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ABSTRACT

A university needs to attach importance ingredients to the development of its institution in making many changes and intensively making innovations to find the right information technology that is educational and useful for education in the future, also expected to continue to develop through various periods of change at the forefront in the field of information technology, and always produce graduates who are ready to enter the competition in a society and be able to have a best quality of education. A university's commitment to improve the quality has pushed to implement a quality management system to maintain the overall education program that has been built. With strategic planning and university business management processes, designing an Enterprise Architecture (EA) as an architectural basic for providing data for the analysis of university management conditions by using big data technology and data analytics, so the information can support rapid decision-making process in business management. As we know, the world of technology in education always brings up its latest innovations and requires additional competent human resources to be able to help the management process to run in accordance with the vision and mission of the university. This study uses TOGAF (The Open Group Architecture Framework) which already developed by The Open Group Architecture framework in 1995, which helps to make an information system strategic plan with the aim to align between the vision and mission to improve service efficiency and support the organization's strategic plan. TOGAF is a complex framework that is capable of meeting all needs in the development of EAs, because it's involved the design, implementation, scheduling, governance of enterprise information architecture, to detail the needs of enterprise architecture from the university, with the highest goal of this research is to produce Enterprise Architecture design and management blueprints. After the process of the Enterprise Architecture, the final decision is to help the top management to analyze and forecast the whole university data in a real time and helps to coordinate all division that involved the final decision-making process.

Keywords: Enterprise Architecture, TOGAF Framework, Data, Support Decision Making Support, Strategic Planning.

1. INTRODUCTION

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Each data has its own story to be known by others because data is very important. By using technology, the process of collecting, managing, then data analysis can be optimized. Big data text analytics can help organizations find hidden knowledge and generate new knowledge from large amounts of structured and unstructured data [1]. Because the information generated from these data is a key success factor that influences the leadership in making decisions, especially on the <u>31st October 2022. Vol.100. No 20</u> © 2022 Little Lion Scientific

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quality of those decisions. Data is displayed so the information can be received by others and canswer questions about how, where the exa amount (descriptive- analytic) and what happen (diagnostic analytic).	hat 2. RESEARCH METHO can In doing this architectural n act In doing this architectural n process by the author goes th namely:	D nodeling, the research hrough several stages,
At a university, prospective student dat school origin, regional origin, active student student achievement, payment status, lectur	a, ts, 1. Literature Study er In this method, data c	ollection is collected

profile, departmental and lecturer performance achievements are needed by the leadership from the dashboard form and viewed in a strategic view. Data that is real-time, visualized well and can be accessed anywhere will greatly support the quality of decision making by the leadership. The purpose of this study is to create an enterprise architecture for universities in changing the business model with the existence of business intelligence and big data in supporting the quality of decision making. The problem that the authors put forward is analyzed using TOGAF (The Open Group Architecture Framework) to make a strategic information system planning proposal in order to align the vision and mission and support the organization's strategic plan. TOGAF provides methods for designing, evaluating, and building architectures that are appropriate for an organization and also for the maintenance of enterprise architecture. From the TOGAF Adm, the research problem should be attached to the framework:

- Preliminary phase: The scope of the framework is implemented in the strategic view to the management.
- Architecture Vision: All the prospective student data, school origin, regional origin, active students, student achievement, payment status. lecturer profile. departmental and lecturer performance achievements
- **Business Architecture:** The management will be able to access the dashboard 24 hours online from the big data result in the dashboard form
- Information System Architecture: The dashboard filled with the business intelligence and big data information of the university data.
- Technology Architecture: Using the dashboard strategic view to produce the real time data.
- **Opportunities and Solutions:** Continuously provide real-time data in business model that suits the university

from the references as a reference in this paper. The literature study method is carried out by collecting data and information that are used as a reference in the analysis of this information system strategic plan derived from research journals, research publications, and other sources of information related to this research.

2. TOGAF ADM

The purpose of the TOGAF ADM modeling is to model the enterprise architecture based on the stages that have been defined in the TOGAF ADM

3. Result and Discussion

In this step, the authors conducted an analysis by combining the results obtained from modeling using the TOGAF then getting the results of the discussion.

