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Analysis Business Architecture Study Case :Medical Colleges in Purwokerto

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The Strategic planning information is identified as a key factor in creating a balance of IT and business organization. This paper takes a case study on Medical colleges in purwokerto located in the province of Central Java. Problems encountered in the Medical colleges in purwokerto is, although it has already implemented information systems architecture business existing but not yet well integrated so that it takes a business design architecture and IT components to the integration process, especially business main business process. The purpose of this paper is to analyze baseline business architecture and business architecture design in accordance with the standards and also analyze whether a component of IT in business architecture was sufficient to support the Medical colleges in purwokerto became an international educational institution. TOGAF methodology used to design the development of business architecture. Results of TOGAF methodology is a model and blueprint for the integrated floating business architecture and IT support the business architecture will be obtained. Blue print obtained will serve as a guide to plan the development of business architecture that fits your business processes at Medical colleges in purwokerto.

Keywords:TOGAF, Information Systems,Enterprise Architecture.

1. Introduction

Strategic planning information is identified as the key factor in creating IT and business alignment in organization.[1] Increasing IT on Medical colleges in purwokerto is needed to support business architecture thus STIKES can integrate business process well and manage staff, students as

well as develop business in accordance with Medical colleges in purwokerto strategy. Application of great information systems and information technology (IS/IT) within organization is built from various units involved in organization, so it will generate simplicity to access data or information inside organization.[2]

The purpose of this paper is to analyze baseline of business architecture and business architecture design according to the standard and to analyze whether IT components of business architecture adequate to promote Medical colleges in purwokerto to be International Class Educational Institution. This paper takes case study on Medical colleges in purwokerto located in Central Java Province. The problem faced by Medical colleges in purwokerto is although information systems has been applied, the current business architecture has not well integrated so an architecture business design and IT components which may integrate business process particularly major business process is needed.

The development of methodology to design business architecture has been developed recently.[3] There are some methodologies to design business architecture such as EAP, TOGAF, DODAF, Gartner, and FEA.[4] TOGAF methodology is used for business architecture development design. The results of TOGAF methodology are model and basic framework (blue print) in developing integrated business architecture.

By using TOGAF to define business process on Medical colleges in purwokerto then blue print to integrated business architecture development and IT which support business architecture will be obtained. Later, the obtained blue print is made as a guide to a plan of business architecture development in accordance with business process on Medical colleges in purwokerto.

2. Experimental Details

During 25 years of development, many frameworks of enterprise architecture have been done.[3]Enterprise architecture framework used in this paper is TOGAF. TOGAF (The Open Group Architecture Framework) is a method for enterprise architecture which provides methodology to analyze business architecture of an organization as a whole.[9]

TOGAF enterprise architecture has 4 phases consisted of Business Architecture, Architecture Data, Architecture Application, and Architecture Technique. Business architecture describes business process which is appropriate with the purpose of organization. Application architecture describes and design application which supports business process. Data architecture describes data usage within business process. Architecture business describes how the interaction of application is and application will be supported by hardware and software infrastructure.[10]

Figure 1 explains the phases of TOGAF. The process of each phase in TOGAF is defined in detail, implementation on each phase will determine appropriate activities to get the required and needed systems.

3. Results and Discussion

A. Value Chain

Value chain Michael Porter is used to explain the main activities and supporting activities.[3]Value chain of Medical colleges in purwokerto is documented as in the figure 1. Value chain Medical colleges in purwokerto is cooperation between main activities and supporting activities to give output to customers. The main activities cover Inbound Logistics: admission of new students, research and community service; Operations: academic, research and community service. The supporting activities consist of infrastructure management, human resource management, finance management, and internal quality assurance.

B. SWOT Analysis

SWOT analysis identifies internal factors of Medical colleges in purwokerto as strengths and weakness whereas identifying external factors as opportunity and treat.

Strengths

1) The head supports in developing information and communication technology (ICT) to sustain Tri Dharma PerguruanTinggi activities.
2) Availability of adequate computer network infrastructure and internet.
3) Have adequate information systems which support ICT–based teaching and learning activities.
4) Utilization of ICT among lecturers and students to conduct teaching and learning activities.
5) Have human resource to do ICT management.

Weakness

1) The number of human resources is still lacking to manage information and communication technology compared to demand that has to be served.
2) Database centralization has not been applied on the information systems thus the current information systems are not integrated as a whole.

Opportunities

1) The need of ICT-based educational method increase.
2) The need of ICT-based service is larger.
3) Cooperation with third parties to enhance ICT.

Threats

1) Competition in academic service on college sector is increasingly tight.
2) Society is more selective in choosing college.

Table 1. Matrix SWOT

	Strengths	Weakness

Opportunitie	• Improved quality of human resources through training of ICT managers. • Meningkatnkan productivity of the IT division in developing information systems and information technology. • Improve information services to enhance customer satisfaction.	• Increasing the accessibility of the internal computer network. • Increase the number of human resources in the IT division. • Conduct internal training to staff and management to improve service.

