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The First International Conference on Engineering and Technology Development (ICETD 2012)
Faculty of Engineering and Faculty of Computer Science, Universitas Bandar Lampung

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PREFACE

The activities of the International Conference is in line and very appropriate with the vision and mission of the UBL to promote training and education as well as research in these areas.

On behave of the First International Conference of Engineering and Technology Development (ICETD 2012) organizing committee; we are very pleased with the very good responses especially from the keynote speakers and from the participants. It is noteworthy to point out that about 45 technical papers were received for this conference

The participants of conference come from many well known universitas, among others: Universitas Bandar Lampung, International Islamic University Malaysia, University Malaysia Trengganu, Nanyang Technological University, Curtin University of Technology Australia, University Putra Malaysia, Jamal Mohamed College India, ITB, Mercu Buana University, National University Malaysia, Surya Institute Jakarta, Diponogoro University, Unila, Universitas Malahayati, University Pelita Harapan, STIMIK Kristen Newmann, BPPT Lampung, Nurtanio University Bandung, STIMIK Tarakanita, University Sultan Ageng Tirtayasa, and Pelita Bangsa.

I would like to express my deepest gratitude to the International Advisory Board members, sponsors and also welcome to all keynote speakers and all participants. I am also grateful to all organizing committee and all of the reviewers which contribute to the high standard of the conference. Also I would like to express my deepest gratitude to the Rector which give us endless support to these activities, such that the conference can be administrated on time.

Bandar Lampung, 20 Juni 2012

Mustofa Usman, Ph.D
ICETD Chairman

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Implementing Information Technology, Information System And Its Application In Making The Blue Print for The One Stop Permission Services

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Abstract—**A complexity growing enterprise make the management in a bigger demanding to the IS function. They need access to the data anytime and anywhere easily, accurately and consistently in all departments. IS is encouraged to get the changes of business condition faster, and can act the data sharing within every department.**

The problem in using the support from IT, the investment for the IT and Information System (IS) are often in a wrong direction and decreasing of the strategy in IT and IS are often different from the enterprise business strategy. It is happened because the development of the IS, done without making the enterprise blue print first as the foundation for the development of the IS. So with the complexity of the enterprise development forces the enterprise to make continue customization to the building IS which of course need much financial support. IS duplication, no IS integration among them, and the difference platform among every IS; also become the failure factor an enterprise to get the optimal benefit from the using of IT and IS.

Because of that, a blue print from the enterprise becomes something very important to be built as a foundation of the using IT and IS. The development architecture can be done in the beginning enterprise was shaped or even in the time where the enterprise is being run.

Enterprise Architecture Planning (EAP) is a modern approach to do the planning for the data quality to achieve the IS mission. EAP is also a process of definition of some architecture such as data architecture, application architecture in using the information to support the business. The blue print, resulted together with EAP then can be used as the foundation in the IS development, by this we hope the IS which has been build can be adjusted with business strategy from the office of PPTSP so that the mission can be achieved from this publik services.

Keywords— **Blue print, Enterprise Architecture Planning (EAP).**

1. INTRODUCTION

A complexity growing enterprise make the management in a bigger demanding to the IS function. They need access to the data anytime and anywhere easily, accurately and consistently in all departments. IS is encouraged to get the changes of business condition faster, and can act the data sharing within every department.

One Stop Solution Permission Solution (OSPS) is the implementation of having the permit or not, which its arrangement process starts from the level of applying up until the level of the issues of all the documents at one place. The changes of having this system needs the adjustment process, such as building the organization business process, summarizing the local regulation, designing infra structure and information technology, designing information system, and building the organization units and facilities. By using the Information Technology (IT) to implement the services, we hope, it can be a tool to help its speedy in achieving the goals in OSPS.

The problem in using the support from IT, the investment for the IT and Information System (IS) are often in a wrong direction and decreasing of the strategy in IT and IS are often different from the enterprise business strategy. It is happened because the development of the IS, done without making the enterprise blue print first as the foundation for the development of the IS. So with the complexity of the enterprise development forces the enterprise to make continue customization to the building IS which of course need much financial support. IS duplication, no IS integration among them, and the difference platform among every IS; also become the failure factor an enterprise to get the optimal benefit from the using of IT and IS.

