

Enterprise Service Bus (ESB) and Business Process Management for System Development

Rama Ambara, Ahmad Nurul Fajar



Abstract- *This study aims to proposed system development using Enterprise Service Bus (ESB) and Business Process Management (BPM). It will construct based on specific EA documents such as business architecture. In this study, we design and build simulation using Enterprise Service Bus (ESB) tools and Business Process Management (BPM) tools also. The research sample is a business architecture document from an organization. The results of the study is mechanism to construct system development using ESB and BPM tools.*

Keywords : BPM, Business Architecture, ESB, tools

I. INTRODUCTION

Business Process Modeling Notation (BPMN) is a standard for modeling business processes that provides graphical notation in describing a business process in a Business Process Diagram (BPD). The flow technique on BPMN is exactly the same as the Activity Diagram on UML. The purpose of BPMN is to support business process management, both for technical users and business users, by providing intuitive notation for business users, but being able to represent complex semantic processes. The most important goal of BPMN is to provide a standard notation that is easily understood by all business people. Including business analysts who create and perfect business processes, developers who are responsible for implementing those business processes and who monitor and manage business processes. So that BPMN overcome differences in understanding that occur between designers and implementers in a business process

II. RELATED WORKS

Enterprise business process is a business process that reaches the entire enterprise and can utilize core services. Business services open high-level, composite business functions to enterprises. The functions and information are very much in accordance with the semantics and syntax required by business processes. Data integration services at this level support the data consolidation required by enterprise processes. Business services can be:

(a). Line-of-business services - Special LOB functionality that is opened externally to the entire enterprise, and (b).

Common business services - Allows all applications to share basic business functionality. The size of integration services will depend in part on the existing and opened system. Integration services usually involve a transformation between the enterprise model and the application model, both at the functional and informational levels. External services provide access to systems and applications supplied by suppliers or partners outside the enterprise. The size of external services depends on the specific service provider. Foundation services provide the capabilities used in building higher-level services, regardless of any business domain. In designing SOA-based applications, there are general standards / architectures in the development of SOA-based applications [1]. Defining general semantics and information models is the key to achieving agility and flexibility [1]. Because without this, services cannot be easily combined to form new business processes. The separation of integration services and business services is very important to maintain a flexible enterprise environment. This involves transforming data and functions from what is desired at the level of business service that is truly possible in the existing system. Service Granularity [1] describes the size of a service which is the number of business functions performed in a request / response in the exchange of messages. SOA development with methodology from [1]. There are some of previous research was carried out by [2]. Another research relate to SOA and EA has been done by [3]. The SOA implementation and success factor has been conducted by [4]. Adoption SOA and EA has been proposed by [5] to explore the maturity and measurement model.

III. RESULTS AND DISCUSSION

Service creation using the Enterprise Service Bus which also has the ability to build services sourced from databases or as data services. Following are the services that have been deployed on ESB.

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* Correspondence Author

Rama Ambara,PT Smarttekno Solusi Bisnis Jakarta, Indonesia, Email : Rama.ambara@gmail.com

Ahmad Nurul Fajar, Information Systems Management Department, BINUS Graduate Program-Master of Information Systems Management, Bina Nusantara University Jakarta, Indonesia 11480, Email : afajar@binus.edu

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WSO2 Enterprise Integrator

Home > Manage > Services > List

Deployed Services

11 active services. 11 deployed service group(s).

