International Journal of Psychosocial Rehabilitation, Vol.24, Issue 01, 2020
ISSN: 1475-7192

Development of Enterprise Architecture in XYZ Agency Using Enterprise Architecture Planning (EAP) Based on the Zachman's Framework Approach

[1] Hari Supriyadi, [2] Arief Rahmana, [3] Ucu Nugraha

Abstract - T*his study aims to make the design of the development of an integrated information system to support business processes that have been established in order to conform with the vision, mission and objectives to support the company.*

Makes the design development of integrated information systems at XYZ Agency, the framework used is Enterprise Architecture Planning (EAP) as a framework for the design of an integrated information system to assist the business process XYZ Agency, while the stages / steps, among others: the initiation of planning, Business Modeling-Technology Currently, Architectural Design Data, Technology and Applications and implementation.

The findings of this study can provide guidance in the development of an integrated system to provide efficiency and effectiveness of processes between divisions as part or division one part or other divisions within the organization very well integrated.

Further observations are needed in the future as a guide in further system development, this can facilitate the development of the system because the guidelines or blueprints are made according to the needs of the company.

This research is expected to provide a reference in designing integrated information systems, especially the use or selection of frameworks that are in accordance with the capabilities and conditions of the company and in accordance with company needs.

Keywords *- Information System, Enterprise Architectur Planning (EAP), Business Processes, Integrated Information System.*

I. INTRODUCTION

Information Technology is not just a tool in managing business process activities but has become a part of supporting an organization's strategy in achieving the organization's vision, mission and goals. However, at present the general problems faced by many organizations that have implemented Information Technology in supporting their business processes are not yet in harmony between the business strategy that is being developed and the development of the technology strategy. Enterprise Architecture is one solution that can be implemented by companies in overcoming the above problems. Enterprise Architecture is a collection of data organizing activities that are used and

[1] *Information System, University of Widyatama, Bandung, Indonesia. Email: hari.supriadi@widyatama.ac.id*

[2,3] *Information System, University of Widyatama, Bandung, Indonesia*

generated by organizations that cover the objectives of the organization's business processes, the output produced by Enterprise Architecture can provide guidance in the form of a blueprint related to information technology developers in the long term that is in line with a company's business strategy..

Blueprint document as a guide in the development of information technology means information technology components and management components are connected as one, that work together as the same unit. This guide as a framework required by the company in the development of information technology harmoniously aligned with the business strategy of the company.

XYZ Agency is one of the organizations engaged in services, especially in marketing and advertising, basically each Agency has its own characteristics, so that the form of information system development that will be developed will have different characteristics from one agency to another.

XYZ agency has been using information technology to support its business operations, but in fact a variety of technology platforms and applications are applied, it is the primary obstacle because the system by itself does not integrated that may impact such as the level of data availability is low, the effectiveness and consistency of data availability is low. so that the XYZ agency currently needs Enterprise Architecture in integrating the systems they have so that the systems are developed in harmony, in harmony with business strategies and in accordance with needs.

.

II. LITERATURE REVIEW

1. The Literature Architecture

In the understanding of architecture is not just a general understanding of the scientific basis related to the physical construction, but it is also related to its business and software development tools:

a. Architecture (Architecture) are elements in a system that has several elements, including network devices, hardware and structured software. (Electronic Industry Association, 2008)

b. Design and build for the unity of system development both related to physical or non-physical, real or virtual. (ICH Architecture Resource Center, 2008).

Based on the meaning of the above, we can conclude the point is the depiction of architecture in the development of systems that contained the blueprint document can be viewed from different angles.

2. Enterprise

Below are some of the meanings of the enterprise:

a. Unity of components that provide support for business factors and organizational goals that have been created.

b. Unity of the overall element that runs based on direct control of the organization.

Enterprise is not limited to organizations that have goals in terms of profit, but there are organizations engaged in non-profit matters. Enterprise has a presence in an organization as a whole or also as a sub of the organization. (Electronic Industry Association, 2008).

3. Enterprise Architecture

Here are some meanings of Enterprise Architecture (EA):

a. Appropriate modeling in illustrating an organization / company and what must be developed as an effort to fulfill various things needed by management / organization (Electronic Industry Association, 2008).

b. Mapping a blueprint document to illustrate the interrelationships among all elements, including users placed in companies that have their own duties in developing cooperation / collaboration / coordination between these elements. (Ward, John and Peppard, Joe, 2002)

c. As stages in the ascertainment of the IT resources in a company / organization that allows running simultaneously aligned with the strategy of the company / organization. (Riverton Corp., 2008).

