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**iiWAS2009**

**The 11<sup>th</sup> International Conference on  
Information Integration and Web-based  
Applications & Services**



December 14 - 16, 2009  
Kuala Lumpur, Malaysia



Association for  
Computing Machinery

# Integrated SIMDA as Incubator for Cyber Province

(Case Study : E-government Initiative in West Java Province)

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## ABSTRACT

The e-government initiatives in Indonesia has been increased for the last 2-3 years, and deal with many constraints of e-government implementation. One of this initiatives is how to develop a program called "e-government incubator", and implementing the application 'Integrated SIMDA' (Sistem Informasi Daerah) as part of program that would support the "e-government incubator" activity.

This paper will describe the background, basic idea, content design and approach in development and implementation of Integrated SIMDA, as a case of e-government initiatives in West Java Province Indonesia. The main idea of Integrated SIMDA is to prepare a tool for facilitate collecting and disseminating information from the basic level of society, in this case, from sub district (kecamatan). Main issue in government performance evaluation was chosen to define the priority of information requirement that should deliver by the system, especially how the system can provide sufficient information to calculate Human Development Index.

Integrated SIMDA was not expected as perfect solution, but it just an embryo for extended and larger system to integrate all required information. To support this purpose, the approach of "growing house" was selected as strategy for development content and features, and implementation the system. This approach was chosen because the user need flexible way to modify and customize the application based on localized requirement. At implementation stage, the government has a plan to build mutual partnership with local university/academy in providing the competent human resource as initiator and facilitator for end user.

## Categories and Subject Descriptors

K.6.0 [Computing Milieux] : Management of Computing and Information System, General, Economics

## General Terms

eGovernment, Management, development strategy, implementation approach. Cyber Province.

## Keywords

Integrated, architecture, e-government initiative, incubator, growing house, CMS, human development index

## 1. INTRODUCTION

The term of e-government has frequently directed us to some main issue such as citizenship, online e-democracy, virtual community and so on. This issue has been increased according the fast growth of ICT in all over the world. Some countries have implemented e-government successfully for services their citizens. The successful implementation of e-government then has significant criteria in measuring performance good quality services to the citizens.

This paper will discuss the case of e-government project initiative at West Java Province, Indonesia, specifically on creating the draft of integrating information system which called SIMDA. This system has expected to solve the mass reporting problem from sub district (kecamatan) or government agency, to central district government (province) that has frequently documented in some unformatted and non-standard procedure. As the result, it will not easy for central data collector, at this case, ICT Agents, to provide the required information from current government official to support the decision process.

West Java, as one of most dynamic province in Indonesia, has a visionary program called "Jabar Cyber Province 2012". The year 2012 has established according to current government program period that will be end at 2012. This program include some initiative to bridge the information gap on digital divide citizens, and this program already approved and supported by current government and some stake holders such as Indonesian Telecommunication agency which provide the communication infrastructure and University/academy to support the human resources needs.

To realize this program, local ICT agent has proposed some activities in a program "e-government incubator". This program contains some sub program to accelerate the main objective. The basic idea of e-government incubator is to provide the facility to expand the use of ICT in social community, and make these people more familiar with ICT. To realize this program, the government will choose some potential sub district in West Java as pilot location to implement the system called SIMDA. The sub district will have obligation to fulfill information required from all line resource. The system also will become the main portal for citizens to access and share information both between citizens and between citizen and central government. Indonesian Telecommunication agency then will provide the infrastructure, such as line of connection, data transmission facility and PC to access the content in each sub district office.

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SIMDA (Sistem Informasi Manajemen Daerah), is a system that will provide information about each district in a province, from general information such as demography, local area profile, the government staff, until specific economic potential from each districts. To keep updating and facilitating the required information for citizen and government, this system needs to be integrated. Some activities on integration process including data collecting, processing and disseminating to all stake holders. The application itself will be a part of blueprint ICT infrastructure on Jabar Cyber Province 2012's program, or, as it was expected, an incubator for developing e-government in West Java Province, Indonesia.

Recently, West Java government has implemented some information systems which mainly support the government's office. The system was built not integrated each other and not based on well planned blue print of system architecture. As the result, the government or citizen has lots problem on searching the information. The objective of SIMDA is try to solve this problem by provide integrated system in some priority fields of information.