Service Type Service

Select all in this page | Select none Delete

Services		
<input type="checkbox"/>	DataAplikasiService	data_service
<input type="checkbox"/>	DataIndividuService	data_service
<input type="checkbox"/>	DataPekerjaanService	data_service
<input type="checkbox"/>	DataPenghasilanService	data_service
<input type="checkbox"/>	DataPersetujuanService	data_service
<input type="checkbox"/>	DataProdukService	data_service
<input type="checkbox"/>	DataSurveyService	data_service
<input type="checkbox"/>	echo	axis2
<input type="checkbox"/>	MasterDataService	data_service
<input type="checkbox"/>	Version	axis2
	wso2carbon-sts	sts

Select all in this page | Select none Delete

Figure 1. The services in ESB

According to figure 1 above, it shows the some of list services that has been deployed in Enterprise Service Bus (ESB). The deployment process using WSO2 integrator. It will play the role as enterprise integrator. Then, figure 2 below shows the query of master data services. It described the query, type, and actions. The actions in this case, such as

edit and delete query. Thus, the type of queries are data sources.

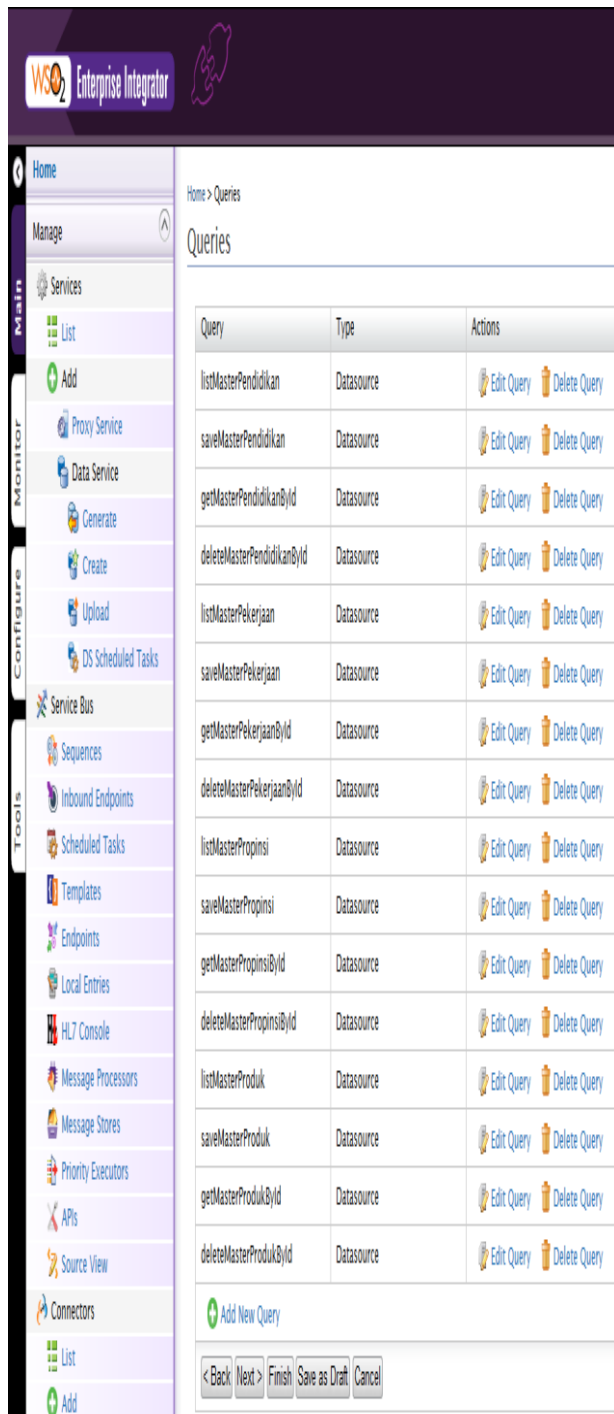


Figure 2. Query master data services

Thus, we create business processes using BPM tools, and in this case, we used IBM BPM tools. Relate to it, the process to making business processes is done using IBM BPM tools. The following is a description of the business processes for Data Entry and Survey. In the IBM BPM tools there are features for creating comprehensive form designers. The following is a design to display individual information, including: first name, last name, ID card number, gender, place of birth, date of birth, occupation, education, marital. According to figure 3 below, it is a sample business processes that has been created by IBM BPM tools. It shows the users and actor in the business processes. Figure 3 below explain the request of credit process. There are some actor, tasks, workflow and nodes in the processes.

