Business Architecture of Public Guest Service for University Using TOGAF ADM Framework

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Business Architecture of Public Guest Service for University
Using TOGAF ADM Framework

Hendy Tannady[1], Johanes Fernandes Andry[2], Yohanes Totok Suyoto[3], Angellita Herlian[4]

Management Department, Universitas Pembangunan Jaya, Banten, Indonesia[1,3]
Information System Department, Universitas Bunda Mulia, Jakarta, Indonesia[2,4]

Abstract— Public Guest Service is a place of lodging that is provided for university students. Public Guest Service in this study is located in Indonesia in the city of Jakarta which has hundreds of lodging capacity and has public facilities that are quite varied. In the current management process, all data collection processes for residents, repairs, maintenance still use manual data collection as well as improper data storage. In an effort to improve service to residents and operational management, the need for business process development or the development of activities in Public Service Guest. Depend on the need for increasing occupant services and reminding of effectiveness in running Public Service Guest operational management, the solution is to align business processes with the use of information technology or information systems. This study uses TOGAF ADM in the Business Architecture section. This research generates a recommendation in the form of planning of a new business flow and maximizing the use of information systems and information technology in maximizing the Public Service Guest business process.

Keywords: The Open Group Architecture Framework (TOGAF), Architecture Development Method (ADM), Public Guest Service

1. INTRODUCTION

The development and utilization of information technology in every day continue to grow rapidly within the passage of time [1]. These changes make innovative entrepreneurs and traditional organizations able to create products or services by developing new business models, building old business models, shaking the industry as a whole, creating new business processes and changing the way business is done every day [2]. In the era of globalization, computers are something that is often recommended to be an ideal device in handling data management in a company [3]. Information system is an implementation of the system within a company to support information needed by all levels of management. Information system planning explains how to apply knowledge about information systems into a company so that it can continue to be famous if the company develops in accordance with modern technology and theory and information systems can be made according to the needs of the company. Therefore, to be able to implement an effective and efficient system requires, planning, implementing, regulating and evaluating according to the desires and values of each organization [4]. The use of information technology within the company is able to create excellence in competitive competition and is also the main target of efforts to implement Information System or Information Technology in the company [5]. Public Guest Service called PGS. PGS defined as a room for a number of students. PGS in this research is located in Jakarta, where the PGS has a large enough capacity of around 600 people, has four types of room facilities, and has many public facilities that can be used by occupation or guests. PGS runs a simple business process, from service to recording PGS assets. The use of information technology in business processes only uses Microsoft Office to store occupant data to PGS asset data. Business processes go according to what they should be but the need for information technology alignment with PGS business

processes to facilitate the collection and retrieval of PGS data. Therefore, researchers are interested in developing and harmonizing information technology and business PGS processes.

2. RESEARCH OBJECT AND PROBLEM

The object of this research is PGS. PGS define as a temporary residence for a group of people consisting of a number of rooms, and led by a head of the PGS. PGS in this study is located in Indonesia in the city of Jakarta. This Public Service Guest has a large capacity where the PGS can accommodate more than 600 rooms, this PGS also has several types of rooms such as rooms that have bathroom facilities or only rooms without bathrooms. And this PGS has public facilities such as canteens, cafes, laundry, mini markets, student lounge, and parking lots for occupants and visitors. PGS also provides security and cleanliness services that are quite intense in maintaining security and cleanliness. Many facilities and manpower available to maximize the satisfaction of occupant services, the relationship of the business process of using information technology to dormitories is not optimal in the use of technology that is owned where information technology used only uses Microsoft Office. Business process, almost all of its activities are still run manually. As many residents stay, repair and maintenance of assets that need intensive attention. Process of switching and entering which so fast, large and separate, recording these things manually is not effective, that is also searches for previous data from data that causes a lot of problems, where it is difficult to find data in a large and past data set.