## 2. E-GOVERNMENT OVERVIEW

### 2.1. E-government in Indonesia

As defined on World Bank terminology, e-government is usage of information technology by government (such as: Wide Area Network, Internet and mobile computing) which make it possible for government to transform linkages with society, business world and other related parties. (www.worldbank.org). In practice e-government is the usage of Internet to execute the government administration and provide better public service as well as public service oriented approach.

E-government means to provide service without any intervenes from the employee of public institutions and long queue system only to get a simple service. E-government also aims to support good governance. The technology usage makes society easy to access information can reduce corruption by increasing transparency and accountability of public institutions. E-government can widen public participation in which society is likely to be actively in making decision/policy by government. E-government is also expected to improve the productivity and efficiency of bureaucracy in addition to increase the economic growth. In fact, the concept of eGovernment is to create a benevolence, comfortable, transparent, and cheap interaction between government and citizens (G2C-government to citizens), government and business enterprises (G2B-government to business enterprises) and relationship between governments (G2G-inter-agency relationship).

Considering the existing condition, the practice of e-Government in Indonesia is facing some challenges in particular encountered by government organizational, such as :

- Lack of human resources
- Inadequate infrastructure, including the lack of public access places
- Inadequate and expensive telecommunication infrastructure and capacity

- Insufficient sustained funding for e-Government initiatives
- Lack of coordination and integration
- Deliberation process of finalizing e-Commerce and e-Government laws and regulations.

Unfortunately, about 24% of those initiatives were failed, because of insufficient sustained funding, lack of human resource and leadership. Also, recent e-government efforts at the central and local levels have already been "compartmentalized" and undertaken without sufficient consideration of sustainability or possible redundancy.

### 2.2. E-Government Stake Holder

E-government has become a big buzzword in some development country. The use of ICT in government can be expected as accelerator and transparency communication from government with their citizen. Actually, e-government has involved many stakeholders and has constructed to delivery to delivery information and services for customer oriented public service. That is, the goal of e-government is to provide effective and efficient government to improve public service, to innovate on internal public affairs, and to maximize policy decision and supports. To provide this enhanced public service and public productivity the stakeholders, as government (G2G), business (G2B), and citizen (G2C), should be electronically networked. The e-government has to deliver public service for stakeholders using ICT that facilitates a cooperating relationship among stakeholders.

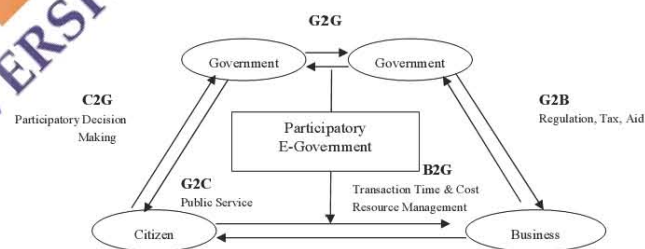


Fig. 1 Relationship among Citizens, Business, and Government

The function and role of e-government has been influenced by participation of the stakeholders, government (G2G), business (G2B), and citizens (G2C), in the viewpoints of front office and back office.

The G2G relationship is to share information among inter-government and agencies for e-government policy and project. This relationship among governments emphasizes coordination and collaboration with other ministries. It also reduces transaction costs and increases the efficiency and accuracy of administrative processes. Therefore, it obviously contributes to increased productivity of administration and better decision-making.

G2B provides better public services where industries and companies can conduct their business transitions harmoniously

and comfortably online. It is useful to reduce transaction time and costs for business by providing e-commerce with transparency and efficiency of public procurement. G2B transacts procurement, e-bidding, e-contracts and e-application, etc. in a single window. G2C provides services requested from citizens and concerning how to modify the role and scope of government.

### 3. SIMDA: PRIORITY, OBJECTIVE AND CONTENTS

#### 3.1. Priority

The main reason of SIMDA project is how to support the government program for increasing Human Development Index, as one of important issue in measuring the government performance. This criteria is not easy to calculate, especially when there was no actual and accurate information. Although this system not mainly planned to support calculating Human Development Index only, but it can be expected that the system will also usable to support all policy from current government and responsibility report to province representative agency (DPRD).