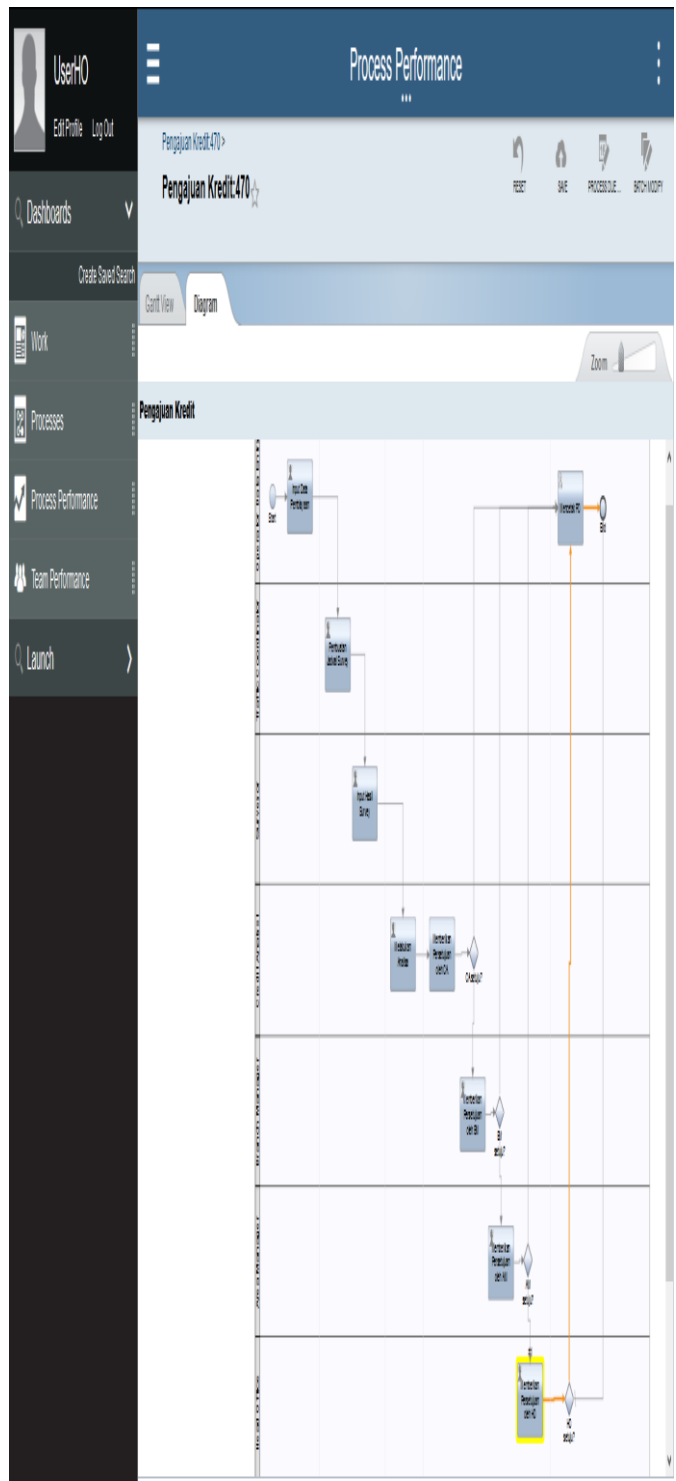


Figure 3. User BPM

Besides that, the workflow in the request of credit processes shows the mapping processes between actor, tasks, and role in various nodes. The modeling of business processes will be map the interaction both of the entities in the environment of processes. According to figure 4 below, it shows the process performance in BPM tools. BPM or business process management is a mechanism that can measure the process performance and process scoring also. The impact of it is it can help the organization to evaluate the processes in business processes