4. Blueprint Architecture

The acquisition of the blueprint is expected to be able to provide maximum results in the management of information technology infrastructure specifically related to academic information systems at institutions. This blueprint will be prepared based on the actual condition of the institution, and these results can be carried out in stages so that these recommendations can be developed and used by the institution.





architecture,

achieve



3. Business Architecture: This stage is used to expand the goals and description of the organization's business architecture at this time and then develop the existing architecture based on the results of the analysis of current conditions.

- 4. Information System Architecture: This stage prioritizes the information system architecture activities
- 5. Technology Architecture: This stage is used to build technological architecture
- 6. Opportunities and Solutions: This stage looks for opportunities and what solutions can be found.

Enterprise Architecture (EA)

3. LITERATURE STUDY

Enterprise architecture is a picture or blueprint of a company that is aligned and adapted to the company's vision and mission (business with information technology. architecture) Consists of data, applications, and technology [2].

Figure. 1: Research Method

TOGAF ADM

The initial step when applying the TOGAF ADM is to define preparations by identifying the

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Figure. 2: TOGAF Framework (Opengroup.org)

4. RESULT AND DISCUSSION

Discuss about the steps of TOGAF ADM:

Preliminary Phase: Framework and Principles

This stage will explain the needs such as defining the vision, mission, and goals to be achieved by a university. Vision: universities must provide quality in terms of learning, research and community service, and have a breakthrough in the development of existing knowledge. Mission: contribute to the community through education.

Architecture Vision

At this stage, the scope of EA is carried out in the value chain diagram. At this stage the activities that occur at a university are identified and grouped into two categories, namely the main activities and supporting activities in a group of activities that illustrate the interrelationships.



Figure. 3: Value Chain in University



ISSN: 1992-8645 E-ISSN: 1817-3195 www.jatit.org business goals it has set with conceptualize **Business Architecture** information systems-based business solutions This stage describes the current based on the current conditions, which can be organizational architecture and develops it by seen in Figure 4. developing its strategy in order to achieve the Board of Directors Marketing Rector Vice Rector Vice Rector Vice Rector Vice Rector Vice Rector Dean Academic Operation Student Alumni Research Support Support Support Support Support Department Center Center Center Center Center Laboratory

Figure. 4: University Organizational Structure

Information System Architecture

This phase involves two architectures, namely data architecture and application architecture, with a focus on identifying and defining applications and data that support business architecture. In making the definition of the current data architecture, referring to the results of the identification of each business process in accordance with the definition of academic administration that has been made with a value chain:





Figure. 5: Information Systems Architecture

Data architecture

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Application architecture

The application architecture that has been developed is based on an analysis of the basic TOGAF technique in the form of a Command Center.



Figure.6: Application Architecture



Figure. 7: Architecture Reporting Tools.

Technology Architecture Phase

This stage defines the technology architecture that supports the vision. Computer network architecture which is now in a university.

With the fulfillment of business architecture, information system architecture, and technology architecture it can produce a blueprint that can later be used to develop information systems at the University.

Opportunities and Solutions

Compared to the old system before using EAs for the support decision, the old system still

manually collected the whole university data from one division to other division and gathered as one report in a period which cannot provide a real-time data for the top management, because it will take a long time to collected.

But now, the dashboard created will facilitate the leadership to analyze the university's development in terms of marketing and academics and current problems and is also expected to be able to predict future problems. Thus, the leadership can make program strategies more quickly and precisely. All leaders can access the dashboard online in 24 hours anywhere and everywhere.

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5.	SUMMARY	informasi (sriti) (pp. 294-	informasi (sriti) (pp. 294-304).	

From the discussion that has been presented above, the researcher can draw conclusions are visualization of data trends in terms of marketing and academics can measure the effectiveness of activities carried out in addition to making decisions made by the leadership can minimize errors made because it uses updated data and looks directly at data trends. This study uses TOGAF (The Open Group Architecture Framework) to make an information system strategic plan to align the vision and mission to improve service efficiency and support the organization's strategic plan. With TOGAF Adm, all needs already detected. Therefore, we need to:

- 1. Maximize the usability of the big data in university to be analyzed in the dashboard form to give the best results for decision making in real-time for the top of management in university
- 2. The whole stakeholder in the university needs to give the input and output of the result to support the Information technology architecture innovation and development
- 3. The maintenance of the dashboard in necessary, having timeline is needed to control the big data needs so the information process always easy to process
- 4. Considering the top management needs to produce more information updated in the dashboard form.

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