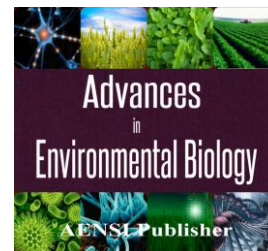




AENSI Journals

Advances in Environmental Biology

ISSN-1995-0756 EISSN-1998-1066

Journal home page: <http://www.aensiweb.com/AEB/>

The Frameworks of Governance Service Oriented Architecture

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ARTICLE INFO

Article history:

Received 15 April 2014

Received in revised form 22 May 2014

Accepted 25 May 2014

Available online 15 June 2014

Keywords:

life cycle, Governance, service, Service Oriented Architecture(SOA)

ABSTRACT

IT and specially Service Oriented Architecture (SOA) has prepared opportunities to speed up the adaptability between the career and the bases for IT Nowadays. Since the related organizations might encounter different challenges in defining, using this technology, designing management, building and using services, organizing and offering services, how to make decision or evaluation criteria, and despite efforts and expending much energy and money, it might fail to reach the desirable point, therefore applying an architecture based Governance system having a framework to cover and support different aspects like, people, standards, policies and technology seems necessary so that it can assign the actions that are to be taken to Service Oriented Architecture(SOA).

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To Cite This Article: Shirin Bahrami, Behrooz Hosseinpour and Alireza Bahrami., The Frameworks of Governance Service Oriented Architecture. *Adv. Environ. Biol.*, 8(11), 1400-1405, 2014

INTRODUCTION

The role of Service Oriented Architecture(SOA) is creating a adaptable approach along with processes, standards, policies and guidelines in order to help Service Oriented Architecture(SOA) operate well. The Governance of Service Oriented Architecture(SOA) provides a framework for reusing and sharing services which includes prerequisites, subjects and cases which are necessary to organize the services in the organization. The framework of Service Oriented Architecture(SOA) include a resource governance model as the initiating point and it has some technical basic components, policies, processes and roles and process of its existence which is a repetitive life cycle to define the service and to localize the SOA Governance model [1]. Services are arranged according to the services' life cycles and are managed after they have been arranged. After setting the service operational policies will be measured, controlled and managed by Service Oriented Architecture(SOA). The framework of Service Oriented Architecture(SOA) will define the prerequisites for policies, processes, roles and foundations to manage, change, apply and use architecture Service Oriented Architecture(SOA). Service Oriented Architecture(SOA) has a life cycle of existence called " Governance existence of Service Oriented Architecture(SOA)" as the service development has. These two life cycles are dependent and used together. This life cycle will set a framework governance to apply in Service Oriented Architecture(SOA) [2]. The researchers comments on SOA Governance show that unlike the traditional governance frameworks, IT governance ity has not a perfect framework and to covers all needs to a SOA Governance so offering a comprehensive model of Service Oriented Architecture(SOA) to remove all the related problems, are to be the subject to a research in future.

2. Service Oriented Architecture(SOA):

This is not a recent issue. It has been set forth since 90s but what is new is its capability to perform with the help of related protocols and instruments. This kind of architecture is a design to relate calculation resources and the sources have datas and applicable programs within them [3]. Service Oriented Architecture(SOA) is used to organize the capabilities and sources on a network. The sources and capabilities exist on a platform and are separate ones which use services as basic factors to expand the applications. Service Oriented Architecture(SOA) could speed up the jobs, shorten the time of production and introducing to the markets, decrease the expenditures to keep goods via reusing the present services and creating new sources for making money and creating a balance between the jobs with IT. Operationalizing Service Oriented Architecture(SOA) will cause to operationalize a governance model based on Service Oriented

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Architecture(SOA) [4]. In fact with the absence of a reliable SOA governance model,).Without an efficient governance SOA, to each either extremes,big or small, the Service Oriented Architecture(SOA). fails to achieve the expectations [5].

The basic technical terms of Service Oriented Architecture(SOA) which can show the prospective features include:

1.2. Service:

Services are common or shared languages to heterogeneous systems and it enable systems to communicate with each other through this language and share their data [4].

The idea of Service Oriented Architecture(SOA) is to singularize different aspects of marketing in a certain issue which will appear in the form of a service. The objective of Service Oriented Architecture(SOA) is to give structure to distributed giant systems on the basis of singularity and summarizing the regulations of marketing. A service is an indicator of a repeatable task. In order to hide the operational functions, the services apply an independent connector. In fact each service has a certain function depending on categorizing operational services and their functions.