4. Zachman Framework (ZF)

ZF or Zachman Framework is a framework that has a classification scheme in the organization architecture arrangement, which has 6 (six) columns and 6 (six). in each column as a representative focus, abstraction, or topic of corporate architecture, namely: data, functions, networks, people, time, and motivation. Each line represents perspective, this can be seen in the image below:

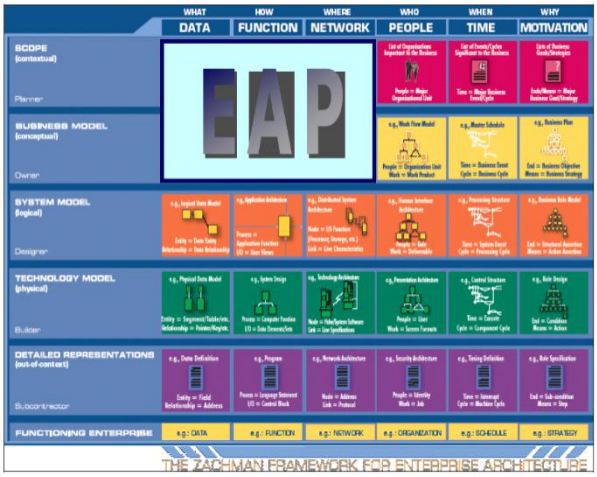

Fig. 1. Zachman Framework(ZF)

III. METHOD

Stages in the development of integrated information systems at XYZ Agency can be seen in Figure 2,

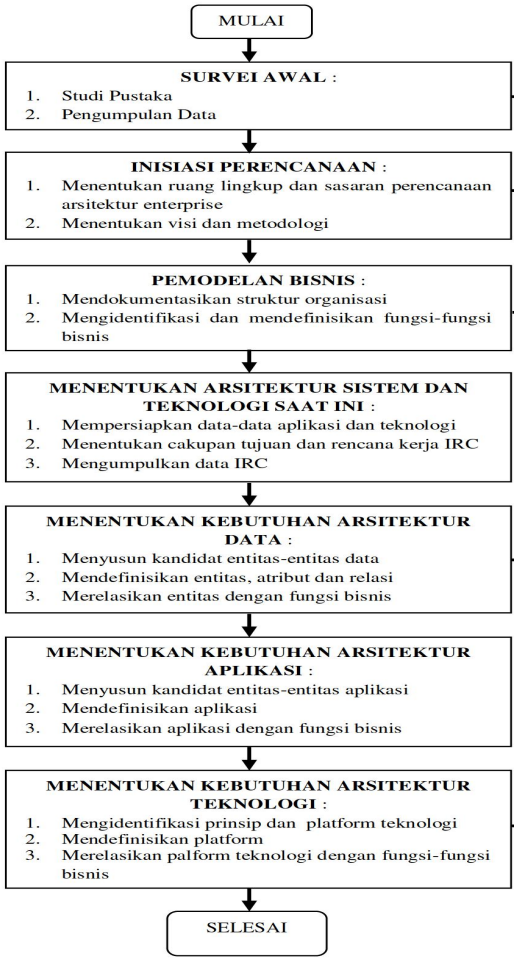

Fig. 2. Stages in the development of integrated information systems at XYZ Agency

while the Framework for thinking in the development of integrated information systems uses Enterprise Architecture Planning (EAP) with stages: Planning Initiation, Business Modeling, Systems and Technology at this time, Data Architecture, Application Architecture, Technology Architecture and Implementation Plan. can see in the picture below:

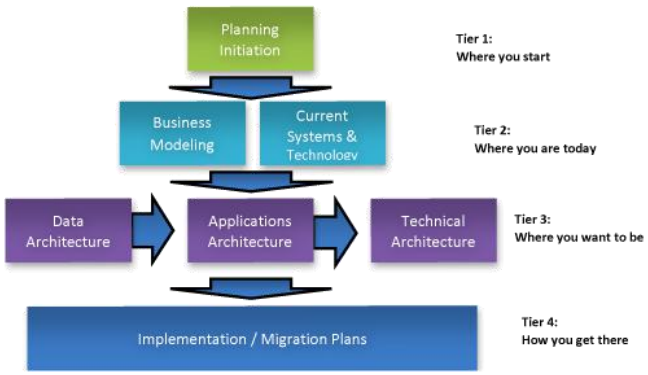

Fig. 3. Enterprise Architecture Planning(EAP) Components

IV. RESULT

1. Planning Initiation

The first stage in EAP can be described as follows:

a. Determination of the Scope and objectives of the EAP.

b. Determination and review of company vision

c. Use / Selection of Development Methodology

d. Determination of the resources that are being used

Based on the points above, we can start defining an organization's business processes.

