

I. CHAPTER I PRELIMINARY

I.1 Background

Seleksi Masuk Bersama (SMB) Telkom has been going on since 2006 until 2014 give good results against the new admissions process in all institutions under Telkom University which consist of former institution from exTelkom Institute Of Technology, exTelkom Institute of Management and Business, exTelkom Polytechnic, exTelkom School of Art. In the Telkom University Division that responsible this *selection* is Strategic Alliance and Technical Implementation on Admission Directorate Division. Implementation of SMB Telkom applies full online system to registration in all of path selection. Path selection consists grouped as follows:

1. *Jalur Penulusuran Potensi Akademik (JPPA) : JPPA Nasional (Reguler and Relocation), JPPA Unggulan and JPPA OSN*
2. *Ujian Saringan Masuk (USM)*
3. *Ujian Tulis Gelombang (UTG)*
4. Daily Computer Based Test

Objectives to be achieved in SMB Telkom are :

1. Give the best service for people in order easier in registration and selection Student Candidate in Telkom University.
2. Get qualified student suitable with requirement on each major, hence the student have a big chance to get an achievement and completed study with a good predicate.
3. To get student in sufficient quantities for quota on each major.
4. Get high ratio between student candidate and quota on each major.
5. Provision of comprehensive data to accreditation on each major.

For institution admission is a way to improve the quality of an educational institution. From an admission will get intelligent beings that can later be nurtured and given lessons to improve skills and create quality men in the future righteously as educational institution. For that, necessary to hold an admission to filter many thousand prospective applicants who want to get a bench college to get the best students who are entitled to education in an institution. Certainly in this way institution can ensure that students are students who have the potential to become qualified man in his/her field. One of the institutions that run the selection is Telkom University that focuses

development information, communication, and technology field. Telkom University is an amalgamation of several institutions like Telkom Institute Of Technology, Telkom Institute of Management and Business, Telkom Polytechnic, Telkom School of Art and Design that amalgamation in 2012. To filter thousand student candidates that want sit in one of institution from Telkom University.

A good decision is a decision that has a clear base. The base usually takes from the real information that is converted by data. Generally, data represent a structured codification of single primary entities, as well as of transactions involving two or more primary entities (Vercelis, 2009). Besides represent the fact, data also represent the object or event (Munir & Setiawan, 2006). Thus it can be concluded that information is the result of data processing which is more easily understood and meaningful that describes an event and facts. Information also can converted become a knowledge that can represent the conclusion and value of the information to solve the problem and take decision. Therefore, Data will be as a core of the decision if it has a good treatment or process, which is process that data into information, and information into knowledge to make a wisdom or decision. To take a decision, information is the important things that to make objective decision in as a base to set the company's strategic movement and facing the changing also forecast future corporate business.

All this time all of worker in Admission Directorate find the potential market rely on his/her feelings that they get from his/her experience, that means they have not yet make the data as the basis of a decision. Whereas if we talk about data which then be threatened then find the potential market will be easier and completely valid than using feelings. Besides talk about data, actually their experience could made learning for a regeneration through some process of knowledge management to give lessons on how to solve the problem in a particular area, how the trend, how to achieve a goal that cannot be solved by the data processing. So, convert data into information and from information into knowledge is the one important to give the knowledge from SMB Telkom data to make the same view of the data for all worker because all worker have different background. Therefore, we need feature or tools which have 5C4C Knowledge Conversion to convert data become information then information become knowledge (Liewbowitz, 1999).

Therefore need to be made an Information system that can provide and solve problem in Admission directorate on Telkom University which can be have potential decrease growth number of registrants. An information system can manage history data and be threatened, save the tacit knowledge from manager which later can help all of worker in making decision to determine the how fixed the problem if target not met, zone or province which has a potential student candidates which become student in Telkom University and etc.

The solution is an information system which is Knowledge Management System (KMS) with Geographic Information System (GIS). The knowledge management system use knowledge conversion method that convert data into information and information into knowledge which can show the history data from captured data based on layer which have been made. GIS in this case, only use to make visualize data that adjust to make condensed and comparing process in Knowledge Conversion. Marketers can better understand their customers and prospects, where these customers or prospects are located, and target them with tailored messages designed just for the target segments (Amos, 2009). This Information system can show data based on the categorized data like Register or buy in on each path of selection on each province, then this data from history data can produce a valid decision.