2.2. Highinteroperability:

In a foundation which includes a combination of heterogeneous systems and platforms, the first objective is to enable systems to connect to each other easily. This feature is called "interactivity". Interactivity is not a new notion, it was used before Service Oriented Architecture (SOA) in integrating services of the organization. In Service Oriented Architecture(SOA), interactivity is a feature by which we can operate marketing functions distributed differently.

3.2. Loose connection:

In service oriented architecture(SOA) loose connection means interactivity free of code writing and the place of services so that the services are able to change their places, change their inner current and even use a more advance technology without leaving any bad effect on the users. Loose connection is a characteristic for the information systems in which the connectors between components are designed in a way that the dependency between them gets the least and it gets free of the risk of changing one part due to a change of the other parts. So loose connection means to minimize the dependency. When it is minimized, correcting within the system would face the least feedback and it can even work while one or some part of it is ruined.

3. Governance in Service Oriented Architecture(SOA):

The notion of Governance in Service Oriented Architecture(SOA) is considered like a control mechanism in SOA.In order to stabilize SOA, the organization should have whether an inner controlling system or a fixed controlling system.

The most necessary issue in Governance in Service Oriented Architecture(SOA) is the issue that , reports could be placed in frameworks. The framework of Governance initiates from the job requirements and it is process oriented and active services within a general processing model and within [6], the life cycle of service management is inside the framework and controls the coordination of the technology services with that of the job requirements. The process of Governance in Service Oriented Architecture(SOA) shows that some active phases exist to manage process life cycle of the services. The Governance in Service Oriented Architecture phase (SOA) should be like an improved link to design SOA and to measure, mended and up-to- dated the plan of the Governance of SOA and the method of the Governance in the due time.

4. The main components of SOAGovernance framework:

The main components of SOA Governance framework include the range of the process governing SOA are concerned with the SOA Governance and its aspects of management and the model of SOA maturity whose a general schema is as follow

4.1. Domain processing:

Domain processing is SOA Governance with clear and measurable objectives which are defined for the whole existence of the life cycle of SOA. The process of the existence of the service is divided into two parts which are; service production of the concerning designing identification processes and performance, distribution, establishment and supporting the service [7]. And the service management process in cases like managing the extent of the service and its accessibility and the security of the service are available to manage and supervise the services and make one sure of the quality of the accessible services.

4.2. The aspects of management process:

There are a collection of instructions presented in the framework such as the identification of the objectives of the processes of the very important activities and the internal and external activities are measured and also a collection of policies and instructions as the controlling objectives to each processing are defined [8], so controlling mechanism are defined with the purpose of controlling to each Governance framework and focuses on what the process carries out. Governance is considered to process management and its functioning on the range of the input management like that of the controlling purposes.

4.3. Maturity models:

Dealing with the SOA, organizations are in need of evaluation of the way of migrating to SOA and the way of achieving more benefits to support the organizations as well as systems [9]. In order to achieve the merits of SOA in higher levels of maturity, two models called "The process maturity" and "acceptance maturity" are introduced. In order to define an appropriate framework for service-oriented architecture in the organization, we should define the level of the architectural maturity in the organization. Besides the definition of the level of the current maturity, the other capability of the maturity model is its capability to pursuit activities and various processes, which are to be followed to achieve the desirable goals in service oriented architectural maturity.

5. The Frameworks of Governance Service Oriented Architecture:

The role of service oriented architecture Governance is to create an adaptive approach beside the processes, standards, policies, and instructions to help service oriented architecture perform. The Governance of the service oriented architecture provides a framework to reuse and share services. This framework includes ;prerequisites, and cases which are necessary for the services' managing. The framework of service oriented architecture includes;

1) A resource model of Governance which is considered as a starting point and has four main components of technical foundation, politics, processes and the roles. And 2) The existence life cycle of the service which is a repeatable process to define the service and to localize the Governance for SOA model [7].

Figure 1 shows the most important components of architectural Governance for service-oriented architecture and its impact on the existence of the service framework.

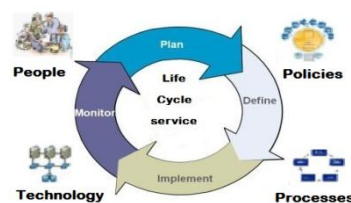


Fig. 1: the framework of SOA governance.

