Strategic Information System Planning at RSUD Berkah Pandeglang Using the EAP (Enterprise Architecture Planning) Method

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KEYWORDS	ABSTRACT
Strategic Information, Enterprise Architecture Planning, Method	The intense competition in business development requires enterprises to innovate to assist in their business processes. One way to achieve success in innovation is by planning information systems and information technology that can meet business needs and align with current developments, using the Enterprise Architecture Planning (EAP) method. The results of the strategic information system planning include data architecture, application architecture, and network architecture. This research has produced a strategic planning document that can be used by RSUD BERKAH PANDEGLANG. This document contains data architecture, application architecture, and technology architecture.

1. Introduction

In today's business world, the application of information technology to determine a company's strategy is one of the most effective ways to improve business performance. The advancement of information technology in the business world demands that IT/IS management produces suitable information systems capable of supporting business activities.

Strategic planning is the process of selecting an organization's objectives, determining strategies, strategic programs, and methods needed to ensure that the strategies and policies have been implemented (Kaye & Allison, 2016). Strategic planning is a long-term process designed to achieve the organization's goals. Strategic planning is important because it provides a framework for other planning processes (Nugroho, 2010). It also facilitates the understanding of other planning forms. One form of strategic planning is strategic information system planning. Strategic information system planning is conducted so that an organization or company can identify the best targets for implementing an information system that helps maximize the return on investment in information technology (Pratama, 2019). An information system designed based on strategic information system planning will aid an organization in making decisions to implement its business plans (A Kadir, 2014; Abdul Kadir, 2014).

In conducting strategic information system planning, it is necessary to choose the framework or method to guide the planning process. There are several well-known frameworks and methods, including the Zachman Framework, TOGAF (The Open Group Architecture Framework), BSP (Business System Planning), Ward and Peppard method, Enterprise Architecture Planning (EAP), and many more (Irmayanti & Permana, 2018; Kustiyahningsih, 2013; Panjaitan, 2021). Each method and framework has its own advantages in planning. Among the various frameworks and methods, one that can be used is the Enterprise Architecture Planning (EAP) method (Amin & Mustaziri, 2015; Khumaidi, Suryana, & Ridhawati, 2016).

EAP involves planning activities related to defining data, applications, and technology. When mapped into the Zachman Framework, EAP falls into the first and second rows, which represent planning and ownership perspectives. EAP also differs from other strategic information system planning frameworks or methods in that it defines data before applications. This is done to identify what data is needed in the business and then define the applications required to manage that data (Nyoman Ayu Nila Dewi, 2013; Nyoman Ayu Dewi, Sinaga, & Rusdianto, 2015).

The development of information technology and information systems also influences business and enterprises, including hospitals. Hospitals can be considered enterprises since an enterprise is a collection of institutional tasks that support entities with common objectives (Aradea & Damacita, 2013). This applies to RSUD BERKAH PANDEGLANG, which operates in the healthcare sector. With increasing competition in the business environment, RSUD BERKAH PANDEGLANG needs a strategic information system planning to assist the hospital in its business processes and operational activities.

Currently, RSUD BERKAH PANDEGLANG has a business strategy in place to achieve its vision and mission. However, to ensure future success, RSUD BERKAH PANDEGLANG must have a more robust strategic planning process in place to achieve the company's goals.