Knowledge conversion in this information system can convert all of attribute data into an information like calculate school from, province, trend of each path of selection, venue of exam in each province, majors priority that has been choose, and others based on the pin sold to take a decision and evaluating performance. To help visualize of data on spatial, GIS is needed to see easily of information in each province. After that, this Information System can save tacit knowledge from manager and result of discussion to define how to treat or analysis on each province as evaluating performance from knowledge that has been converted if target not met. This step is to define how knowledge can read of information if target data is not meet or the others problem.

At the first all of data are only one form of reports and documentation that is not used at all to support the productivity of employees in decision-making and there is no an evaluating performance. Whereas a lot of benefit if use a history data to determine of decision and evaluating

a performance. During the time, all of worker always just feeling to make a decision and it is not good if it is not guided by the data, because the perception everyone could have been different, or someone could be wrong if the data does not take sides in it. It is necessary for execution of a system that can help improve their productivity and make a decision that will be based on the data with easy and convenient to use and all workers in this division could use it. Later the system will be created based on variable attribute data to be displayed, making it easy for workers to seek what data they need to help them decide something. If this information system does not exist or is not used then the workers will not get the productivity effective and efficient decisions in their work. Thus, a decision that they do just based on the views of their thoughts and feelings.

I.2 Formulation of the Problem

The problem can be identified from researcher on this research are:

1. How to make a data that can be used as a basis to take decision in marketing activity (core process of Admission Directorate)?
2. How to convert data into information and information into knowledge dynamically in order all of data can be used as a support to take a decision?

I.3 Research Purposes

The purpose of this research is:

1. Make a data converted into information then can be taken as knowledge from capture and process the history data and compare with real time data use 5C4C Method.
2. Design the Information System that can function of KMS that can convert data into information and visualize based on the some variable, design the Geographic Information System (GIS) that can visualize comparing between report of pin sold and target based on spatial data layers that have indication, and design the expert system of knowledge management that can save tacit knowledge of managers and result of discussion based on evaluating performance and information based on data that has been converted. The information system made to help worker to make a good decision based on data. The system builds by Waterfall Model Concept.

I.4 Benefits of Research

Benefits from research conducted are:

1. Reduce the use of feelings when making decisions. Giving priority to a data to take a decision.
2. Give learning medium with save tacit knowledge from each worker and then can be used in regeneration if employee be transferred or quit.
3. Provide information and data to the entire admission directorate team if needed quickly to all who served in each province.
4. Ease in viewing the data because data has been categorized.
5. Facilitate the processing of data to make a decision so as to facilitate the admission directorate team in the search for potential markets each province.

I.5 Boundary Problems

There are boundary of problem in this study :

1. Data used from history data only from 2012 until 2014 because reseacher feel this data has been enough to make a valid decision.
2. This study not notice other influence like condition of zone, people, and other. Only data showed by GIS and the KMS.
3. In this study not too much to discuss about Knowledge Conversion, because knowledge conversion only feature in system.
4. Data used is dummies to evaluate and test the system.

I.6 Writing Systematic

This study described systematic writing as follows.

CHAPTER I PRELIMINARY

This chapter contains a description of the background research, the formulation of the problem, research objectives, limitation of the study, the benefits of research, and writing systematic.

CHAPTER II LITERATURE REVIEW

This chapter will explain a variety of basic theory that support and underlying this final project.

CHAPTER III RESEACRH METHODOLOGY

This chapter will explain about the process of the development of this final project that related to writing of final project until system development that become purposes of this research. This chapter also explains how that that system built step by step (waterfall).

CHAPTER IV MODELING

This chapter explains about system modeling is done based on the problem, the effects, the identification of problems of each entity in the system (influence diagram), and define the data that will be variable to be processed.

CHAPTER V SYSTEM ANALYSIS AND DESIGN

This chapter will explains about problem solving technique that adjusts with the purposes of this research. Explain step to design and analysis of the system includes diagrams that support making the 5C4C knowledge management system with geographic information system and design of interface that are to be implemented.

CHAPTER VI SYSTEM DEVELOPMENT AND RESULT VERIFICATION

This chapter explains about system making up, use, test, and evaluation include of the system development, scenario for the test each entities for user acceptance test, and evaluation.

CHAPTER VII CONCLUSION AND SUGGESTION

This chapter will discuss the conclusions obtained from the research that has been done. Suggestions given to related parties and suggestions given for further research.