The services are created according to the service life cycle and are managed after being stable. This is a closed process which is constantly changing with the change of service requirements. After creating and stabilizing service, the codified operational policies by service oriented architecture Governance is measured, controlled, and managed. The SOA Governance is a process not a project so its progress should be measured constantly and probable modifications should be done to service-oriented architectural Governance. The framework of Service Oriented Architecture, required policies, roles and foundations for management will define the usage, the changes of the service-oriented architecture. So the main purpose of the Service Oriented Architecture Governance is establishing this kind of architecture in the organization. The framework defines a gradual approach so that the organization would be able to meet the current needs besides the achievement to the far goals for the SOA. Among the present SOA Governance frameworks we will deal with five: WebMethod, IBM, Software AG, and Oracle valid frameworks presented by autsoa.

5.1. WebMethod's point of view on Service Oriented Architecture Governance:

WebMethod offered a consistent Service Oriented Architecture Governance and marketing processing (BPM) [10]. The users of this framework can approach to the SOA acceptance point. It mainly focuses on marketing management. In architectural Governance we deal with the issues such as; formulating standardizes, SOA architecture, foundation capabilities, formulating SOA platform strategy and defining services characteristicssuch as (security, reliability, and accessibility).

5.2. *The framework of Service Oriented Architecture Governance in IBM point of view:*

IBM deals with the Service Oriented Architecture Governance in two aspects, Methodology and platform. In methodology an approach named "The way of managing and Service Oriented Architecture Governance" is used which introduces an Service Oriented Architecture Governance. This framework covers all stages of Service Oriented Architecture life cycle with controlling points, checklists, policies, and qualitative criteria and it defines all principles, processes, required roles for management, using architecture and changing Service Oriented Architecture in an organization.

5.3. *Service Oriented Architecture Governance in Oracle point of view:*

the model presented by Oracle is based on the best sets of experiences and is based on service-oriented architecture notion. Service Oriented Architecture in Oracle point of view is centralization of organization architecture in different aspects of marketing, plan, information and technology. So Oracle believes that Service Oriented Architecture Governance is a combination of service oriented architecture, organizational architecture and marketing and presents his model of Governance based on the definition of policies, and the methods in the spaces and different aspects of marketing, organizational and technological. So formulating policies in eight aspects and areas are the key elements of the framework and Service Oriented Architecture Governance in Oracle's point of view. Besides the main chosen parts and Governance points, Oracle believes in a gradual movement toward SOA Governance.

5.4. *The framework of Service Oriented Architecture Governance according to Software AG:*

From Software AG's point of view the key point to the success of SOA projects is recognition and controlling SOA productions whose key factor to know in this regard would be is the SOA Governance [7]. In other words, SOA Governance is a notion used to control services in service oriented architecture. The Governance of SOA is the expansion of IT whose concentration is mainly on activities and marketing services. Like those of IBM and Oracle, the framework is based on the best experiences. This strategy is set forth based on a SOA foundation. In SOA strategy each service is considered as an asset, which should be designed properly to be used in larger scales in marketing. An appropriate propose to services, a safe, reliable, accessible and controlled is needed to achieve the desirable goals for a service. The framework based on SOA Governance in this point of view cause a view to advent to designation and producing processes and use and changes on services. To execute these standards, it is necessary to apply a perfect architecture as well as perfect methods to execute this Governance automatically.

5.5. *The framework of Service Oriented Architecture Governance in Aut SOA's point of view:*

The study of the above frameworks of Governance shows that these frameworks do not fully do the processing of the SOA procedures of the Governance and the SOA plan, and they are not adequate for all important elements of SOA Governance. The last framework, The Aut SOA is based on Cobit which looks more complete than others. The proposed framework came to existence according to controlled actions and controlled Governance based on Cobit and applying the managing services in existence life cycle. And this framework is an understandable framework which describes processing with their relationships, responsibilities and measuring criteria and controlling expansion and executing by defining the management controlling elements. SOA service manager adds and describes fully the efficiency of the criteria and the processing assessment in this framework. But it does not cover the important elements of the present frameworks of SOA Governance. The existence of the life cycle of the services is divided into two groups as; offering the service and management processing. The processing of the service offering are concerned with the recognition, designation, execution and the settlement and supporting services. Like processing surface service management, the accessibilities of the service, safety management, and supervising services to get sure about the quality of the services is on the shoulders of the service managing processing. In the lifecycle of the Governance, the range of the processing is presented in the figure 2. and is titled as:

Design:

This range covers the designation strategy and the enabling SOA and clarifies the requirements and preferences of the career.

