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# *Sinergi Menuju Transformasi* An Anthology of Scientific Articles

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## **MODELING BUDGETING TRANSPARENCY FRAMEWORK USING SERVICE ORIENTED ARCHITECTURE IN INDONESIA**

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### **ABSTRACT**

The need of transparency in government budgeting application, especially in state government of Indonesia has already increased. Since that Indonesia, according to Open Index Report, merely scored less than 70 point for its budgeting transparency, thus it means there are lots of to do in order to create more transparency in it. It also stated that one of the key in country prosperity is when its budgeting has reach better transparency so it will create better utilization for prosperity. It also stated that corruption level in Indonesia has reached bigger point that other country in South East Asia. Thus, it need a comprehensive and integrated system which can decrease unfairness in budgeting implementation while there is merely small modification in its existing system. This research tries to create early information system framework of budgeting transparency process in Indonesia. In order to minimize modification in its system the framework uses service oriented architecture. While Service Oriented Architecture (SOA) is one of solution which can create framework for this problem. Using its capability, SOA will However, the result of this research should be tested in a prototype of complete information system for better implementation in future.

**Keywords :** *government budgeting, transparency, service oriented architecture*

## **1. Introduction**

The need of transparency in government budgeting application, especially in state government of Indonesia has already increased. Since that Indonesia, according to Open Index Report, merely scored less than 70 point for its budgeting transparency (International Budget Partnership, 2012), thus it means there are lots of to do in order to create more transparency in it.

There are lots of things that can be done in order to reach the budgeting transparency in government. Some of countries have already begun web site reporting which open for public access (Puron-Cid, 2012; Sayogo & Harrison, 2012; Harrison & Sayogo, 2013). This kind of transparency has already become trend and also need in many developing countries (International Budget Partnership, 2002)

Transparency can be done using control from third party which is more effective rather than control from internal side. This kind of solution needs a flexible framework which can connect metadata from government official report with public server without hassle. That kind of framework can be done using SOA (Service Oriented Architecture).

This approach has already been done by other country such as India (Das & Patra, 2009), Singapore (Saha, 2009) and also Egypt (Klischewski & Askar, 2010). It said that SOA implementation is one of suitable method in order to create better government information system architecture. It means that the need of SOA in development country such as Indonesia should can be done in order to create better

government information system which will lead to better report in budgeting transparency process.

Despite of the heterogeneous information system architecture in Indonesia government which cause more illogical reason for creating integrated report, SOA should be one of quick and easy solution to solve the problem for this kind of environment (Das & Patra, 2009; Candiello, et al., 2010). However, the need of SOA implementation is really needed in this context, especially in Indonesia government services.

SOA implementation should have pre-eliminary job which create solid architecture before the "real job" begin. The architectural creation should include business model which can be built from observation and study of real world (Oliveira, et al., 2012), in this context is government workflow in budgeting report. Thus, the architecture will create a big picture as blue print that can be used in implementation process.

This research tries to create the architecture of SOA implementation as model that can be used as framework in implementation process. Since that the heterogeneity of government information system in Indonesia always become main reason in implementation of integrated reporting which can lead into budgeting transparency, so this framework should eliminate those barriers. On the other hand, this framework will order business reengineering process which lead every aspect that included in this system creating a better and shorter workflow. However, eventhough business reengineering in Indonesia government system is slightly said as an utopia, result of this research should become consideration among the leader in order to create better budgeting transparency toward better prosperity in the future.



## **SOA (Service Oriented Architecture)**

SOA is a style of design that guides an organization during all aspect of creating and using business services (including conception, modeling, design, development, deployment, management, versioning, and retirement) (Seth, et al., 2011). SOA approach delivers a number of benefits including reduced time to market, improved business alignment for growth, reduced costs and business risk.

It also stated that SOA is a paradigm of designing and developing IT solutions which positions a service as the primary building block (Cellary & Strykowski, 2009). A service is an autonomous and reusable unit of business or administrative logic. Rules and methods of accessing services are specified in service contracts.

The need of SOA in public sector, especially in connecting government and citizen process is particularly suited for this heterogenous system case. It also stated that SOA can be cheap solution for interoperability problems, since that SOA offer collaboration and sharing capability for many kinds of system (Seth, et al., 2011; Cellary & Strykowski, 2009).

## **Architecture Modeling**

As mentioned previously that SOA need architectural modeling which should lead to blue print of its implementation. Hence, the modeling built based upon real world field findings and also theoretical study. Then it means that we must start from common architecture before it become more detailed model as shown in figure 1.