3. RESEARCH OF EXISTING SOLUTIONS OF THE PROBLEM

The amount of PGS data needs to be stored, and the difficulty of finding separate past data in accordance with the classification of functions researchers are interested in designing enterprise architecture for the business Public Guest Service process, namely by using the open group framework (TOGAF) and architecture development method (ADM). TOGAF is a detailed method of how to build, manage, and implement enterprise architecture and information systems called Architecture Development Method (ADM) [8]. ADM is a method of developing and managing the life cycle of an architectural company and serves to fill the company's architecture [9].

4. RESEARCH METHODOLOGY

This research uses TOGAF ADM. The Open Group Architecture Framework (TOGAF) is a framework for enterprise architecture that provides a comprehensive approach to planning, designing, and implementing enterprise information architecture [10].
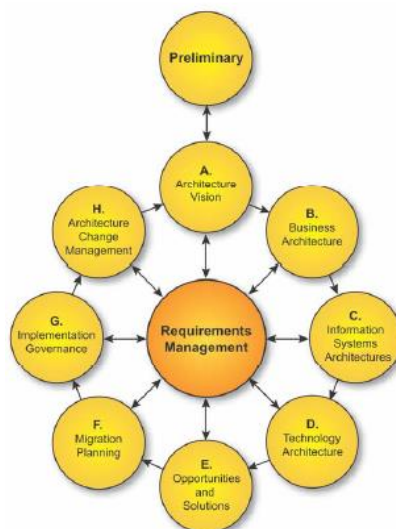

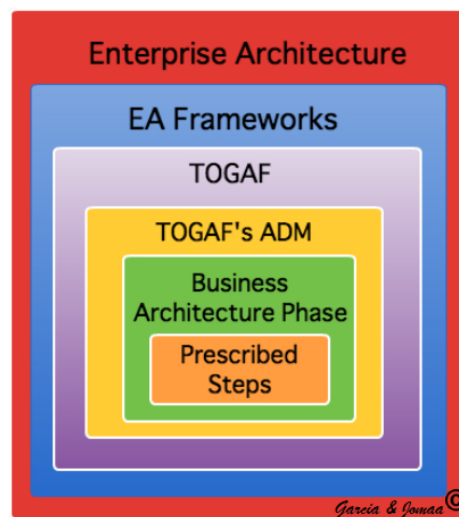**Fig. 1** the Open Group Architecture Framework [13]   **Fig. 2** Review Overview [11]

TOGAF is an architectural framework. TOGAF provides methods and tools to assist in the reception, production, use and maintenance of architecture. The Open Group Architecture Framework (TOGAF) was chosen to be used in this research, because it is considered as one of the most commonly used standard frameworks [11] (see figure 2 Review Overview). In addition, TOGAF provides an implementation phase in the Architecture Development Model (ADM) [12]. ADM describes methods for developing company architecture, and forms the core of TOGAF (see Figure 1 the Open Group Architecture Framework). ADM integrates the TOGAF elements described in this document as well as other architectural assets available, to meet the business and IT needs of an organization [13]. TOGAF propose as a series of step to be taken in business Architecture phase is shown in Figure 3 Business Architecture. There is nine step to develop business architecture are (see figure 3 TOGAF's Business Architecture Step) [11]:

4.1 Select Reference Models, Viewpoints, and Tools
First, all modeling process for architecture must determine in this process. This process includes the selection of the models needed to support the specific appearance through the use of the tools or methodologies chosen for each and every viewpoint in Essence, done at this initial step is choosing, analyzing and describe the business process, stakeholder, and viewpoint of relevant business architecture (example: operational, management, finance, etc.). This process is usually described by business processes, application or applications that may be enabled by the architecture; the business and technology environments; people, and computing components that are responsible for the execution of a scenario and the desired outcomes of any proper execution.

4.2 Develop Baseline Business Architecture Description
Second Step is determining a development base description of business architecture in the company concerned. In essence, this step describes the condition of existing process or business processes on the company that is used for enterprise development reference.

4.3 Develop Target Business Architecture Description
This step is one of that requires the development of a target Business Architecture in order to support the Architectural Vision. In this context, the target of Business Architecture is the state of future Architecture that is being developed for the Company.