Based on basic formula to calculate Human Development Index, the forum (representative of stake holders) then choose three priority of information availability which is public health, education and people buying capability. Although this system would not use as tools to calculate the Human Development Index (HDI), but the resulted information from this system still can expected to fulfill the need of some parameter for calculate HDI. From this point of view, the major component that needs to provide are:

- Longevity Health Index
- Knowledge Education Index
- Decent living People buying capability index

With complete, relevant and actual information, the system could help any stake holder to find some parameter as indicator on measuring the progress and achievement in government program, especially in these three fields.

#### 3.2. Objective and Value Added

Objectives of Integrated SIMDA are:

- Increasing the quality of planning and decision making process
- Information transparency
- Transparency on reporting activity
- Building communication channel between government and citizen
- Accelerate information dissemination

The added values expected from this system are:

- Increasing citizen awareness on recent social issue and environment condition
- Increasing citizen participation and involvement on government program
- Easy in monitoring program socialization
- Easy in accessing the chance on increasing citizen's life quality

#### 3.3. Information Resource and Usability

The system will operated on district based. In Indonesian structure, it will be operate in sub district (kecamatan). It is means that all data should be filled and completed in sub district. This policy has established to keep actuality and simplify reporting process which usually sent the report routinely to next step in government structure. Recently, there is no standard format for reporting document and the report was hard to track. The routine reports which can be initial information when beginning collection activity such as: task report from district/sub district, and demography.

Once the initial information has provided and integrated, the contributor of information then extended to the others such as health agency (hospital), education, cooperation, and so on. This system also provide some facility to build active interaction between citizens, government and others stake holder (such as business, non government organization, commercial and so on)

The usability of information stored on this system can vary and flexible depends on the needs of reporting and analysis. The analyst then can use the information to identify and calculating the indicator, and as the result it will support the information on creating the plan for improve recent condition. The cycle of information usability can depict on this picture



Fig 2. The Cycle of Information Usability

#### 3.3. Content

The integrity system should have some important information that can accommodate all the baseline information on the three field priority, include additional information such as;

- Sub district : contain information about sub district profile, including statistic and static information about sub district, sub district official staff, and the map
- Demography : contain information about dynamic demography such as the population profile and another common demography information
- Public health : contain information about public health
- People buying capability: according to the bias of information in this field, at the first step this system should provide information about business opportunity, progress of real sector business, travel and pleasure business and job opportunity.

### 4. DEVELOPMENT APPROACH

#### 4.1. Development Strategy

First step in development strategy is identifying the information requirement, the user of information, information resource, information collecting method, priority and usability of information that already available. Conceptually, this step then produce the matrix of information requirement (in this sample: information in public health). See Table 1.

The columns in this matrix describe the map between information requirement, source of information, and the priority of information availability. To define content of information, it needs coordination between stake holders, such as kecamatan (sub district) and dinas (local government agency). Application's column was used to identify the chance if there is current application available on kecamatan or dinas, so it can be evaluate to reduce the re-entry information.

Basic information content in three fields (health, education and people buying capability), demography and sub district, can summarized on this table

**Table 1. Matrix for Information Context Requirement**

Information		User		Resource	Collector	Method	Applict	Priority
		Ctz	Gov					
Healthservices		*	*					
Puskesmas	Profile	*	*					
Hospital	Services	*	*					
	Activity							
Health Program		*	*					
Posyandu	The Unit	*	*					
			*					
			*					
KB								
Imonisasi	PN							
The user			*					
Data Galin	Personal Info.	*	*					

After define basic or initial information content, the next step is developing the application which can provide some functional requirement such as:

- Provide information about sub district profile
- Provide information about demography
- Provide information about health, education and people buying capability.
- Provide the facility to contact and interactive dialog with citizen

Non functional requirement that needs to provide by the system such as:

- Ease of use and outlook customization
- Facility of searching data and customization to support the flexible requirement
- Support for customizing report.

**4.2. Development Concept**

**4.2.1. Content**

The approach to fulfill the content requirement for this system is using the concept of “growing house”. Growing house is phased approach such as rapid or increment methodology on system development. For the first stage, the system will contain only limited information, but the system has general facility to develop generic application pattern so the user can utilize it to add the new content as the needs growing. This approach has chosen because it is not easy to develop the fix content of this system, and because the system itself has expected can be grow and, in evolutionary way, will become an information portal to support the integration on developing whole system of Jabar Cyber Province. The content could not keep uniform because of different characteristic of sub-district, but the pattern of the content can made generic and the user can made some customization based on their needs. The system ideally will have pattern such as content management system so it can support the user to extend or reconstruction the system in the future.

