

# THE EMPLEMENTATION OF ENTERPRISE ARCHITECTURE PLANNING (EAP) MODEL FOR INFORMATION SYSTEM DEVELOPMENT AT HUMAN RESOURCE DEPARTMENT

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## ABSTRACT

Investment failure in the field of information technology to improve the company performance mostly happens because the planning is maximal. One method to overcome this investment failure is by developing a planning process of information system development, consisting of data architecture, application architecture, and architecture.

The method used in constructing the enterprise architecture model is Enterprise Architecture Planning (EAP). EAP explains about data, application, and technology which will be required to support the business process at the Human Resource (SDM) bureau where it will be able to produce a blueprint for data architecture, application and technology as well as the plan implementation aimed at providing the needs with sustainable detail level in applying the idea of the system built.

In architecture EAP explains about data, application and technology to be used to support the business process at Human Resource bureau where it will produce a blueprint for data architecture, application and technology as well as implementation plans aimed at providing the needs with the sustainable detail level in applying the idea to build the system.

The construction of the enterprise architecture model of SDM bureau at IBI Darmajaya is limited on employee

affairs and not focused on the application or technical design.

**KEY WORDS** : EAP, Enterprise Architecture

## 1. INTRODUCTION

**Background of the Problem** Human Resources bureau in an institution is a vital organizational asset; its existence therefore cannot be replaced by another resource. Indeed, how little information in an enterprise is valuable in a decision making process by the leader.

Realizing the importance of information system role in an organization, prior to applying it, it is necessary to do the enterprise architecture development based on vision an mission as well as a base in the development of information system, so it finally can measure the process and the result of the implementation.

IBI Darmajaya, one of educational institutions, should have a design of information system development at SDM bureau that supports the service activities for either employees or stakeholders to reach vision and mission of the organization and the organizational goal. Based on the explanation above, it is important to construct an enterprise architecture model from existing business components at IBI Darmajaya to promote an integrated information system.

### 1.1. Limitation of the Problem

In the research the problems are limited as follows:

1. It will only discuss the construction design of blueprint, instead of implementation phases.
2. Model to be constructed is enterprise architecture model using enterprise architecture planning methods as follows:
  - a. Data Architecture Model
  - b. Application Architecture Model
  - c. Technology Architecture Model

### 1.3. Objectives

The main objective expected in the research is to construct a conceptual model of enterprise information architecture to support an integrated information system specifically in SDM bureau so that it can be used a standard in determining planning and development at SDM bureau at IBI Darmajaya.

## 2. LITERATURE REVIEW

### 2.1 Enterprise Architecture

*Enterprise architecture* is a description of stakeholder mission in which it includes information, functions /uses, location,

Organization and performance parameter. Enterprise architecture describes a plan to develop a system or a collection of systems (Osvalds, 2001).

### 2.2 Enterprise Architecture Planning (EAP)

*Enterprise Architecture Planning*(EAP), is a method used to construct an information architecture. According to Steven H. Spewak,

Enterprise Architecture Planning is a method of data quality planning approach oriented to business needs and also how the implementation of architecture is done such

a way to support the business cycle and to reach the vision of information system and organization.

Basically, *EAP* does not design business and architecture. In EAP, the architecture explains about data, application, and technology required to support the organizational business. Related to the explanation above, Steven H Spewak states that the term *architecture* consists of data architecture, application architecture, and technology architecture. In this case, *architecture* means *blueprint*, description, or model

The components of EAP methods, according to Spewak, use a base of two layers from John Zachman framework i.e. Ballpark and Owner's review phases. The EAP result is the highest level blueprint for data, application, and technology for overall enterprises to be used at the design process and the next application.

## 3. RESEARCH METHOD

The approach used to analyze enterprise is *Enterprise Architecture Planning (EAP)* approach at the level of data architecture, application architecture, and technology architecture as integrated application supports as well as an application plan of enterprise architecture.

The enterprise analysis done is an initial application to use EAP components, i.e. a design initiation as an initial phase in the development of architecture model. This phase is very important, because in this phase the scope and design of activities or work plans are defined.

The approach method used in planning a information system architecture and information technology at SDM bureau of IBI Darmajaya is in accordance with the explanation previously mentioned on aa approach method,

i.e. *Architecture Planning Methodology*, consisting of four phases as follows:

1. *Planning Initiation*
2. *Business Modelling and Current Technology*
3. *Data Architecture, Application Architecture and Technology Architecture*
4. *Implementation*

## 4. RESULT AND DISCUSSION

### 4.1 Data Architecture

Data architecture defined, in this case, a definition of data usage to be used in the application architecture that will be delivered at this phase suitable with EAP phases in data architecture, they are as follows:

1. A list of entity candidates
2. Entity definition, attribute and relation.

#### 4.1.1 List of Entity Candidates

Entity candidates are entities that will be parts of enterprise architecture planning, so the determination can be based on the condition of main business function at value chain that has been previously defined. Therefore, the entities to be defined are business entities that will be defined as data entities. According to the condition of value chain, the list of business entities can be identified as follows:

1. Employee Recruitment Entity
2. Employee Affairs Operational Entity
3. Employee Dismissal Entity
4. PLPP Entity
5. Finance Entity
6. ICT-Center Entity

#### 4.1.2 Definition of Entity, Attribute and Relation

To describe relationship between entities, the description of conceptual relation will use E-R diagram. E-R diagram for Human Resources is a logic data conceptual model indicating relationship among entities in SDM bureau of IBI Darmajaya.

### 4.2 Application Architecture

Application architecture to be identified is used to help the main business function of the organization. It will be done to define application needed by the organization, they are as follows:

1. Determining candidate application
2. Connecting the application with the business function that has been defined.
3. Connecting the application with the organizational units at IBI Darmajaya.

#### 4.2.1 Determining Application Candidates

To define application candidates, it will use *Four Stage Life Cycle* as a tool for predicting needs for this application. From stewardship decomposition it can be seen what applications have to be constructed to help the main business process to meet the organizational needs at IBI Darmajayain fulfilling Human Resources Information.

Based on what is obtained from *four stage life cycle* at *stewardship* part with the reference in table 3.1 about *four stage life cycle* for supporting business function of Teaching Report Center Management (PLPP) dan Financial management that will be an object of this research, so from the decomposition it can be seen what application to be constructed to help the main business process to fulfill the organizational needs of SDM bureau of IBI Darmajayain fulfilling the needs of employee affairs information.

## 5. CONCLUSION AND SUGGESTION

### 5.1 Conclusion

After finishing a series of research phases, the writer can conclude that:

1. The main business modeling described in *value chain*, has a main activity i.e. employee recruitment, employee operational and employee dismissal.
2. Enterprise architecture Model using *Enterprise Architecture Planning* (EAP) can be used as a reference to determine planning and development of information system at SDM bureau of IBI Darmajaya Bandar Lampung.
3. Based on the result of definition to enterprise architecture at SDM bureau and suited to the limitation of the problem, there are 17 data entities and 14 application supplements.

### 5.2 Suggestion

Based on the result of research discussion, there are some suggestions, they are as follows:

1. For the integrated development needs of the system at employee affairs of SDM bureau of IBI Darmajaya, it should involve relevant departments related to IT so that the system development will be better planned and accomplished.
2. There should be efforts for documenting all information systems, either the existing ones or to-be constructed ones in order that the human resource information will be well organized.

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