4.4 Perform Gap Analysis
Fourth step, designer must verify architectural models for internal accuracy and consistency by performing the following tasks: (1) Trade-off analyst with the aim of resolving conflicts that exist between different views, (2) Verify the architecture model which supports goals, principles, and constraints, (3) Noting the changes done to the viewpoint, as represented in the selected models that may be found within the Architecture Repository, (4) Testing architecture models for completeness against the requirements, (5) Conducting a Gap Analysis that identifies the existing gaps between the baseline and target states.

5.RESEARCH RESULT

5.1 Select Reference Models, Viewpoints, and Tools
This process is choosing, analyzing and describe the business process, stakeholder, and viewpoint of relevant business architecture. Tenant Relation Officer is responsible to activities related to occupant. General Affair is responsible to provides all the needs needed for maintenance or other facilities. Manager operational is responsible to control the running of the company's business processes. Technician is responsible to check

facilities and carry out maintenance and repairs. In the condition of the running system there are several stakeholders that support the activities, namely Operational Manager, Tenant Relation Officer, General Affair, Technician, Security and Cleaning service, and Occupant. Value Chain Analysis in Public Guest Service, where there are two groups of activities, namely the primary activities and supporting activities. Primary activities involving occupation registration, asset rental management, room allocation, offer facilities, and safety & cleaning service.

5.2 Develop Baseline Business Architecture Description

In this step describes the condition of existing process or business processes on the company that is used for enterprise development reference. Its business process divided into three parts, services provided in the Public Service Guest, business processes and current business functions. In boarding services there are three parts, namely management, preparation, and service. And there are several business processes in the Public Service Guest, namely rental management, payment management, asset management, room allocation, bidding facilities, occupant registration, services, storage, and security and cleaning services. Figure 5 shows current business activities. Describe current system condition in PGC. There are has occupation registration, asset rental management, offer facilities, daily service, safety and cleaning service. But all of that, business process is just using Microsoft office for documentation and PGC data storage, where data storage includes occupants data, maintenances data, payments data rentals data and other interests. Therefore, some application needed for business process maximize.

5.3 Develop Target Business Architecture Description

In this step, the target of Business Architecture is the state of future Architecture that is being developed for the Company. This process will describe with rich picture. Figure 6 explains business architecture planning where there are several manual records that are developed using information systems or information technology with the aim of aligning business processes with the use of information systems or information technology. It also explains the payment application architecture, where this application helps the business management process of payment invoices that have been assisted by the information system, where the condition of the system runs now, using recording and verification manually, with the application of the management payment invoice process recorded and verified automatically. Occupant applications help occupant registration business processes, current occupant registration still uses manual occupant data input, with the development, a large number of occupant data will be recorded and stored neatly and integrated. Application of rental management, asset management business processes from the tenant's data collection to the tenant's payment management is done manually, designed an application with the aim that asset management is more structured and easy to find the loan history. Electronic applications where public guest services require maintenance records, both from the condition of electronic assets to the condition of basic needs, there is a public service guest. Occupant application, where this application helps in improving business processes within the scope of services, so that services are more optimal and orderly.
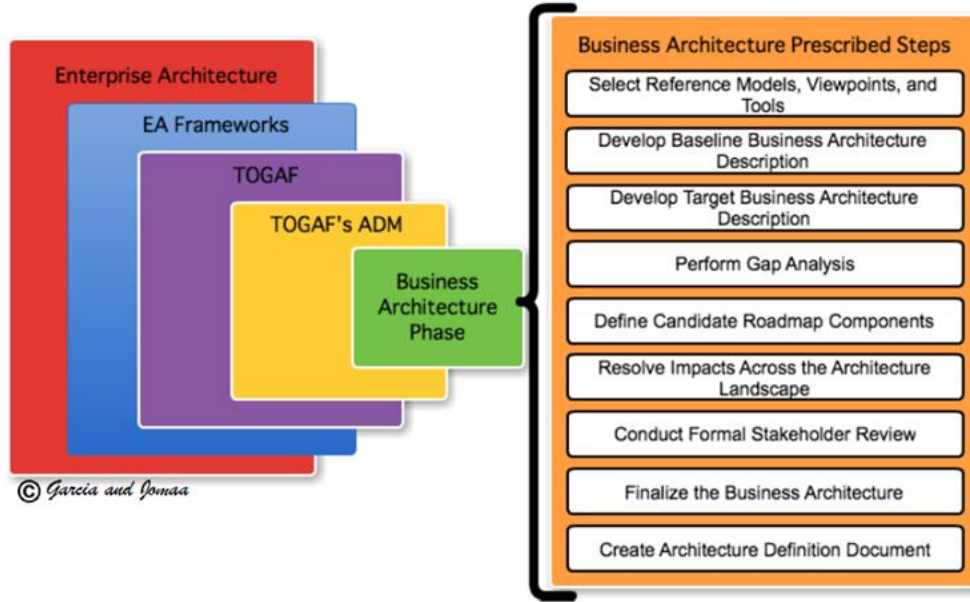
Fig. 3 TOGAF's Business Architecture Step [11]

