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The open group architecture framework: design of information technology architecture (case study: Faculty of Economics, XYZ University)

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ABSTRACT: Competition among universities requires managers to always improve the speed of information services to all stakeholders. The speed of information services takes the biggest role in technology. The role of strategy and promotion for college at this time cannot be ignored its existence to inform the public, and maintain the continuity of the lecture. The application of enterprise architecture aims to create alignment between business and information technology for the needs of the organization. The TOGAF framework is one of the company's detailed, complete and easy-to-use corporate frameworks. This research produces a proposal to improve the application architecture and propose improvements in technology architecture in universities and by using TOGAF framework then an organization can plan an enterprise architecture that can be implemented by universities to achieve its organizational goals. This architectural model can be a basic model for higher education institutions in the development of enterprise architecture.

Keywords: Enterprise Architecture, Higher Education Institutions, TOGAF Framework

1. INTRODUCTION

As one of the faculties in a private University in Surabaya, Faculty of Economics, XYZ University used information system-based technology as the supporting activities of the organization. Information systems are used as supporting in Ministry to students, academic faculty and administration associated with the purpose of assisting the implementation of the activities of the organization.

The problems that occur when these are less effective use of information systems at the Faculty of Economics, XYZ University and lack of support for the existing business process. The core of enterprise architecture is about developing and planning IT resources, and also aligning business strategy through IT.[1]

2. ENTERPRISE ARCHITECTURE

Enterprise Architecture is a blend of organizational descriptions of integrated business and IT perspectives [2], Enterprise Architecture is a statement of how an organization initiates and generates improvement recommendations related to the implementation of IT and business processes in the Organization so that it becomes even better [3],

Enterprise Architecture continuously affects organizational and technology management within the Organization for the development of information systems and produces blueprints[4] from various disciplines both theoretically and practically. Enterprise architecture is a practice of improving management and has a very complex function for companies and information systems and infrastructure.[5]

Enterprise architecture is an important instrument in enterprise integration, combining all sections of the company principles, methods and models used in the organization's realization,

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structural design, business processes and infrastructure. [6]

Enterprise architecture is the basic knowledge that consists of elements of the internal and external business environment and the relationships that produce the outcomes used for the improvement of the IT organization.[7]

TOGAF (The Open Group Architecture Framework) is a framework consisting of a series of support tools and methods for developing enterprise architecture. The enterprise architecture development method is owned by a TOGAF framework called TOGAF ADM (Architecture Development Method) and the core of the TOGAF framework itself. TOGAF ADM is a generic method that can be used to develop and manage enterprise architecture models and is designed to handle most system and organizational needs [8]. TOGAF (Open Group Architectural Framework) is a framework for enterprise architecture developed by open groups in 1995 to the present day. TOGAF is a framework in the form of a stage method for the Organization in creating enterprise-level architecture.

TOGAF is a development of TOGAF Architecture (ADM), this method proved able to develop business enterprise framework that is detail, complete and easy to use. Business.[9]

The Open Group Architecture Framework (TOGAF): is a "Technical Architectural Framework that comes from the US Department of Defense". TOGAF was introduced in 1995 for management as well as technology. This is an easy to understand framework and, for this reason, any organization can use TOGAF freely to design EAs.[10]

3. METHOD

In Fig 1 showing the stages performed in this study consists of an analysis of business processes and business architecture modeling. Business process analysis is conducted to get an idea of what business processes are currently running in the environment Faculty of Economics, XYZ University.

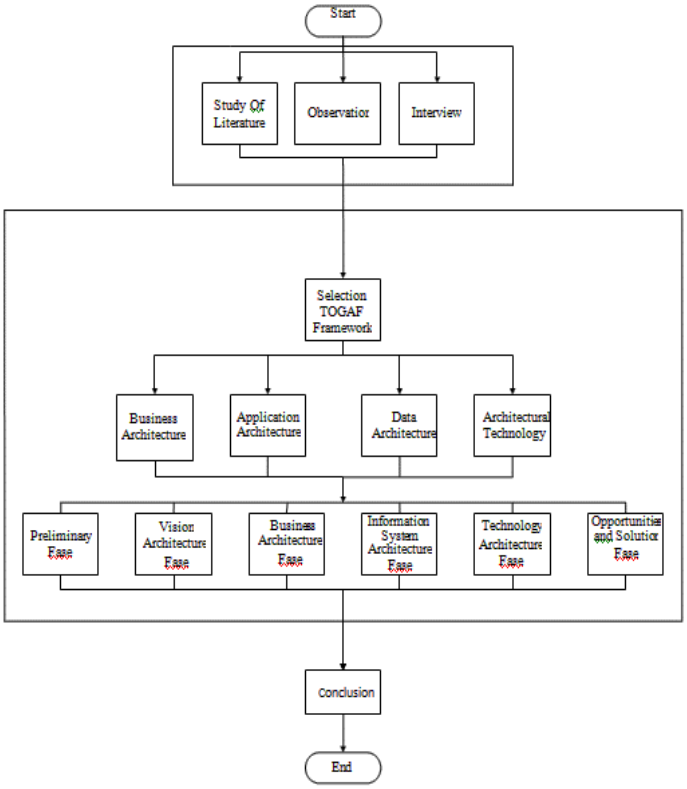

Fig.1 Research Flow

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4. RESULT AND DISCUSSION

4.1Architecture Vision Phase

Vision: "Becoming a national-class Economics Faculty superior in economics and business in 2020."