A complexity growing enterprise make the management in a bigger demanding to the IS function. They need access to the data anytime and anywhere easily, accurately and consistently in all departments. IS is encouraged to get the changes of business condition faster, and can act the data sharing within every department. Because of that, a blue print from the enterprise becomes something very important to be built as a foundation of the using IT and IS. The development architecture can be done in the beginning enterprise was shaped or even in the time where the enterprise is being run.

2. GLOSSARY OF TERMS

2.1 Architecture Enterprise/ Enterprise Architecture

Enterprise Architecture (EA) is a process that leads to the development, implementation, maintenance, and the use of a blue print which explains how an IT element interact with the

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business and strategy function for the fulfillment of the organization's mission. These holistic efforts that consider business organization, information, and the working flow [1.]

EA in the strategic technology planning can give us the benefit from the business side of the organization, not only in one technology side. There are some reasons why an enterprise takes an initiative to develop ea. Some of the reasons can be said as a hope or wish that it can only be achieved from the success of the ea implementation in the enterprise. All the reasons are [3]

Coherency – to make sure that enterprise architecture which was built coherence with the needs of management.

Integration – realize that a role of a business consistent to the organization, all the data and the function are fix, between the performance and the information flow standard, the connection and the operational capability are managed accurately by the enterprise.Changes- facilitate and manage every changes from the enterprise

Marketing time – reduce the system building, application generation, and the need of resources.

Convergence – try to produce a standard it product portfolio like in the contents of technical reference model (TRM)

2.2 Zahman Framework

Zahman Framework (ZF) The framework for Enterprise Architecture is a scheme of 2 (two) dimension classification to represent a description of an Enterprise. We can get this through the observation of many kinds physical object (Fig. 1).

Fig 1..Zachman Framework for Arsitektur *Enterprise*

ZF consists of 6 (six) column and 5 (five) row. Every column represents focus, abstraction, or Enterprise Architecture topic, such as: data (or what), function (or how), network (or where), man (or who), time (or when), and motivation (or why). Every raw represents perspective such as [14] :

Planner Perspective (first line): consists of declaring the context, back ground, and the purpose of enterprise.

Owner Perspective (second line): setting conceptual models of Enterprise.

Designer Perspective (third row): setting the models of the information system and also as a bridge and mediator for the things that can be realizable technically and physically.

Builder Perspective (fourth row): setting the physical and technical design to be used in supervises physical and technical implementation.

Subcontractor Perspective (fifth row): setting the rule and recommendation for the authoritative to do the development technically and physically and also to prepare the necessary components.

Functioning Enterprise Perspective (sixth row): represent the perspective of the useful and the reality implementation result.

The meeting between rows and columns is a cell that consists of enterprise artifacts according to rows and columns definition.

2.3 Enterprise Architecture Planning(EAP)

EAP process is used to consider of 2 (two) the higher level from EAP and produce the data, application, and the high level blue print technology and also effective in the expanses, long term solution. EAP determines the blue print for the next implementation and design and puts all the level of planning / determination become as one Framework.

There are three important words in the above EAP. The first is architectures delivers 3 architecture there are; data architecture, application architecture and a technology architecture. Architectures are like blueprints drawings, or models. In EAP, architectures define and describe like data, applications, and technology need to support the business.The second important word is defining. EAP defines the business and defines the architectures. EAP is defining, not designing. EAP does not design systems, design databases, ornetworks. The design and implementation work is initiated after the EAP definition process has been completed. The third important word is plan. Generally speaking, the architectures define what is needed, and the supporting plan defines when the architectures will be implemented [14].

EAP defines the blueprint for subsequent design and implementation and it places the planning/defining stages into a framework. It does not explain how to define the top two rows of the Zachman Framework in detail but for the sake of the planning exercise, abbreviates the analysis. The Zachman Framework provides the broad context for the description of the architecture layers, while EAP focuses on planning and managing the process of establishing the business alignment of the architectures. [14]