2. Materials and Methods

EAP is an approach created by Steven H. Spewak to build enterprise architectures based on data drive and business drive. EAP is the process of defining architecture in the use of information to support business and plans to implement that architecture (Spewak, 1992). According to Steven H Spewak, it is stated that the use of the term architecture consists of data architecture, application architecture and technology architecture. The architecture here is like a blueprint, drawing or model. Basically EAP is not designing the business and its architecture, but defining the needs of the business and its architecture. All of these architectures are needed to support businesses hosted by enterprises (Achmadi & Narbuko, 2015). The word "define" in the Spewak sense is to define business and define architecture. So EAP is not a design but a definition. While the word "plan" in general is talking about the definition of what architecture is needed and the support plan is interpreted as when the architecture will be implemented (Spewak, 1992).
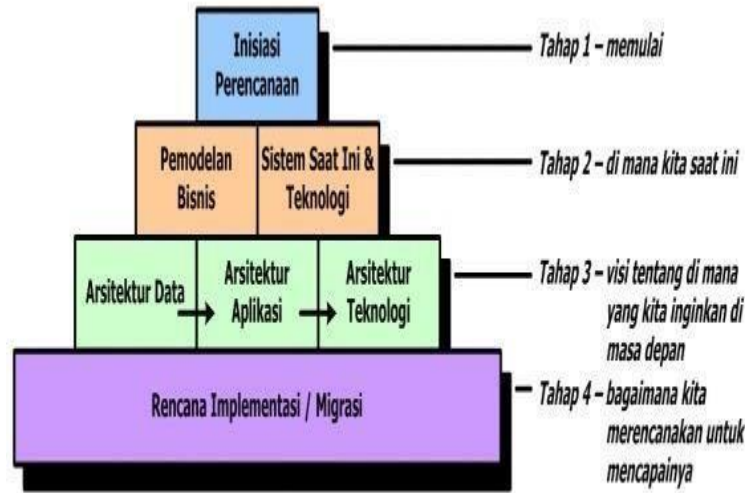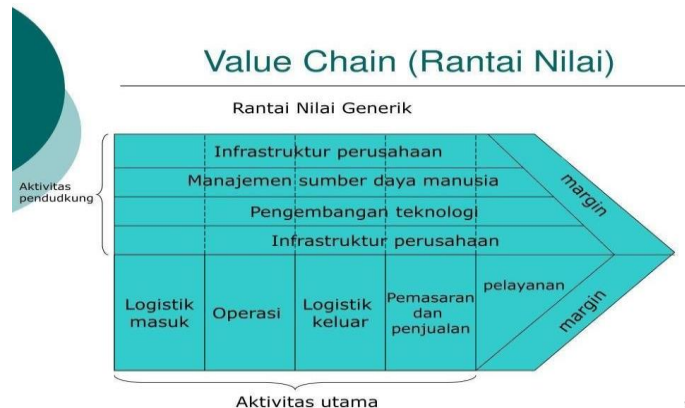
Figure 1 Enterprise Architecture Planning Layer (Kurniawan, 2015; SYAFITRI, n.d.)

Value Chain Analysis

The value chain analysis first proposed by Porter (1985) provides a framework for identifying and inventorying areas of business function, i.e. by grouping functional areas.

Gambar 2 Value chain

3. Results and Discussions

Planning Initialization

Planning initialization is the initial stage of the EAP methodology which includes defining the scope of the enterprise, determining the vision, mission, adopting the planning methodology and forming a planning team so that the EAP project is directed, completed on time and has qualified team members. This stage aims to develop information architecture carried out in accordance with the business run by the enterprise.

Business Function Identification

Identification of business functions based on EAP methodology is done by defining business areas using value chain models in creating enterprise business models. Value chains are created to identify and define business areas, and classify areas into primary business activities and support activities in the enterprise.
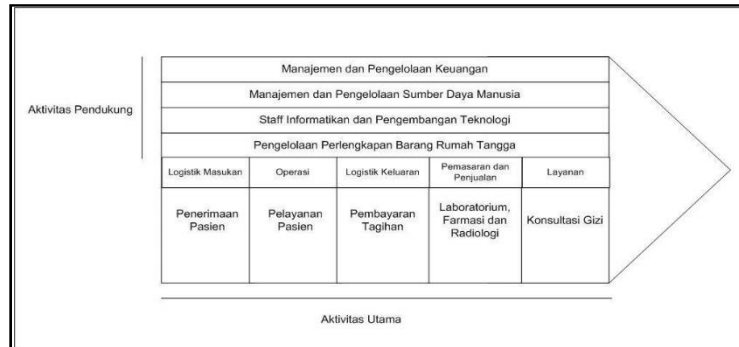

Figure 3.1.

Current Systems and Technology

1. RSUD Berkah Pandeglang uses 3 server computers with ± 50 client computers and is connected to LAN using UTP cable.
2. The information system at RSUD Berkah Pandeglang has 17 modules.
3. However, the most optimal use is done by using the Medical Record and Billing System modules/applications.
4. There is no integrated data processing between organizational units at RSUD Berkah Pandeglang.

Future Enterprise Plan Review

    A. Data Architecture

Entitas Bisnis	Entitas Data
Entitas Penerimaan Pasien	Entitas Pasien Entitas Dokter Entitas Jadwal Dokter Entitas Penjadwalan Entitas Pendaftaran
Entitas Pelayanan Pasien	Entitas Diagnosa
	Entitas Tindakan Entitas Resep Entitas Penyakit Entitas Rekam Medis Entitas Catatan Medis