When citizen or public server needs data from government server which protected with firewall security, they just need to open access to XML Web Services which can be



built by government or third party from citizen representation. This process should also think about interoperability of public web server and government's. It should also consider how the data will be "in and out" using XML Web Services.

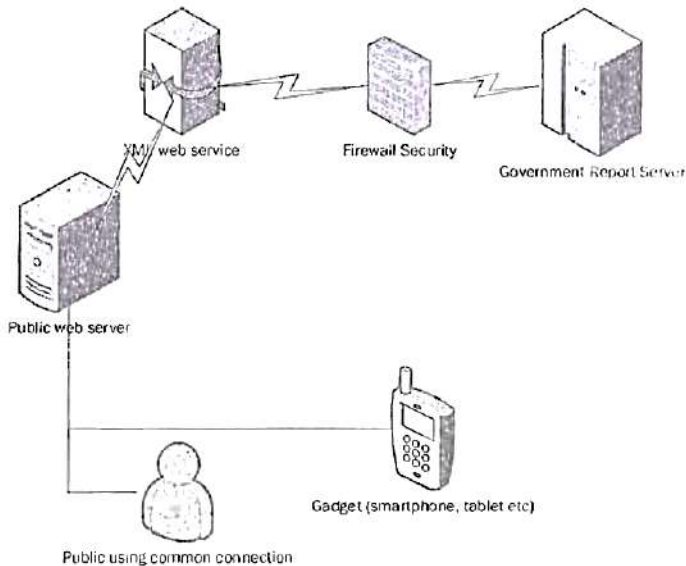


Figure 1. Common Architecture of SOA control

Based upon common architecture diagram, then we create more detail scheme of its model. While passing the firewall security, result from XML Web services which come as XML data form its function becoming a new metadata. Metadata itself then transforms into many forms such as metadata query, class for multi platform and also independent data which can be used as independent business intelligence. The whole process shown as detail scheme in figure 2.

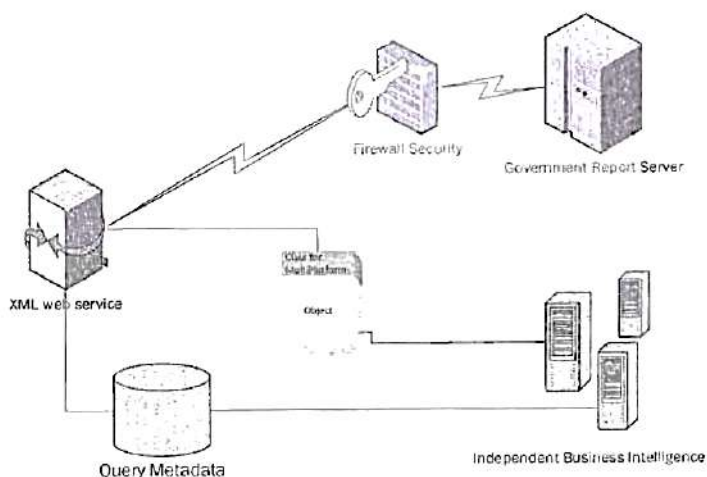


Figure 2. Detail Scheme

The result from all of this architecture is public reports that can be accessed from many kinds of gadget. Thus, it means that whenever citizen or public want to see budgeting report, it will be available and can be seen easily. This view should create transparency in budgeting cycle, from its proposal, approval until its implementation.

It means that government does not have to create specific website in order to report its budgeting cycle if this architecture will be well implemented. This caused by the flexibility of SOA architecture which uses XML Web Service, hence many public institution can customize output data as reliable and valuable report for citizen.

For example, during the end of annual budgeting deadline, citizen can access government budgeting report whether it is being used properly or there is leftover or even surplus that can be used for other public matters. This kind of transparency should increase the accountability and reliability of government to their citizen (Saha, 2009; Sayogo & Harrison, 2012).

Other example is whenever happen any public complain regarding budget implementation, citizen can directly search whether there is unfairness during its process. This search should be easily being done by using independence business intelligence as shown in figure 2.

### **Conclusion and Future Consideration**

Interoperability capability which being held by SOA architecture should become groundwork of future digital government implementation. Considering that in the year of 2014, there will be government succession, this architecture should also become next government's concern in creating budgeting transparency.

On the other hand, this framework should be tested and prototyped in order to create more solid one. Future research also should includes framework that leads into total transparency to become open government implementation in information system. This kind of implementation hopefully would increase citizen engagement and also rise government accountability (Lee & Kwak, 2011).

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