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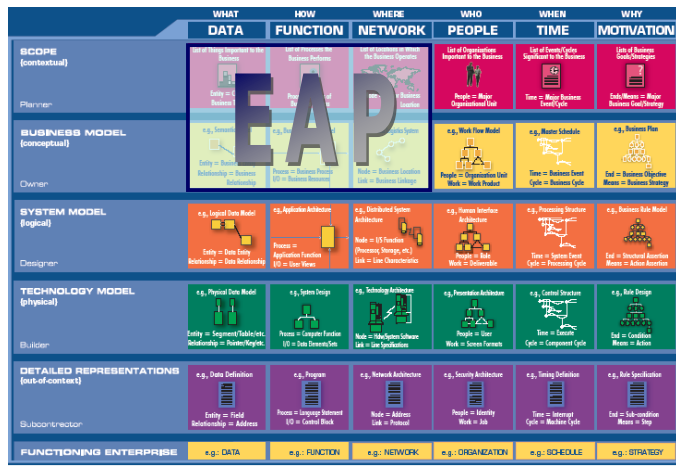
Fig 2..EAP in Zachman Framework

There are a number of benefits gained by EAP [14] :

a. Focus is on strategic use of technology for managing data as an asset.
b. Standard vocabulary facilitates cornmunication and reduces inconsistency and data redundancy.
c. Documentation increases understanding of the business.
d. Models can be used to explain the business and assess the impact of business changes.
e. Decision-making policies may be reviewed.
f. It considers integration of current systems with new.
g. It allows for a comprehensive, objective, and impartial approach.
h. The long-range systems plan complements the business plan.
i. A cost-effective, long-term solution considers rate of return.
j. It involves a feasible migration strategy with short-term achievements.
k. It is easier to assess the benefits and impact of new systems and software.
l. It allows easier acummodation of dynamic business changes such as mergers, acquisitions, new products, lines of business, and so on.
m. Management participation provides a business perspective, credibility, confidence, and demystifies systems development.

2.4 Components of Enterprise Architecture Planning

EAP represented the seven component though different names or terms may be use. These component are in the shape of a layeres, with each layer representing a different focus of task.

Layer 1-Where We Start
Planning Initiation. Starting EAP on the right track, including which methodology to use, who should be involved, and what toolset to use. This leads to producing a work plan for EAP an securing the management commitment to go through the following six phases.
Layer 2-Where We Are Today

Business Modeling: Compiles a knowledge base about the business and the information used in conducting the business. Current Systems & Technology : Defines what is in place te day for application systems and supporting technology plat forms. This is a summary level inventory of application systems data, and technology platforms to provide a baseline for long range migration plans.

Layer 3-Where We Want to Be an the Future
Data Architecture : Defines the major kinds of data needed to support v the business.
Applications Architecture :Defines the major kinds application needed to manage that data and support the business function.
Technology Architecture: Defines the technology platform needed to provide an environment for the applications that manage the data and support the business functions.

Layer 4-How We Get There
Implementation/Migration Plans : Defines the sequence fo implementing application, a schedule for implementation, a cost/benefit analysis, and popposes a clear path for migrating from where we are today to where we want to be.
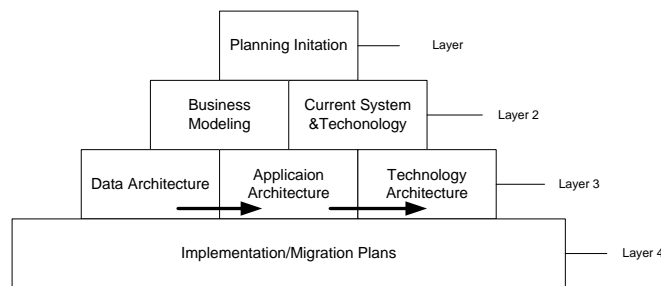
Fig 3..Components of Enterprise Architecture

3. ARCHITECTURE ENTERPRISE OSPS PLANNING

3.1 The initialization for the EAP

The initialization for the EAP is acted by determining the main goal, to create the Enterprise Architecture for the organization. The use of this Architecture is to determine the Information System which will be develop in the One Stop Permission Services as the generic blue print for the District and Region Government to implement OSPS.

3.2 Business Model

The purpose of this business model for EAP is to develop an enterprise understanding that will give the possibility to build a good architecture and planning. In one enterprise to be understood easily, there are some complexes parts that need more information compare with others.

Local Government as the executor in the OSPS according to guideline procedure OSPS can be as a biro, office or unit.