Laundry application, public service guest has adequate resources regarding laundry needs. But this has not been maximized, therefore with the addition of workers to serve laundry and with the help of the Laundry application it can be utilized and maximized to increase business opportunities.

5.4 Perform Gap Analysis

In this process will conducting a gap analysis that identifies the existing gaps between the baseline and stated target (see Figure 4 Gap Analysis). Figure 4 shows gap analysis, RT (Retain) is activities that remain in the application to be designed. RP (Replace) is activities in the application that will be designed and developed. ADD is an activity added to the application.

Existing \ Future	RENTAL AGREEMENT	CHECKING FACILITIES	REPORT RESULT CHECKING	ISSUED INVOICE PAYMENT	SUBMIT INVOICE PAYMENT	VERIFY PAYMENT	REPAIR FACILITIES	REPAIR REPORT	ALLOCATION ROOM REPORT	REPAIR SCHEDULING	OFFERING FACILITIES	CONSULTATION SERVICE	PUBLIC SERVICE GUEST TOURS	DOCUMENT PREPARATION	DATA RECAPITULATION	COMPLAINT RECORD	TRANSACTION RECORD	REPORT LAUNDRY RESULT	CHECK THE GOODS OWNER	RECORD TAKER GOODS	BATHROOM CLEANER CHECKING	CLEANNING FACILITIES	SECURITY CHECKING	REPORTED SAFETY AND HYGINE	LOGIN	ELIMINATED
RENTAL AGREEMENT	RT																									
CHECKING FACILITIES		RT																								
REPORT RESULT CHECKING			RP																							
ISSUED INVOICE PAYMENT				RP																						
SUBMIT INVOICE PAYMENT					RP																					
VERIFY PAYMENT						RT																				
REPAIR FACILITIES							RT																			
REPAIR REPORT								RP																		
ALLOCATION ROOM REPORT									RP																	
REPAIR SCHEDULING										RT																
OFFERING FACILITIES											RT															
CONSULTATION SERVICE												RT														
PUBLIC SERVICE GUEST TOURS													RT													
DOCUMENT PREPARATION														RT												
DATA RECAPITULATION															RP											
COMPLAINT RECORD																RP										
TRANSACTION RECORD																	RP									
REPORT LAUNDRY RESULT																		RP								
CHECK THE GOODS OWNER																			RT							
RECORD TAKER GOODS																				RT						
BATHROOM CLEANER CHECKIN																					RT					
CLEANNING FACILITIES																						RT				
SECURITY CHECKING																							RT			
REPORTED SAFETY AND HYGINI																								RT		
NEW																									ADD	

Fig. 4 Gap Analysis

In this analysis gap describe there are 15 activities will retain in architecture business, namely rental agreement, checking facilities, verify payment, repair facilities, repair schedule, offering facilities, consultation service, dormitory tours, document preparation, checking the good owner, record taker goods, bathroom clean checking, cleaning facilities, security checking, report safety and hygiene.