2. Business Modeling

The second stage in EAP which consists of business modeling and technology today can be described as follows:

At the stage of business modeling consists of:

b. Identification of business processes and

at this stage in identifying the XYZ Agency business processes using the SWOT Analysis rules to determine the position of the organization compared to competitors. The output of this stage is the XYZ Agency positioning diagram, can be seen in the picture below:

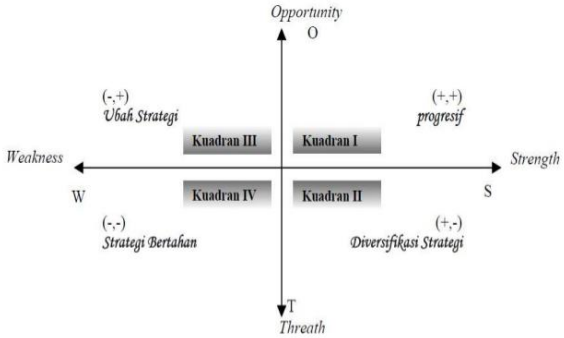

Fig. 3 SWOT Analysis Diagram

In this case XYZ Agency is in quadrant 3 which means minimizing weaknesses (W) to get opportunities (O)

b. Business Function Area

at this stage in identifying the business area XYZ Agency uses the Value Chain tool to describe the area of the organization's business functions, it can be seen in the picture below:

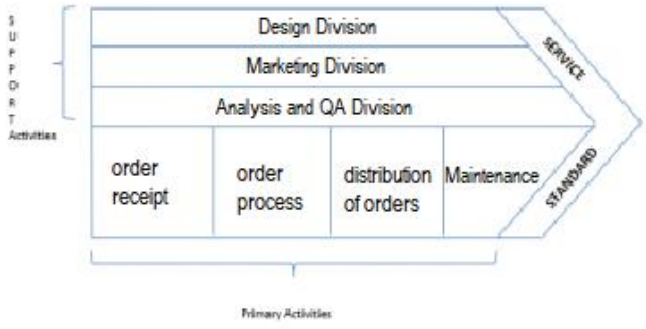

Fig. 4 XYZ Agency Value Chain

c. Current System & Technology

at this stage in identifying the current system the interview process and observation are carried out the results are in accordance with the table below:

Teknologi / Aplikasi	OS		Bahasa Pemrograman	Jaringan		Database	
	Win	Mac	PHP	LAN	Int	MySql	Postgres
Aplikasi Absensi	v	v	v	v		v	
Project Management Tools		v	v		v		v
SEO Tools	v	v	v		v		v

Table 1 Current System & Technology

3. Data Architecture.

Data architecture aims to define data that will be used to develop and build application architectures.

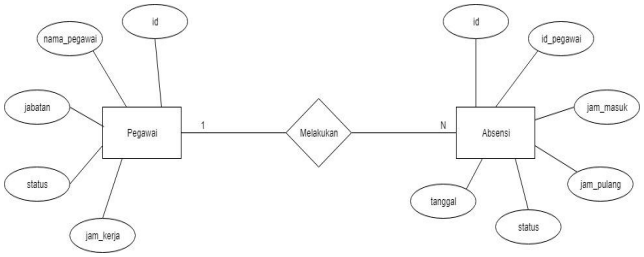

Fig. 5 The Presence of Diagram

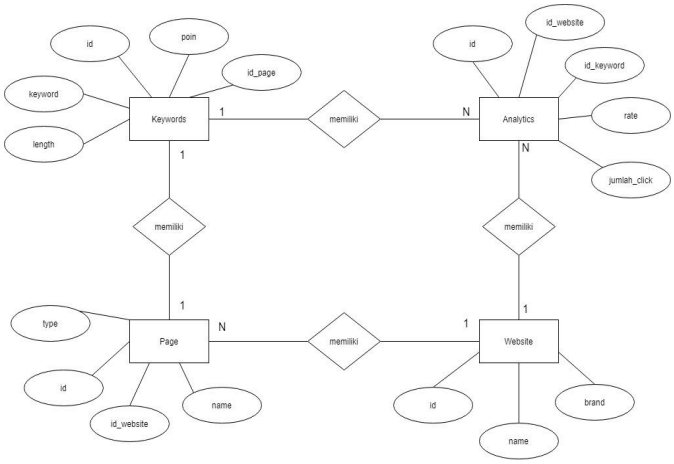

Fig. 5 SEO Diagram

4. Application Architecture

At the stage of Application Architecture, there are some things that need to be considered, including:

a. Candidate the application

b. The relationship between application and business functions

c. The relationship between application and organization

Fungsi Bisnis \ Aplikasi	Aplikasi Absensi	Project Management Tools	SEO Tools
Pembuatan Jadwal Kerja	U		
Penambahan Pegawai	U		
Penetapan Jadwal	C		
Proses Absensi	C		
Pembuatan Task		U	
Penetapan Task Pada Pegawai		C	
Penggantian status task		U	
Pembuatan timeline pekerjaan		C	
Penambahan keyword			U
Penambahan Website			C
Penambahan Page			U
Penetapan keyword untuk page			U
Proses pembuatan analytics			C
Generate laporan	C	C	C

Table 2 Relationship between application

and business function

5. Technologi Architecture

Technology architecture created to define the technology needed to be able to provide an environment for applications in data management. Same with the data and application architecture, technology architecture is also a conceptual model that defines the platform.