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The shaping of this organization according to the consideration of:

the government authorization, owned by local government local characteristic, potential, and the need;local finance capability;readiness in human resources;the working pattern development among local and/or third player

1. The External Value Analysis Chain

The implementation of One Stop Permission Services is an activity that implements the permitted and non permitted, with its operating begin from the step of application to the step of issuing the document done in one place. From the Permit Biro flow chart above, the consument as the recipient and implement of the regulation and policy in the organization, local or central government in a set of regulation and rules. From the above (receive and implement the rules) and below (implementation permitted services), we have entities:

Local and Central Government: Local government as the one that implement central government authority has its own local autonomy authorization set up some rules as follows:

Its biro connection: Before Permitted section sets up, the permitted implementation done at the biro itself. OSPS periodically gives the report of every permitted that has been issued so that every biro connected and can get the latest information about the issued data permit.

Technical Team: This time with OSPS, each biro sends their representation as the person in Technical Team, has the task and responsibility to check and observe directly whether they will issue the permitted or not.

Evaluation Team: The evaluation is done step by step or in its participation by: Home Affairs Minister and the Governor and also by Province/Region/District Leaders, internal evaluating function such as Biro/Division/Office Leaders.

Advisor Team: Advisory and actuating function is done step by step or in its participation by: Home Affairs Minister and the Governor, and for technical advisory is done by the leader of that biro.

People (applicant): People as the client and consument of this Division Permit whose ask the permitted. They also can send complain to the Biro Permit in the implementation of this permit services.

Bank/ Cashier: The Payment of the retribution expenses can be done in a bank or Cashier. We separate the payment process and services point.

The external value analysis chain identifies business entities and also bind all the relation between one entities with another entities through the production flow, services and or all the information that give external environment Permit Biro.

The result of the external value analysis chain helps to identify the function areas in the value chain. Beside that, the external value chain also can be used to identify data entities and applications that we need to develop partnership relationship and to achieve the best competitive or good governance. The Value Analysis Chain identification of external value chain performed in Fig. IV.
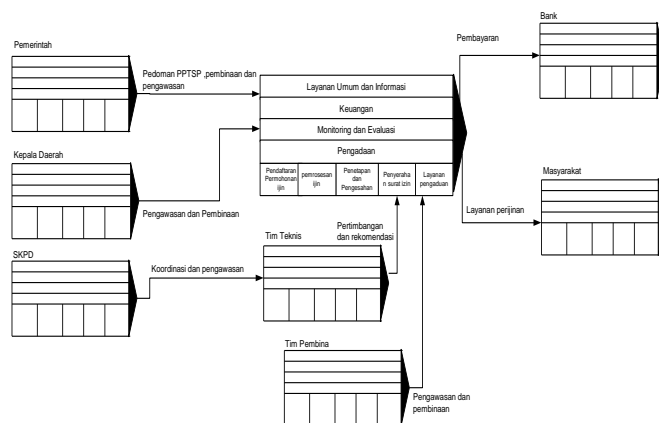

Fig 4..ExternalValue Analysis Chain

2. Internal Value Chain Analysis Permit Biro

Identify all business entities in every internal value chain function in the Permit Biro, identified by using the grouping as what Porter has been suggested. By observing the design result of setting the Permit Biro, according to the OSPS guideline then every main functions area in the Permit Biro is identified its entities business. Identification the main area function uses the "value-added" concept from Michael Porter. The concept of "value-added" from Michael Porter gives an understanding to the conclusion in answering the question that every main function area from the enterprise has the significant effect to all the company advantages.

3.3 Data Architecture

Data Architecture identifies and defines many main data that consist of enterprise business. Just as a blue print, Data Architecture also can change in the line of detail design specification to implement the data basis and application to improve the understanding about the fundamental business concept.

Data Architecture has three advantages as follow:

a. Prepare the standard glossary to identify, definition, and naming the kind of main data to support the business.

b. Used in the setting the needs of application system and identified to manage a group of entities data.

c. Relationship between Data Architecture and portfolio application as a basic to make the sequence of the application implementation.

Data Architecture is used to OSSS main business function (Fig. VI . ER-D)

3.4 Application Architecture

Application Architecture does not a specific application, but it is a high level description about the ability and the advantages of all the application in supporting the business. Application Architecture also identifies business function, which is supported by application, creating/renewing /reading data that can be applicable, and the effect of the existence application.Just as a blue print, Application Architecture can

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be also change in the line of the development of detail design specification as long as in the process of the identified application implementation.

The purpose of Application Architecture is to identify all the application that can prepare the data to businessfunction in the purpose of achieving the organization goal. All application mean to:

1. Improving business productivity and affectivities.
2. Prepare a better strategies compare other competitor
3. Manage the data or execute the business function

Relation betweeen aplication and and function performed in Fig.6.

