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Research paper



The Development Method of Making Decision in Choosing Academic Informartion System on the Merger University (Case Study: Telkom University)

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Abstract

University merger could be defined as the combination between two or more than two Universities that gathered into one. One step conducted during merger was choosing the decision to choose one of many information system alternatives which was originated from the Merger University. Incorrect decision could have disturbance effect on that academic activities of merger Universities. It was because the initial purpose of using the academic information itself was to add the benefit for academic process. The purpose of this research was to develop a method of making decision in choosing academic information system on the Merger University. The development of method was conducted by adapting the characteristics and problems in the merger Universities with the decision making theories. The result of this research were (1) There were two criteria in the decision choosing of academic information system on the merger Universities which were functionality needs and user acceptance, (2) Process of rank giving or priority conducted by using Analytical Hierarchy Process (AHP) method.(3) The result of method development has been tested and implemented on the research object.

Keywords: *Merger University, Making Decision, Academic Information System, and AHP*

1. Introduction

Regarding to the university in Indonesia has reached more than 4000 universities (Dikti, 2013) and considering the dreams of High Education in Indonesia, then the merger strategy has become the solution of one university to be survive, competitive and keep growing until created to be World Class University (WCU). It is caused by the merger is relatively faster than the internal growing or creating new university from the beginning (Schoenberg, 2003). Recently almost all universities in Indonesia have been implemented academic information system to support the academic process. Therefore, it is hard to be neglected that when the university has been merged then the academic information system is one component that need to be concern with, the decision making to choose which academic information system will be used by the merger universities (Hartono, 2003). The incorrect choosing of academic information system on the merger universities will have impact on the inefficiency resources and decreasing personal productivity which will not creating the result wanted by the merger universities (Ardiagarini, 2011). Therefore, it is needed to develop a decision making method in choosing academic information system on the merger universities.

2. Literature Review

2.1. Merger Universities

Merger could be defined as the combination between one or more than companies that gathered to be one. Thus the merger university could be defined as one or more than universities that gathered to be one. Merger also considered as relatively the fastest and efficient to wide the new market, creating new technology and to be innovated (Schuler & Jackson, 2001). The steps which conducted by the merger companies are Initial investigation, Comprehension investigation in the company scoring, Financial Evaluation, Negotiation Step, Merger Deal, and Integration (Hartono, 2003). From those six merger steps, one of the hardest steps conducted is integration step. In this step, the company should decide which resource should be kept (Moin, 2007).

2.2. Decision Making

The decision is the result of solving the problems faced by the firm (Basyid, 2006). But others argue that the decision is a choice of a wide range of alternatives and the criteria taken based on rational grounds (Vercellis, 2009).

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2.3. User Acceptance

User acceptance can be defined as the desire of a user group in the use of Information Technology (IT) which designed to assist their work. Lack of user acceptance will greatly affect the successful implementation of Information Technology. Therefore, the user acceptance should be viewed as internal factors that will determine the success or failure of the use of Information Technology (Nasir, 2013).

2.4. Method of Analytical Hierarchy Process (AHP)

AHP is one method to help draw up a priority of the various options by using multi-criteria. Because of its multi-criteria, AHP is widely used in the preparation of priority (Bourgeois, 2005). Based on this method, making decisions on complex issues will be simplified by breaking the problem into its parts, and arranged according to the level (hierarchy), then assessed or given a numerical level scale or the level of importance of each criteria, so that the obtained results in the form of criteria that the highest priority and has a greater influence on the conditions (Saaty, 1990).

3. Analysis and Development

3.1. Analysis of Decision Process Complexity in Merger University

Based on the impact of the merger, the newly formed universities of merger proceeds should be able to overcome the problem of the differences that arise between the merged universities. This means that there should be an adjustment between the academic system functionality from each university merged with the system functionality requirements at universities merged as shown in Table 1.