**4.2.2. Flexibility and Standardization**

The system ideally should be adaptive. The approach of creating CMS would make system easy to change by:

- Modification
- Adding/removing the element
- Formatting the report
- Filtering the information

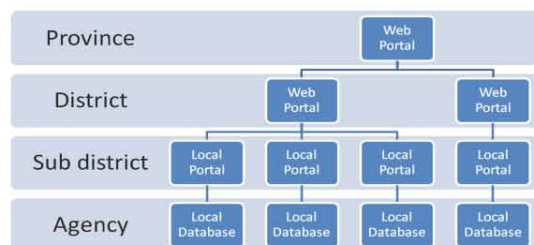
Although it would be flexible, but still need the standard such as:

- Standard for data format (meta data)
- Standard for data exchange
- Security in data transmission
- Technical specification

**5. APPLICATION ARCHITECTURE AND IMPLEMENTATION APPROACH**

**5.1. Application Architecture**

Conceptually, the architecture of SIMDA application can be described in figure 3.



**Figure 3. SIMDA Application Architecture**

Local database is an application to entry the data, it could be a desktop application and the file data can sent to the sub district for integration.

Local portal is kind of application to entry and reporting, it can be a web based application but it does not need to be online (although, if possible, we can make an intranet for local sub district), to support fast data entry. Integration process will done on batch operation by sending the database file periodically to district/city level. The database in city/district can be an online database and integrated, and will be operate and maintain by central province ICT agency

## 5.2. Implementation Approach

Based on growing house approach, the system will be build step by step which following this stage:

- Stage I : Presentation, the system should provide information about : sub district profile, demography and geography information.
- Stage II : Actualization, the information that should be available including : public health, education and people buying capability (content will be customized based on local condition)
- Stage III : interaction, the system should have interaction facility with the citizen, including: Contact and discussion forum, public complain, respond

## 6. CONSTRAINT AND SUPPORT

The person that would operate this system can be a person or official staff from sub-district. According to this situation, the system would face some constraint such as:

- System should be ease to operate with user friendly interface and using simple language.
- To be cost effective, system should run on multi platform, preferred in open source environment
- To be easy connected, for data entry it would be local storage, but with standard interface which is web based service and portal system, so it can ease to operate and maintain.

To support successful implementation of Integrated SIMDA, it needs some support such as:

- Clear policy and procedure to support daily activity, such as:
  - Send, publish, and access data, the need to fulfill information requirement from citizen and government agency, and security and legality aspect of information
  - Responsibility to keep data actual and accurate which include chose the agency/ department that has strong responsibility to update information and maintain the system
- Human Resource: this system needs good human resource to support implementation stage, especially to bridge the gap of digital divide. This problem can resolve by training and

counterpart from competent person (from university, lecturer or students, or well trained bachelor graduated students), and if it necessary, maybe it needs some incentive schema to accelerate the information collection

## 7. CONCLUSION

As the conclusion of this paper, some interesting issue has emerging such as:

- a. To achieve the goal of Jabar Cyber Province 2012 program in West Java, Indonesia, it needs some accelerating program. One of these accelerated programs is “e-government incubator” which has main objective to bridge the gap on using ICT in sub district area, by select some sub districts and implement the integrated system
- b. Integrated SIMDA is one of activity of “e-government incubator” that focused on provide raw information to support the monitoring of Human Development Index, and also as tools for collecting and reporting information.
- c. To reach the objective, Integrated SIMDA should deliver basic requirements especially to support the collection, storage, and dissemination information mainly in three fields such as public health, education and people buying capability.
- d. SIMDA has recommended to be developed and implemented using flexible approach “growing house” that can be adapted and modified by user easily without losing the standard and generic pattern.
- e. To support the successful of SIMDA’s implementation, the ICT agents needs to built partnership with all stake holders, especially with University/academy to provide the capable human resource for socialization and counterpart on using the application.

SIMDA is not the final result, it just beginning on design and implementation e-government initiative in West Java Province. Some extended activity needs to be done such as prepare basic blue print for global architecture of Cyber Province and prepare the regulation and competent human resource still a big challenge for all stakeholder.

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