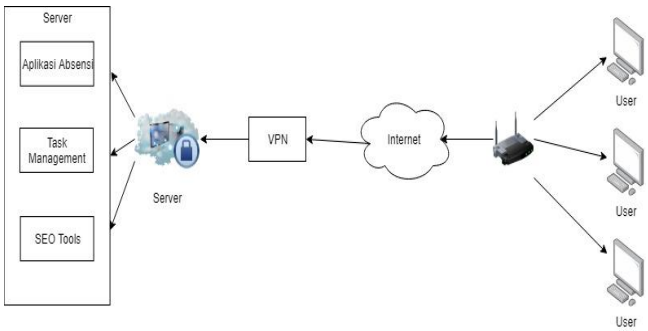

Fig. 6 Technologi Architecture

6. Implementation

The successful implementation of an integrated system much affected by many things, because it required the identification of a variety of things considered to be a determinant of successful implementation of this system, while the case in question include:

a. Strong commitment and involve various elements directly with consistent implementation, this will have a positive impact on the implementation of the system.

b. Implementation of implementation planning.

c. Development of SOP

d. The availability of adequate resources, technology and infrastructure.

e. Increase Insights, HR capabilities through various trainings that are followed.

V. CONCLUTION

Based on the description of each stage that has been implemented, the conclusions can be drawn, among others:

1. From the positioning of companies with competitors using swot analysis, it is found that XYZ Agency is in Quadrant III W of O, this is a guide in developing integrated information systems so that the development is harmonious and balanced, referring to W's business strategy towards O.
2. Implementation Plan produced can be used as a reference in the development of information systems at XYZ Agency with the aim of supporting the strategy and the needs of the Organization. This has a basis in data driven, where applications that have produced data are a priority to be developed in addition to other applications.

REFERENCES

[1] Alter, Steven., Information System(The Foundation of EBusiness), Prentice Hall, 2002.

[2] IBM, Business System Planning(Information System Planning Guide), International Business Machines Corporation, 1981.

[3] ICH Architecture Resource Center, http://www.ichnet.org/glossary.him, Maret-2008

[4] Jurnal Penelitian, Falahah dan Dewi Rosmala, Penerapan Framework Zachman Pada Arsitektur Pengelolaan Data

[5] Operasional (Studi Kasus SBU Aircraft Service , PT.Dirgantara Indonesia), Juni 2010.

[6] Jurnal Penelitian, Kuswardani Mutyarini, S.T, Dr. Ir. Jaka Sembiring, Arsitektur Sistem Informasi Untuk Institusi Perguruan Tinggi di Indonesia, Mei 2006.

[7] Porter, Michael E, (1985), Competitive Advantage : Creating and Sustaining Superior Performance for Analyzing Industries and Competitor, The Free Press.

[8] Prakash, G., Darbandi, M., Gafar, N., Jabarullah, N.H., & Jalali, M.R. (2019) A New Design of 2-Bit Universal Shift Register Using Rotated Majority Gate Based on Quantum-Dot Cellular Automata Technology, *International Journal of Theoretical Physics*, https://doi.org/10.1007/s10773-019-04181-w.

[9] Silberschatz Abraham, Korth Henry F, Sudarshan S., Database System Concept, Fourth Edition, The McGrawHill Companies, Inc., 2002.

[10] Spewak, Steven H., Enterprise Architecture Planning (Developing a Blueprint for Data, Application and Technology), Jhon Wiley & Sons,lnc.1992.

[11] Stephen A. White, Introduction to BPMN, IBM Corporation, http://www. bpmi. org/PR. esp ?id=301, 2004..

[12] U.S. Cencus Bureu, http://help.econ.cencus.gov/econhelp/glossary, Desember2007.

[13] Ward, John and Peppard, Joe., Strategic Planning for Information System, John Wiley & Sons, Inc., 2002.

[14] http://www.cio.gov.bc.ca/other/daf/IRM Gossary.htm, Electronic Industry Association, Maret 2008.

[15] http://www.rvcomp.com/wiring/EIA/glossary.htm, Maret 2008.

[16] University's Enterprise Architecture Design Using Enterprise Architecture Planning (EAP) Based on the Zachman's Framework Approach. H Supriadi, M Kom, E Amalia - International Journal of Higher Education, 2019

[17] Development of Enterprise Architecture in Senior High School Using TOGAF as Framewrok. H Supriyadi, E Amalia - Universal Journal of Educational Research, 2019

.