	Entitas Rawat Inap Entitas Rawat Jalan Entitas IGD
Entitas Pembayaran Tagihan	Entitas Tagihan Entitas Tanggungan
Entitas Farmasi	Entitas Farmasi Apotek Entitas Stok Obat Entitas Penjualan Obat Entitas Penjualan Resep
Entitas Laboratorium	Entitas Pengujian Laboratorium Entitas Sampel Laboratorium Entitas Hasil Pengujian Laboratorium
Entitas Radiologi	Entitas Rontgen Entitas USG Entitas Hasil Radiologi
Entitas Konsultasi Gizi	Entitas Stok Makanan Entitas Catering Makanan Pasien Entitas Diet Pasien Entitas Konsultasi Gizi

B. Application Architect

Fungsi Bisnis	Grup Aplikasi	Kandidat Aplikasi
Penerimaan Pasien (1)	Penerimaan Pasien (1.1)	1. Aplikasi Pendaftaran Pasien 2. Aplikasi Penjadwalan Pasien 3. Aplikasi Jadwal Dokter 4. Aplikasi Antrian Pasien
Pelayanan Pasien (2)	Rekam Medis (2.1)	1. Aplikasi Diagnosa 2. Aplikasi Penyakit 3. Aplikasi Rekam Medis
	Rawat Jalan (2.2)	1. Aplikasi Rawat Jalan (RJ) 2. Aplikasi Monitoring Pasien RJ
	Rawat Inap (2.3)	1. Aplikasi Rawat Inap (RI) 2. Aplikasi Monitoring Rawat Inap 3. Aplikasi Kunjungan RI
	IGD (2.4)	1. Aplikasi IGD 2. Aplikasi Monitoring Pasien IGD 3. Aplikasi Kunjungan Pasien IGD
Pembayaran Tagihan (3)	Pembayaran (3.1)	1. Aplikasi *Billing* 2. Aplikasi Kasir
Farmasi, Laboratoriu	Farmasi (4.1)	1. Aplikasi Gudang Apotek 2. Aplikasi Farmasi Apotek

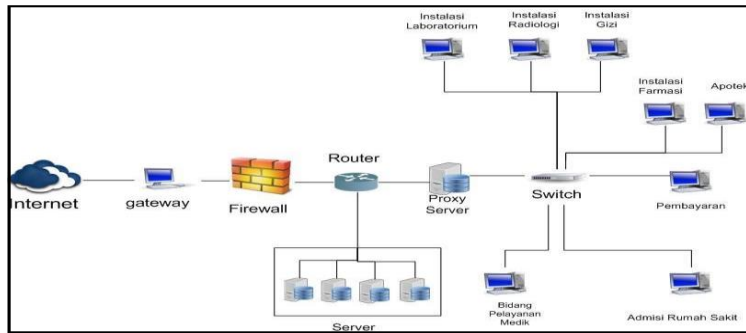| m dan Radiologi (4)	Laboratorium (4.2)	1. Aplikasi Laboratorium
	Radiologi (4.3)	1. Aplikasi Radiologi
Konsultasi Gizi (5)	Konsultasi Gizi (5.1)	1. Aplikasi Konsultasi Gizi 2. Aplikasi *Catering* Makanan Pasien 3. Aplikasi Stok Bahan Makanan

C. Technology Architecture

Figure 3.3

Implementation Plan

Strategic	High Potential
1. Aplikasi Pendaftaran Pasien 2. Aplikasi Penjadwalan Pasien 3. Aplikasi Jadwal Dokter 4. Aplikasi Antrian Pasien 5. Aplikasi Diagnosa 6. Aplikasi Penyakit 7. Aplikasi Rekam Medis 8. Aplikasi Monitoring Rawat Jalan 9. Aplikasi Monitoring Rawat Inap 10. Aplikasi Kunjungan Rawat Inap 11. Aplikasi IGD 12. Aplikasi Monitoring IGD 13. Aplikasi Kunjungan IGD	1. Aplikasi Gudang Apotek 2. Aplikasi Farmasi Apotek 3. Aplikasi Laboratorium 4. Aplikasi Radiologi
Key Operations	**Supporter**

1. Aplikasi Billing	1. Aplikasi Konsultasi Gizi
2. Aplikasi Kasir	2. Aplikasi *Catering* Makanan Pasien
3. Aplikasi Rawat Jalan	3. Aplikasi Stok Bahan Makanan
4. Aplikasi Rawat Inap	

4. Conclusion

Based on the discussion and results in this study, the following conclusions can be drawn: Strategic planning of information systems at RSUD Berkah Pandeglang is prepared using the EAP Method. EAP has 7 (seven) main components, namely initiation of planning, business modeling, current systems and technology, data architecture, application architecture, technology architecture and implementation plan. The enterprise *architecture model* that has been produced can be used as a first step to achieve the target, it can be used as a guideline so that the policy direction in developing information systems becomes more directed.

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