	Strengths	**Weakness**
Threats	• Improving the quality of human resources through training of ICT managers. • Improving the quality of information systems for academic services.	• Integration of the entire system information into a unified information system. • Improved quality of service information to the public. • Improved accessibility of websites Medical colleges in purwokerto

C. Gap Analysis

IT gap analysis in business architecture focused on components from value chain of Medical colleges in purwokerto. Gap analysis shows that there are some differences between old systems and proposed systems. Gap analysis is documented on table 2.

Table 2. Gap Analysis

Admission of New Students		
Activity	**Old Systems**	**New Systems**
Registration	Registration systems cannot be done online which directly intergrade with PMB systems.	Registration can be done online which has been integrated with PMS information systems, so prospective students directly get registration number and registration card.
EntrySelectionProcess	SBT entry exam systems are not integrated with PMB information systems so the report of PMB result is recapitulated in excel.	CBT test systems are directly integrated with PMB information systems.
Reporting Process of	Reporting process is done manually	Information can be seen directly any time

PMB Development	using excels, this reporting process is perceived less efficient and effective, and information is not real time.	by the chief according to the needed information.
Final report of PMB	Reporting is done manually using excels which is only in the form of number.	Final reporting presents all data in detail as a result of incorporation of PMB registration until graduation basil, information can be seen using graphic so that make the chief easier to analyze and can make policy to upcoming PMB.
Academic		
Activity	**Old Systems**	**New Systems**
Academic registration	Data integration with another information systems such as e-learning, PMB, and finance has not happen yet.	Integration is done with PMB information systems and finance so that BAAK staff does not need to re-input students data and to check payment can be seen directly.
Academic counselor	PA lecturers cannot access academic information systems to see students' attendance, KRS and students' KHS.	PA lecturer has access to academic information systems to monitor students.
Teaching and learning activity	The use of e-learning as media to support teaching and learning activity has been applied but students' data have not integrated with academic database. Thus, to be able to use lecturers' data, course's data, and students' data is still inputted manually. Department does not have access to academic information systems to monitor lecturers attendance information, and students' mark.	E-learning takes data from academic database, so when there is new students and new semester, e-learning is ready to be used. Department can access academic information systems to monitor lecturers attendance and students' mark.
Mark Reporting	Students' mark reporting cannot be seen online by students and students' parents.	Students' parents and students can access KHS mark reporting online.
Graduate		
Activity	**Old Systems**	**New Systems**
Registration of graduation	Files collection for graduation does not have information systems and BAAK	Files is uploaded and BAAK staff validate the uploaded data.

	staff has to see file one by one.	Students' status update becomes graduated and directly input into graduate database.
Printing Certificate and Mark Transcrip	Need more time because the making of certificate is done one by one.	Printing is done through academic information systems according to graduation status that has been updated by BAAK.
Reporting	Data source for reporting is done manually.	Reporting is made automatically, either numbers of graduate report and alumni data, and study tracer can be seen real time by the chief party, thus becoming a self-evaluation materials for the improvement of academic quality and service to graduate.

4. Conclusion

Business architecture analysis conducted using TOGAF describe business architecture baseline in Medical colleges in purwokerto. State analysis also has been conducted such as main activities analysis using value chain and environmental state analysis using SWOT.From the analysis which has been done resulting proposal of business architecture design that is able to integrate occurring main business activities using TOGAF framework. This also shows that business architecture becomes one of key components to determine how well IT has aligned with its business' goal.
According to the presented gap analysis, information systems of new students admission has to be increased from admission process, entry exam to announcement. Graduate systems are suggested to have real time study tracer report and alumni activities report. Academic systems are suggested to have real time report about ongoing activities to the related stakeholder.

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Figure captions

Figure 1. Explains the phases of TOGAF

Figure 2. Value Chain

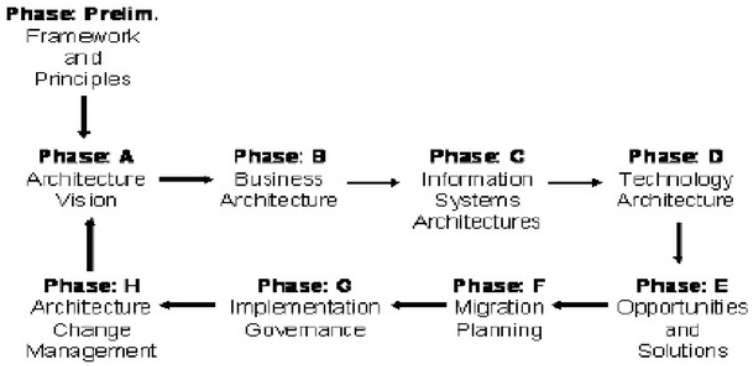

Figure 1. Lukianto et al.

Figure 2. Yudi et al.

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