4.2Business Architecture Phase

The following are the business processes in the Faculty of Economics, XYZ University, which is illustrated with a diagram of the value chain. Here is a diagram of the value chain the Faculty of Economics, XYZ University.

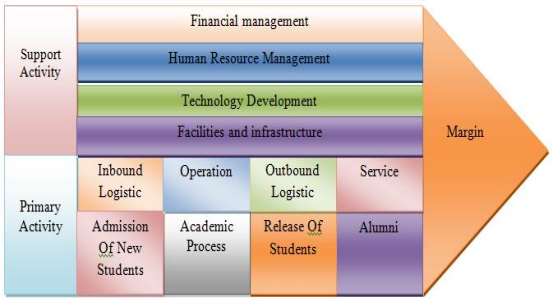

Fig.2 Value chain business area Faculty of Economics, XYZ University

The following is a description of the main activities and supporting activities the Faculty of Economics, XYZ University which are described as follows: The main activity, consisting of:

1. Inbound logistic: admissions is an activity which includes the admissions process, selection of new students, the announcement of the results of the selection of new students and new students logging.
2. Operation: of the academic process is an activity related to the management of curriculum, lectures, attendance, exams, grades, KRS, KHS and academic transcripts.
3. Outbound logistics: release of student activities related to the management of the end of the academic or the release of academic study students as of late, the start of the final project registration.
4. Service alumni is an activity that the management of alumni data, data collection where alumni work and job center management as media that help alumni in looking for job for those who have not get job or look for job vacancy installed in job center.

The supporting activities, consisting of:

1. Financial management is the activity related to the effort to provide financial management support that range on budget planning, investment and maintenance of the infrastructure with all the activities of the academic Operational.
2. Human resource management is supporting activities for the determination of needs, monitoring and allocation of human resources, especially at the academic operational activity. Including the management of staff and lecturers (professors or lecturers remained outstanding.
3. Operational and administrative as well as for educational activities.
4. Development of technology is the management of information technology for activities Facilities and infrastructure is the activity of facilities and infrastructure management support.

4.3 Information System Architecture Phase

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The result of the data architecture that is either a Data Component Diagram has a purpose and that is to identify and manage all the data used in the institution of education. The following is a Diagram of the Component Data used are described in table 1 below.

Table 1 Data Architecture

Data Code	Data Name	Data Owner
DT_1 A	Plan Card	Academic
DT_2 A	Result Card	Academic
DT_3 A	Transcript	Academic
DT_1 SR	Lecture Evaluation	Students Resource
DT_2 SR	Student Biodata	Students Resource

4.4 Application Architecture

The following analysis of the gaps in the application of the Faculty of Economics, XYZ University.

Table 2 Application Architecture

Application	Reply	Add
DPAM	Academic Division	-
LIK Online	Academic Division	-
PMB Online	Student Affairs	-
PKTS	Student Affairs	-
Bill Information	-	Administration Division

4.5 Technology Architecture Phase

Below is an overview of the proposed infrastructure technologies that are currently available or is being used by the Faculty of Economics, XYZ University of can be seen in Fig 3

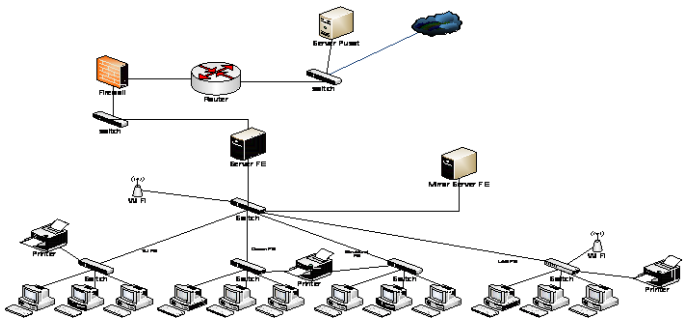

Fig 3 Proposed Technology Architecture

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4.6 Opportunities and Solution Phase

The gap analysis is useful for explaining what components should be retained or removed from the current system at the Faculty of Economics, XYZ University and to explain what components should be replaced or added (add) with new components of proposed architecture.

The gap analysis is made in matrix form, with the following conditions:

1. Placement of all components of the target architecture (future) in the first uppermost first row of the matrix. An existing system component is placed in the leftmost first column of the matrix.
2. If an existing system component exists within the target architecture component (future), then mark the intersecting cells with "retain" information (the old components are retained and used).
3. If the target architecture component (future) is not contained in the existing system components (existing), then mark the "add" description. All the components given the "add" information are new components.

5. CONCLUSION

Based on the results of the discussion on this research, retrieved some of the conclusions are:

1. It generates architectural planning information systems Faculty of Economics, XYZ University consisting of business architecture, application architecture, data architecture, and architecture technology.
2. It generates a draft proposal which includes the following :
    a. The proposed improvements to the application architecture
    b. The proposed technology architecture improvement

6. ACKNOWLEDGEMENTS

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