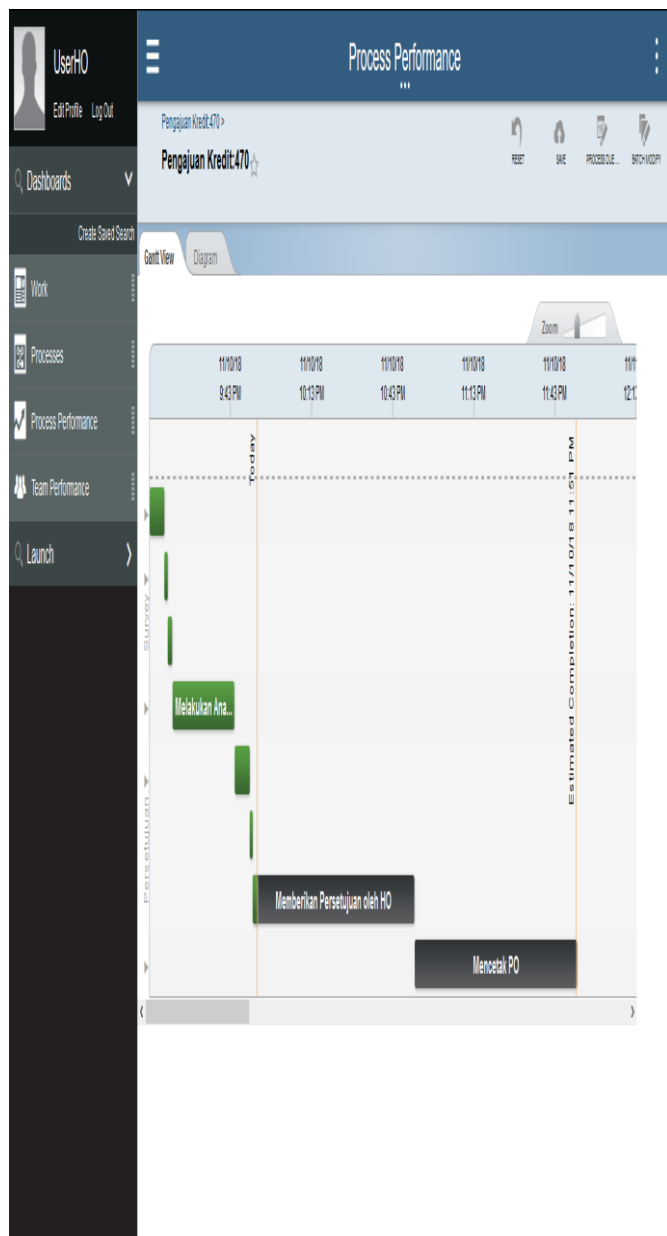


Figure 4. Process Performance

IV. CONCLUSION

Enterprise Service Bus (ESB) and Business Process Management (BPM) can be integrated to support the IT and business alignment for organization. Actually, the ESB tools and BPM tools can be implemented in various business processes. In this study, we proposed the integration for support system development in some of domain areas. It can help the system developer to create the system in order to achieve the flexibility and agility environment.

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AUTHORS PROFILE

Rama Ambara, is a CEO in IT consulting company. He has some of experiences in SOA and BPM project. He also involved in some of project and consultation in SOA, BPM and system development. His email is rama.ambara@gmail.com



Dr. Ahmad Nurul Fajar, Doctore in Computer Science, graduated from Faculty of Computer Science University of Indonesia (UI) in 2014. In 2001, he is graduated from Gunadarma University majoring in Informatics. Master of Science Informatics was completed in 2004 at Bandung Institute of Technology (ITB). Currently, he is the Faculty Member of Binus Graduate Program, Department of Master in Information System., Research Interest in Software Engineering, Software Development, Information System Analysis and Design, Business Process, and Service Oriented Architecture .His email is afajar@binus.edu