Definition:

This area defines concentrates on the processing interactions designation of SOA Governance which is in need of defined goals in planning stages.

Execution:

This process stage is related to certain executive interactions within a certain phase.

Measuring(Scale);The range of this process ,is up to management performance and controlling internal observation. Afterwards, organization reviews the executive purposes and metrics are clear for all processes and creates the required changes to standard Governance and processing through the lifecycle Governance.

In service lifecycle the processing ranges are illustrated in figure 2 and are named as follow;

Service strategy; This range focuses on procession designation, the special solution of SOA and the designation for proper services and showing the required changes of the service profiles.

Service designation;This range provides the guidelines and technological services' designations and focuses on technology and architecture and scaling methods.

Service operation: This range covers the activities, which the quality office delivers to the users and the capability of supervising operational aspects, and then reports them. And provides guidelines to achieve an effective productivity and reporting these services.service

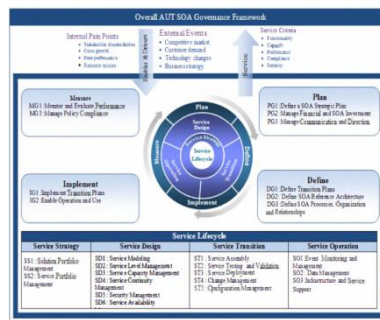


Fig. 2: AUT SOA governance framework [7].

6. The relation between Governance and service lifecycle:

Service development has a life cycle as does service oriented architecture which is called "architectural lifecycle of Governance". These two life cycles are related and also used simultaneously. The Governance lifecycle creates framework Governance to be used while managing. Governance lifecycle help us remove challenges like assigning the right to decision making, marketing paralleling for IT and career and help controlling service lifecycle by service sovereign lifecycle. So focusing on sovereign lifecycle is the factor through which the factor for acceptance of service oriented architecture in organization.

Conclusion:

Different models and frameworks of service oriented architecture are presented by different companies and in this study the model presented by Web method,Oracle,IBM, Software AG and Aut SOA are studied. The main deficiency of these models in not offering the details in managing process and validating services, defining criteria, assessment scales, presenting the map of SOA, defining strategy and defining the approaches to services and the way of integrating old systems [7].

Findings on SOA Governance,show that unlike the old frameworks,IT Governance does not have an architectural all-inclusive framework to include all requirements to SOA Governance. So offering a service-oriented architecture to solve the present problems and to meet the needs of SOA Governance can be the subject to a study in future.

REFERENCES

- [1] Erl, T., 2005. Service-Oriented Architecture: concepts,technology and design, Prentice Hall, Upper Saddle River, NJ.
- [2] Peffers, K., T. Tuunanen, M.A. Rothenberger, S. Chatterjee, 2007. "A Design Science Research Methodology for Information Systems Research", IMIS, 45-77.
- [3] Sibley, J., 2007. "Managing the Service Lifecycle with BestPractices", Manta Group.
- [4] Hojaji, F., M.R. AyatollahzadehShirazi, 2010. "Developing aMore Comprehensive and Expressive SOA Governance Framework", 2nd IEEE International Conference on Information Management and Engineering.
- [5] Schepers, T.G.J., M.E. Iacob, P.A.T. van Eck, 2008. "A Lifecycle Approach to SOA Governance", Proceedings of the ACM Symposium on Applied Computing, 1055-1061.
- [6] Sibley, J., 2007. "Managing the Service Lifecycle with Best Practices", Manta Group.
- [7] Hojaji, F., M.R. AyatollahzadehShirazi, 2010. "A Comprehensive SOA Governance Framework Based on COBIT", IEEE 6th World Congress on Services.
- [8] Weill, P., J.W. Ross, 2004. IT Governance, Harvard Business School Press.

- [9] Castaldini, F., 2008. "SOA Governance and CentraSite Ensuring SOA success with effective, automated control throughout the lifecycle" , Software AG.
- [10]Zhang, LJ., 2008. "Introduction to the Body of Knowledge Areas of Services Computing", IEEE transaction on Services Computing, 1-2.