Table 1: Functionality of Academic Information System

No	Functionality
1	Data Processing of University Student
2	Data Processing of Lecturer
3	Data Processing of Attendance
4	Data Processing of Academic
5	Status Processing of Academic
6	Report Processing of Academic

The decision making process in the selection of academic information system at the merger university is different from the decision making in university which is not formed from the merger process, the decision-making process in merged university have more complexity than the university which formed not from merger. Complexity means is the different way working as the user through the academic information systems at the university previously, and this will lead to its own ego and can even lead to the rejection of the selected information systems. Therefore, in addition to the criteria of the system functionality needs through the academic process, the suitability of each user's acceptance of the academic information system that is decided also be a criteria in the decision making process of choosing an academic information system at the university seemingly merged as in Figure 1. User here means lecturer, college student and academic support personnel from each university were merged.

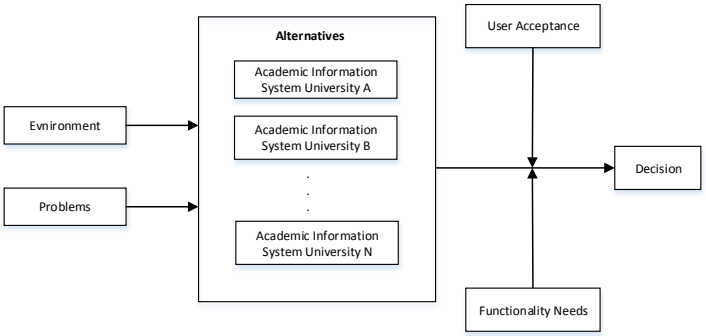


Fig 1: User Acceptance Towards the Decision Criteria

3.2. Analysis of User Acceptance Factors

The extent to which users can receive and understand academic information systems in order to determine acceptance of lecturer, student and academic support personnel of each of the merged university is an important thing to know before making the decision that will be made by the university merger . Based on theories about the acceptance of Information Technology, user acceptance factors in accordance with the characteristics of users of academic information system is as shown in Table 2.

Table 2: User Acceptance Factors Through the Academic Information System

No	Factors	Functionality
1	Perceived Usefulness	Support in helping job / assignment of lecturer, college student and academic support personnel (TPA).
2	Perceived Ease of Use	Convenience In using academic information system
3	Compatibility	Suitability with skills or previous experience.
4	Facilitating Conditions	The availability of support facilities as will access academic information system

3.3. Analysis of Characteristics of Decision-Making Process Results In Merger University

Based on the characteristics of the decision-making process of academic information system at the university merged, then the method of decision-making in accordance with these characteristics is Analytical Hierarchy Process (AHP). This is because the method of AHP have principles in accordance with the characteristics of the decision-making process within the university itself merged.

3.4. Development Decision Making Methods in Decision Selection in Merger University.

Proposed method of decision making in the selection of academic information system at the university merged can be seen in Figure 2.

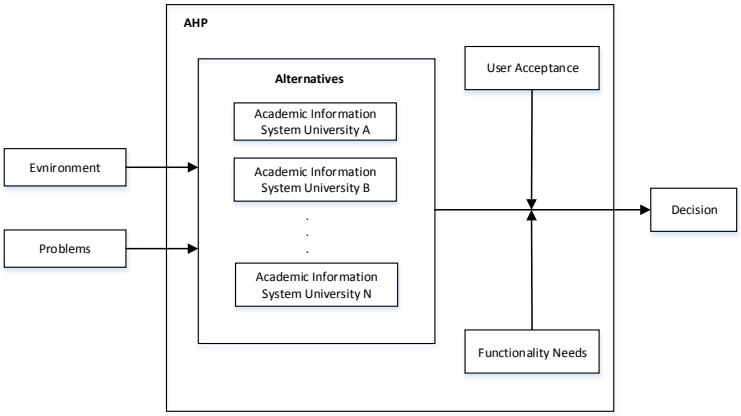


Fig 2: Proposed Decision-Making Methods

4. Evaluation of Research Result

4.1. Profile of Telkom University

Telkom University is an object research selected in this evaluation stage. This Private University is recently formed in August 2013 and as the result of a merger of four universities, which are IT Telkom, IM Telkom, Telkom Polytechnic and STISI Telkom.