The activities will replace in business architecture are:
1.Report issue checking, this activity will change using information system to help data backup and finding the report.
2.Issued invoice payment, this activity will change using information system to deliver invoice payment to occupant without distribute invoices using paper to each occupant
3.Submit invoice payment, this activity will change using information system to assisting make it easier for occupants to provide proof of payment through an information system.
4.Repair report, this activity will change using information system to assisting in the repair report data collection to make it easy to search report repair history.
5.Allocation room report, this activity will change using information system to know the rooms that have not been occupied, the history of the condition of rooms and rooms that are possible to be allocated, and help the allocation report to the manager.
6.Data recapitulation, this activity will change using information system to assisting recapitulation data only in one page and it can search the data easily.
7.Complaint record, this activity will change using information system to help occupant report complaints about facility conditions without the need to write on the form.
8.Transaction record, this activity will change using information system to help verify the proof of payment automatically.
9.Report laundry result, this activity will change to the provision of laundry to choose its own public guest service, and facilitate the collection of the results of transactions by inputting data into the system and can display the results of laundry final report.
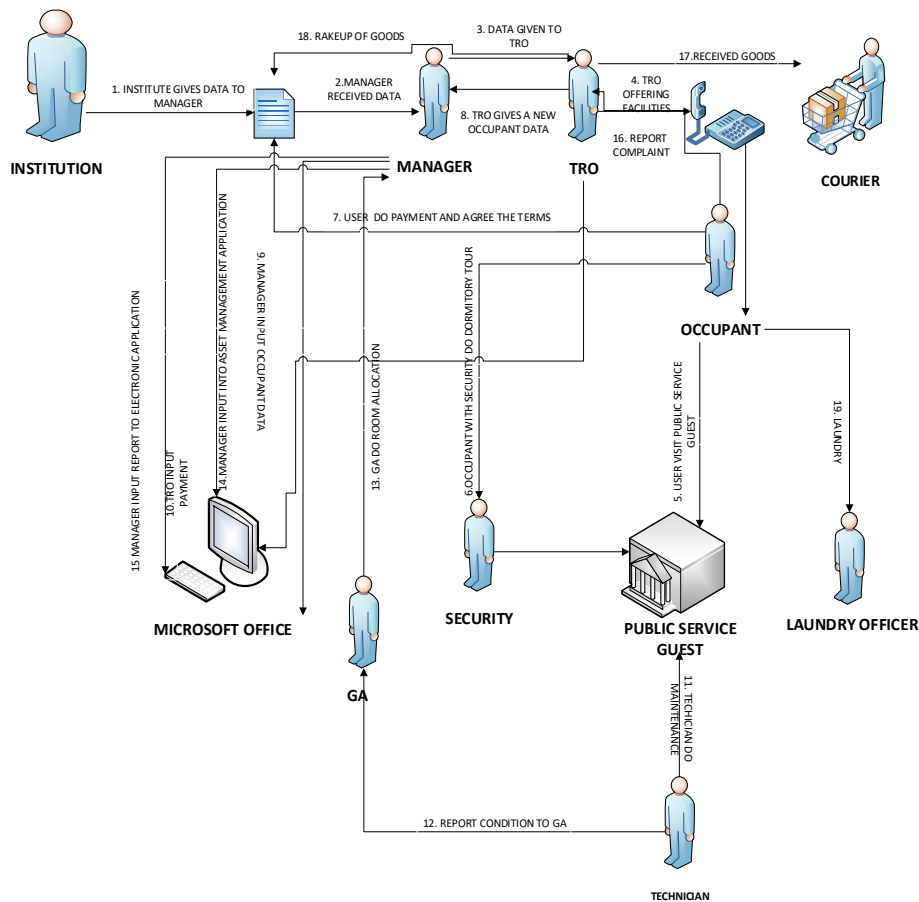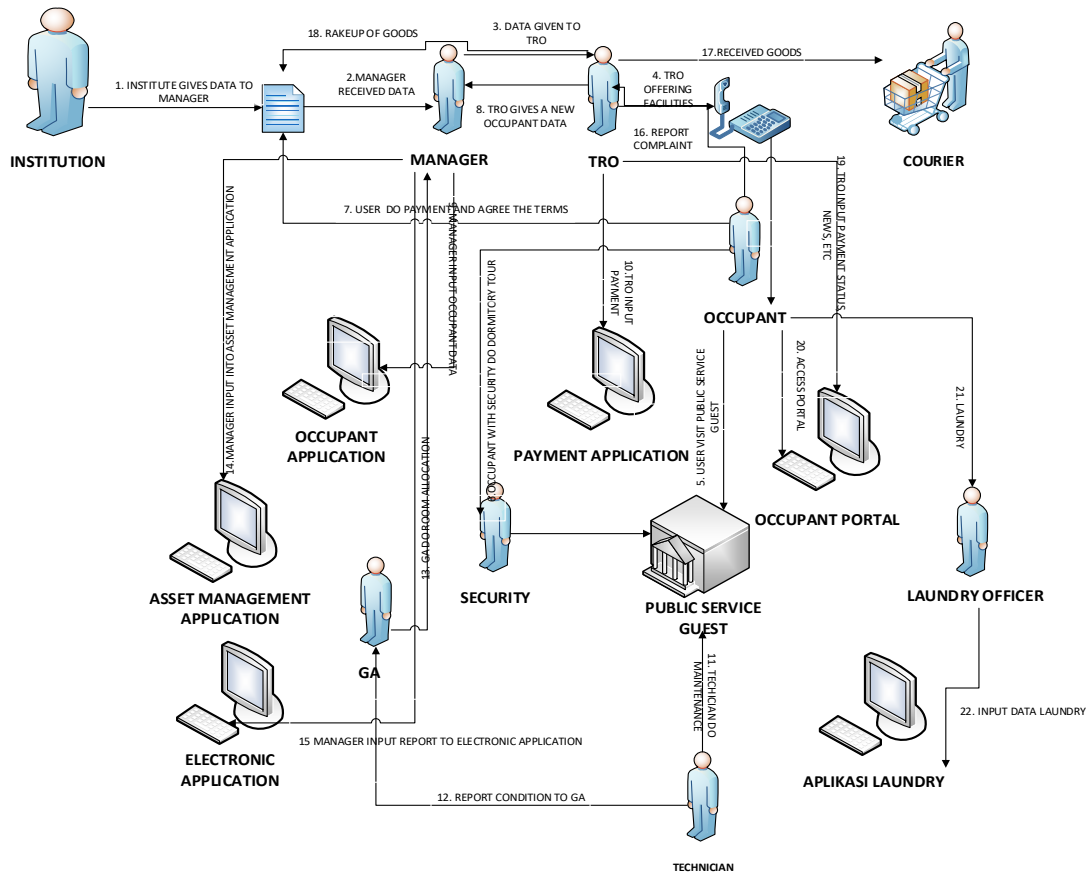

Fig. 5 Current Business Activities

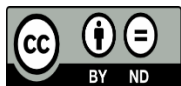**Fig. 6** Business Architecture

6. CONCLUSION

Existing business processes have not maximized the use of information systems and information technology. Therefore, an enterprise architecture planning is carried out with the aim of aligning business processes with the use of information systems or technology. Enterprise architecture planning produces blueprints from the architectures, namely business architecture, application architecture, data architecture, and technology architecture. The use of Microsoft office as a support for the running of business processes makes the data scattered and not integrated. Enterprise architecture planning is able to optimizing the use of information system or information technology to facilitate data collection and automation system for every part from asset management applications to service applications for all residents. Enterprise architecture design provides solutions to existing service problems, by aligning business processes and the use of information technology. The key success of enterprise architecture planning is support and commitment of all stakeholders.

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