TABLE I.
CANDIDAT APLICATION OF OSPS

No	Application Name
1	Registration
2	Processing application
3	Reattribution computation
4	Implementation and agreement
5	issuing the permitted letter
6	Payment
7	Complaining services
8	Information services
9	Trace and tracking
10	Development system
11	Human resources development
12	Finger print
13	Finance
14	Recruiting

3.5 Technology Architecture

The purpose of making the Technology Architecture is to identify many kinds of the main technology needs to prepare the environment for the application that manages the data. Technology Architecture does not a detail business analysis or designing a software computer network enterprise. Technology Architecture defines many technologies – according to the platform – which will support the business with the data changes environment. Technology Architecture correlates in the sight of the Owner (second row) from the Column Network in the Frame Work Zahman for Information System Architecture.
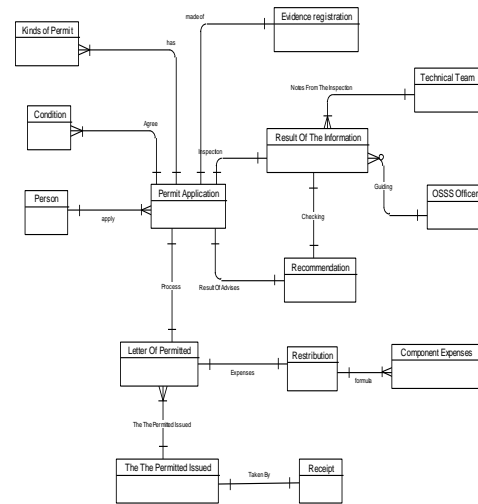

Fig5. ERD.

3.5.1 The Platform and Technology Principles

The Technology and Platform Principle is to examine the trend and the development of the technology, included in it are about Computer, Communication and Network Tools, Safety Media, The Soft Ware, In and Out Tools and etcetera. The information about Trend Technology can be achieved through Literature Study, Consultation with the IT Consultant, or some other ways. The using of Technology and Platform is as different part of the vendor.

The main technology which will be used in supporting the implementation of the application depends on the situation and condition of the Government District/Region. Some consideration factors are about the availability of the geographical, budget, Social Geographic Mapping and the infrastructure. Conceptual Network for OSPS permormed in Fig.5
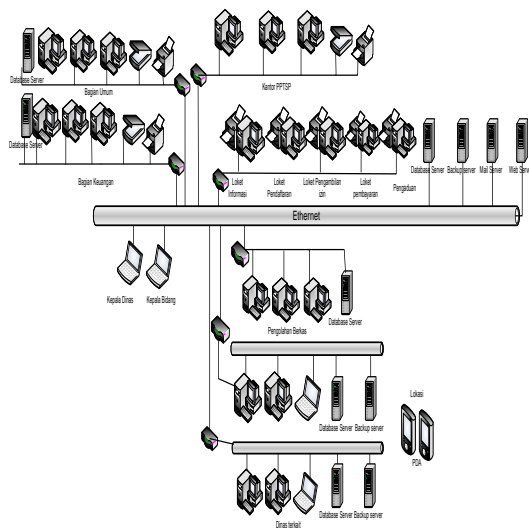

Fig.6. Conceptual Network for OSPS

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TABLE. 2.
RELATION BETWEEN APLICATION AND FUNCTION

Application Name / Function	1.1.Arranging the technical planning of the registration services program	1.2.Summarization of the technical registration system	1.3.Arranging the technical direction of the registration	1.4.Pengkoordinasian kegiatan pendaftaran dengan unit kerja terkait	1.5.Coordinating the registration with the some special units	2.Pemeriksaan berkas dan persyaratan	3.Giving the Application Form	1.6.Pelaksanaan kegiatan pengendalian dan pengawasan pendaftaran	1.7.Checking the form and its condition
Registration Aplication	□	□	□	□	□	□	□	□	□
Processing Application									
Reatribution Computation Application									
Implementation and Agreement Application									
Issuing the permitted letter Application									
Payment Application									
Complaining Services Application									
Information Services Application									
Trace and Tracking Application									
Development system Application									
Human Resources Development Application									
Finger Print Application									
Retribution Payment Application									
Finance Application									
Recruiting Application									

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