4.2. Evaluation Method

Developed evaluation method refers to the model with observational field study based on a questionnaire. Mapping the questions on the questionnaire made in the format stated pairwise comparisons using the grading scale by Saaty. There were two questionnaires in this study, the first questionnaire about the suitability of the functionality of an alternative choice to the needs of academic information system functionality of merged university. The respondent of the first questionnaire was Director of IT as the holder of the decision. Whereas the second questionnaire is about user acceptance of each alternative existing academic information system. Respondents to the questionnaire were lecturers, students and academic support personnel (TPA) of representatives of each university were merged. For lecturer respondents were asked to do two things, such as simulated input value and input student attendance. For the student respondents were asked to do two things, such as simulated look and see the value of attendance. And for the support of academic staff respondents (TPA) asked to student plan and print transcript.

4.3. Data Collecting Result

The population in this research are all related stakeholder decision-making process of academic information system selection Telkom University, is the director of IT as decision makers, lecturers, students and academic support staff. Samples for user acceptance testing in this study were 41 people that is representative of the faculty, lecturers, students and academic staff respectively.

4.4. The Result of Data Processing

1. Results explanation of each criteria in a hierarchical structure can be seen in Figure 3.

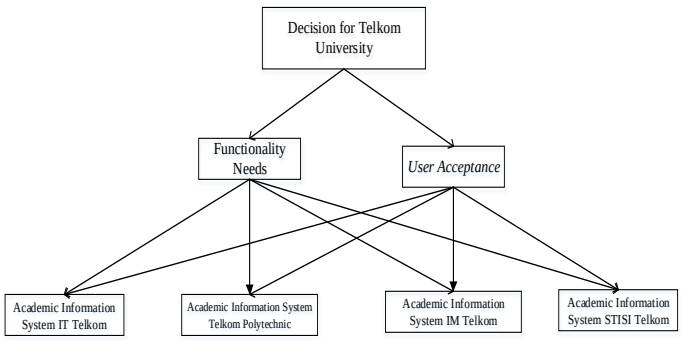


Fig 3: Hierarchical Structure Decision Making in Telkom University

2. Determination of alternative Academic Information System ranking criteria in the functionality requirements can be seen in Table 3.

Table 3: Determination of Ranking Alternatives towards the Criteria Functionality Requirements

	Data Processing of University Student	Data Processing of Lecturer	Data Processing of Attendance	Data Processing of Academic	Status Processing	Report Processing of Academic	Final Score	Ranking
IT Telkom	1,75%	1,75%	7,17%	17,8%	5,45%	11,81%	45,73%	1
Telkom Polytechnic	1,46%	1,46%	7,17%	10,92%	2,22%	7,03%	30,27%	2
IM Telkom	0,73%	0,73%	1,52%	3,48%	1,08%	2,83%	10,38%	4
STISI	1,24%	1,24%	3,05%	4,96%	1,15%	1,98%	13,63%	3

3. Determination of alternative Academic Information System ranking in the criteria of user acceptance can be seen in Table 4.

Table 4: Ranking of Alternatives Determination towards Criteria of User Acceptance

	Perceived Usefulness	Perceived Ease of Use	Compatibility	Facilitating Conditions	Final Score	Ranking
IT Telkom	19,90%	13,87%	1,57%	6,42%	41,76%	1
Telkom Polytechnic	13,21%	9,03%	3,03%	3,89%	29,16%	2
IM Telkom	4,25%	4,40%	2,06%	2,76%	13,47%	4
STISI	4,49%	5,86%	2,06%	3,21%	15,61%	3

4. Decision Making

For the final step of the decision-making process is decision making by seeing the final ranking of each alternative on the overall information systems academic criteria. Criteria of academic information system functionality means best suited to the needs of the academic process at the University of Telkom. While the user acceptance criteria of academic information system means most acceptable by lecturer, college students, and academic support staff (TPA) from each university were merged.

5. Conclusion

1. There are two criteria are used as a benchmark in the decision-making process in the selection of academic information system at the university merged, the first requirement is the functional suitability of the functions of academic information system, and the second is user acceptance of each academic information system.

2. Process of granting or priority ranking is done by using the method of Hierarchy Analytical Process (AHP).

3. Research Results have been tested and can be implemented to objects of research, such as Telkom University.

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