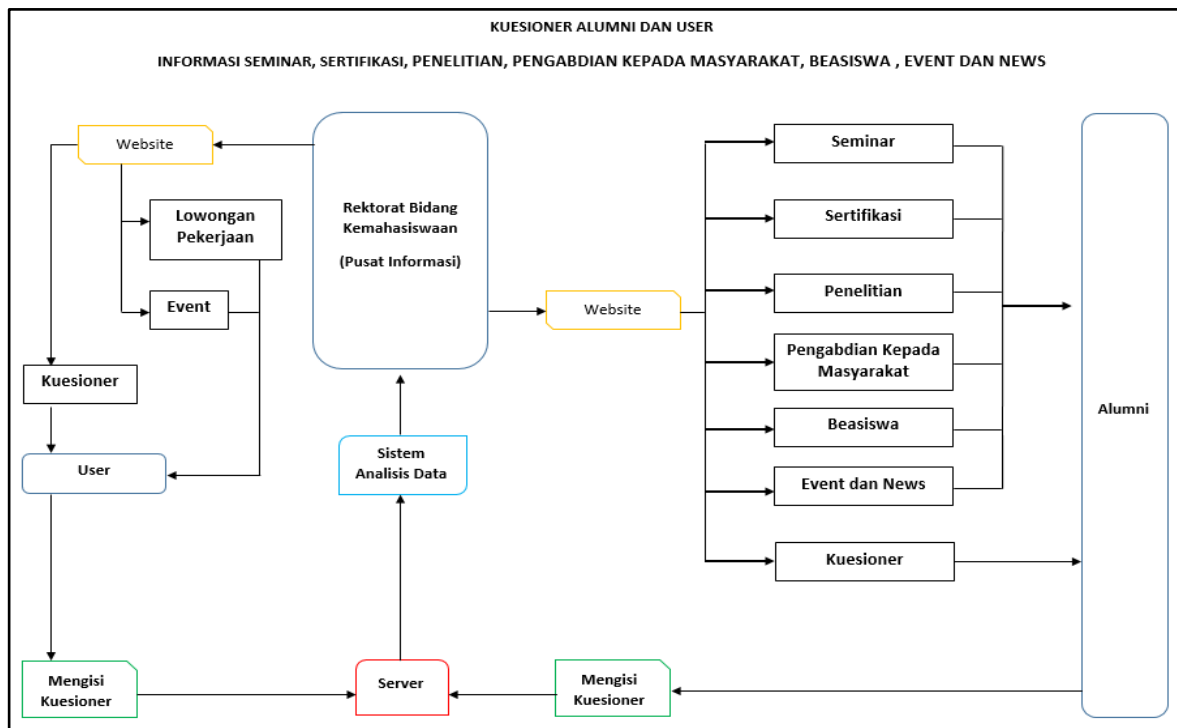
The results of interviews with Unjani student affairs include the existence of a tracer study process It is hoped that this website-based tracer study management information system can make an interface management information system. So that the analysis map is added with several menus for external parties. The menus aimed at graduates include: seminar information, certification, research, community service, scholarships, events and news. The menu aimed at the industry includes: information on job vacancies and events. Thus the website-based tracer study interface management information system analysis map can be described as below:

Figure 4.1 Features of the SIM Tracer Study Unjani



The effective and efficient value that will be obtained is that it is easy for leaders and staff to obtain graduates tracking data, registered graduates will get various information about campus activities and can provide and receive information related to campus activities and graduate potential. The functions of these features can be seen in the following table:

Figure 4.2 Map Analysis Menu of the SIM Tracer Study Unjani



The above map analysis is a website-based information system flow. Where contains two types of information in it. This type of information is one-way and two-way information. The parties involved are senders and receivers. Senders in the SIM tracer study Unjani is in the field of student affairs and receivers are graduates and graduate users. The one-way information type can only provide information from the sender to the receiver. While the two-way type of information is information that requires involvement to mutually provide information between senders and receivers. There are several features of one-way information for graduates, namely features for informing seminars, certificates, research, community service, scholarships, events and news. Meanwhile, one-way information for graduate users is information on job vacancies and events. The two-way type of information for graduates and graduate users is the tracer study questionnaire. Where the graduates and graduate users fill out the questionnaire, the data information will then be received by the rector. The data will be received through the server which will then be analyzed automatically so as to produce data ratios that can be obtained by interested parties.

## **V. CONCLUSION**

Based on the results and discussions that have been conducted, Jenderal Achmad Yani University has conducted a tracer study. The tracer study conducted has not been integrated at the university level. Tracer studies are carried out in accordance with policies in each faculty. The results of interviews with other tertiary institutions that have carried out tracer studies show some differences. There are differences between the strategies and policies, but have the same work objectives. The target of the same work is data collection, processing and analysis of graduates searches. Based on the results of interviews with four tertiary institutions, the average tracer study has used online methods in various ways, such as using google forms, file attachments to e-mails, and websites. Website-based tracer study management information system, managed specifically by the student affairs sector at the university level. Tracer studies are conducted to track graduates and graduate users. The tracer study process is carried out by staff and assisted by active students as volunteers to contact graduates, this is in order to obtain data as an input process. The ratios in the tracer study data are processed automatically using the system. These ratios constitute the output of a tracer study that can be accessed by university leaders as input in policy making. All colleges that were observed used wording items according to the standards of the Higher Education. The divisions involved in this tracer study are student affairs and the Career Development Center (CDC). The results of the tracer study are an important part of material for evaluating educational and teaching programs.

## **ACKNOWLEDGEMENTS**

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