

Enhancing Business Agility using REST (Representational State Transfer)

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Abstract— In today's world companies would like to build an environment where the complexity of business process is reduced. Complexity can be defined in terms of flexibility, adaptability etc. Business agility helps to adapt in rapidly changing environment and provide flexibility as per the business process requirement. However communication between services and processes is the major issue. This barrier of communication can be eliminated by using REST. Restful architecture is applied in development of web services which ignores the details of services and focuses on the roles of services such that the constraints are not violated of any protocol. In this paper we have proposed an architecture which will help business process to work rapidly in any circumstances and make the business process more agile towards building of solution.

Key words: Business Agility, Web Service, Representational State Transfer (REST), Business Process Management

I. INTRODUCTION

A service is a self-contained unit of functionality which can be combined with any other software to give better output. Service oriented architecture is a software design used to provide application functionality to other application. Service oriented architecture is said to be loosely coupled as each component in service oriented architecture least interacts with other components or does not interact with other components.

A. Business Agility

Business Agility is a relatively new paradigm painted as a solution for maintaining competitive advantage during times of uncertainty in the business environment. Business agility is a concept that extends adaptability and flexibility to include speed and scalability. Adaptability is the opportunity for enterprise information system adaptation to different specified environments without applying other actions or means than provided for this purpose. Flexibility is the ability of an enterprise information system to respond to potential internal or external changes affecting its value delivery, in a timely and cost effective manner. Scalability refers to the ease with which an enterprise information system can be modified to fit the problem area. Anarchic scalability defines the need for architectural elements to continue operating when they are subjected to an anticipated load, or when given malformed or maliciously constructed data, since they may be communicating with elements outside enterprise's control. Business Agility is the term applied to an organization's ability to react to unanticipated market change, defining informed rapid transformation of organizational process and product. Business Agility is the ability to sense change and opportunity in the marketplace, respond quickly, and execute successfully. Business agility is the sustained ability to sense and respond to change after change, executing well,

occasionally inflicting change on competitors, yielding market leading returns. Agile enterprise is the enterprise capable of responding quickly to changes.

Business agility means fast adapting to rapidly changing environment and provides flexibility to adaptation as well. Business agility can be defined in three components such as: technical, human and business process. Humans are said to be agile and is the main enabler for business agility. Technical ability refers to quickly change the type of flow of information within an enterprise. Business process is a series of inter-related activities that cross functional enterprise boundaries with individual inputs and outputs. Business processes are either operational or supporting. Operational business processes are associated with the way enterprise develop strategies, invent, market and sell products or services. Support processes include the provision of Human Resource Management (HRM) activities, information systems infrastructure, and finance and asset management

B. REST (Representational state transfer)

Representational state transfer (REST) is an architectural style consisting of a coordinated set of architectural constraints applied to components, connectors, and data elements, within a distributed hypermedia system. REST ignores the details of component implementation and protocol syntax in order to focus on the roles of components, the constraints upon their interaction with other components, and their interpretation of significant data elements. REST was initially described in the context of HTTP, but it is not limited to that protocol. RESTFUL architectures may be based on other Application Layer protocols if they already provide a rich and uniform vocabulary for applications based on the transfer of meaningful representational state. REST applications maximize the use of the existing, well-defined interface and other built-in capabilities provided by the chosen network protocol, and minimize the addition of new application-specific features on top of it.

II. LITERATURE REVIEW

Business process management is referred to aligning an organization's business processes with the wants and needs of clients. Selecting business process is a complex procedure. However there are various ways in which business process has been simplified.

Tim Kuetner has discussed the tension between the ERP selection criterion of functional fit and the criterion of agility, concluding that the focus on current, perceived requirements may lead enterprises to select functionally powerful but complex systems that limit their future agility. The paper has several limitations: It is the result of theorizing and requires empirical evaluation. Additionally, it presents a preliminary result from an ongoing study. As such, it constitutes a starting point for further research. By critically reviewing digital options theory and ERP

selection criteria, it offers a different perspective on the subject of agility. By linking business agility and business software agility, it addresses the role of agility within the field of business software. While this may seem trivial, it actually requires IT to adopt a role and perspective different from being an options generator for business agility.

Haitham Abdel Monem El-Ghareeb said that Business Process agility can be maintained by applying BPM concepts. BPM concepts are achieved via BPMS. Technical agility has gained new perspectives by adapting SOA for enterprise information systems. Service-oriented architecture based applications are being heralded as the only viable way to overcome the complexities involved in supporting agile enterprises.

Zeng Sen et al proposed model driven and service oriented architecture which has made significant influence on IT and business environment. Service oriented architecture helps in enterprise integration and better efficiency. In this paper model driven development framework provides various models that are required for modeling various resources which enhances the output.

Aakash Saurav Das et al has given the benefits of use of business process management to enhance business agility. They have said that business process management has helped to bridge gap between business and technology. Business Process management helps to break larger problem into smaller ones and to reuse solutions for better result.

Juan Manuel Dodero and Ernie Ghiglione used Rest architecture to invoke web services in an application and concluded that by using restful architecture web services work efficiently and invoking a service and giving results of service is faster than use of SOAP and other techniques.

III. COMPARISON BETWEEN VARIOUS TECHNIQUES

In survey we have seen various techniques by which service oriented architecture can be used and its benefit on various applications. This chapter gives a comparative study of various techniques with its advantage and disadvantages. The table is as follows:

Author	Techniques Used	Advantages	Disadvantages
Tim Kuetner	Business Agility and Service Oriented Architecture	Enhance Flexibility and help in changing environment.	Business Agility needs more research as results are not accurate.
Haitham Abdel Monem El-Ghareeb	Business Process Management and Service Oriented Architecture	Helps in better integration.	Complexity increases.
Zeng Sen et al	Model driven framework and service oriented architecture	Efficient by use of model driven framework.	
Juan Manuel Dodero	Restful Architecture	Dynamic and faster invoking of	

and Ernie Ghiglione		services.	
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Table 1: Comparison Between Various Techniques

IV. PROPOSED ARCHITECTURE TO ENHANCE AGILITY IN BUSINESS PROCESS MANAGEMENT

Unless there are six authors or more give all authors' names; do not use "et al.". Papers that have not been published, even if they have been submitted for publication, should be cited as "unpublished" [4]. Papers that have been accepted for publication should be cited as "in press" [5]. Capitalize only the first word in a paper title, except for proper nouns and element symbols.

V. CONCLUSION

Service oriented Architecture is used as an API (Application Programming Interface) for faster and efficient retrieving of results. Business Process management System helps in better processing and modeling of applications. Integration of Service Oriented Architecture with business process management helps to achieve greater agility. Agility makes a system to adapt to changing environment and make the system more flexible so that optimized output can be achieved. The proposed Architecture uses REST (representation state transfer) architecture to invoke web service whenever required by the system. However by using RESTful architecture we get faster access to services and in better format as required by the user.

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