

# Presenting new solution based on Business Architecture for Enterprise Architecture

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## Abstract

Due to software production dominance development among all structures and information exchange growth among systems, Utilizing a suitable method for correct connection among information systems is important and worth to consider. At first look, work dependence to technology was more than business because of production variety. As business processes have their own shares in Project purposes' implementation growth, it could not be considered as less important component. In another view, technology architecture had reached equitable level and become more and more important. This article peruses the current EA and also its atmosphere at subsequent years and introduces new EA structure based on a balance between technology and business. The most important advantages of this structure are paying attention to stakeholders' concerns, discovering the securest solution for business and accomplishing works repetitive with adjustment in order to make it dynamic. Reducing work's risks by means of patterns and agility are other advantages of this.

### Keywords:

*Enterprise architecture, agile Enterprise architecture, service oriented Enterprise Architecture, business architecture*

## 1. Introduction

There is no place for doubt that EA is an important vicissitude in enterprise structure which analyzes all aspects and current theory viewpoints completely to lead it to its final purpose means idealistic conditions architecture. Implementation of EA consist of three important levels , specifying existent condition architecture, codifying transition pattern and specifying idealistic conditions architecture so we need a suitable framework based on our enterprise structure to implement them correctly. In fact this framework should have adaptive structure in order to form itself based on tenets and enterprise structure [2].

EA is an approach includes theories, methodologies, technologies and practical - approaches which support

designing, producing, implementing and managing EA. Enterprise architecture consists of tenets, frameworks methodologies, processes, tools, mechanics, and knowledge body. EA emphasizes on equal elements, harmonic relationships, optimum situations, effective repetitions, unisonous planning and how to connect past, present and future to have a more productive, effective and harmonic enterprise.

Equal elements; For instance: Identifying and incorporating works which have something in common or conflict.

Harmonic relationships; For instance: displaying and bridging existent interstices among work's stakeholders or among enterprise internal units.

EA pertaining to the other theories and methods in two ways: acquiring knowledge from other theories and dealing with other theories and methods for cooperating duties, controlling each other's and establishing strong relationships [1].

EA uses some cases such as software engineering and business management .and also it deals with so many methods and structures like IT management. Zackman framework was presented, as the first enterprise architecture's framework in last decade. And after that so many innovations and consequences were made in field of software engineering and information technology, so nowadays enterprise architecture dissertation has improved a lot. Some new subjects such as service oriented, aspect oriented and element oriented methods are the dissertations which have caused changes in all fields of information technology. As EA converged with software architecture and software engineering, it cannot be free of these changes and acquiring suitable results from them. This paper, firstly, introduce current EA with informing that problems, and after that express using new solution such as agile and service architecture on EA. At last suggesting solution present based on business architecture.

The significance of this research is enterprise (with any size) need to use business architecture for successful implementation EA.

## **2. Current EA**

The present EA is mostly concentrated on available technologies and tries to apply the activities by means of them. So EA is:

EA is a complete expression and a general schematization of an enterprise works as a cooperator in different aspects of working schedule (i.e. purposes, strategies, viewpoints, governmental beliefs), working activities (i.e. working relationships, organization of enterprises, duties, activities and information's), the aspects of control and guidance part (i.e. information system and data base) and infrastructure of making able which have work technology (i.e. computers, working systems, networks)

However this definition covers all enterprise aspects but is mostly depended on abilities of available technologies and less pays attention to business architecture. It makes enterprise architectures feel separated from other working teams and just be busy analyzing and producing models with documents.

On the other hand, EA is a general theory about functions, enterprise duties, working procedures, information existence, relationship networks, hierarchy and working orders in an organization made by purpose of creating en bloc and useful information systems. It does not include districts like designing financial, enterprise, ministerial or human force structures [2].

### **2.1. The problem of current EA**

We can divide these problems into under pointed parts and then peruse them:

General problems of work: this means that there is not any unison with Architect during working or just emphasize on a small part of architecture [2].

The problems of working teams: these teams face problem during implementation because they were not present at the beginning or designing so that it is possible that they do not obey architecture or since they do not completely understand the models so just implement some parts or outright controvert enterprise architecture [1].

Technological Problems Of work: we face these because of using outdated methods and theories during designing or implementing. This has main function in ending work which can be solved by using new and useful methods [1]. Nowadays agile EA and service oriented EA were introduced for this problem.

## **2.2. Enterprise architecture's changing within software architecture changes**

EA uses most of methods and theories especially software architecture as it can be used in both analyzing and implementation. Software architecture changed a lot in recent years and nowadays service oriented, agile, agent oriented and aspect oriented architectures are introduced. Nowadays we try to use agile architecture and service oriented architecture in EA in order to improve that. And somehow each of these activities is useful to solve classic EA's defects [4].

### **2.2.1. Service oriented architecture**

It is a theory of architecture made of weak relationships among services and supports technology indecently in order to make business flexible and common. And it includes business oriented services which presents flexibility and dynamic structure for processes [5].

In fact the enterprise takes its steps toward dynamism and attracting attention to business architecture by this method. And not only in first steps but in all phases is not consistent to this. When service oriented architecture and EA are combined in fact we pay more attention to details so that the complexity of work increases. In other words service oriented leads works to the technology in the nether layers and applies each one by a certain method, dividing works and making relationships among them via services. This is atwart EA because EA emphasizes on accretion of works especially at upper levels. So service oriented architecture constrains some conditions to EA which make it to be shaped on those.

### **2.2.2. Agile EA**

Agile EA is a method that explains aspects and different viewpoints of a busy and complex enterprise completely which is influenced by unexpected changes in functions and technologies a lot. These changes are unexpected so the enterprise cannot plan especially for contrasting them. For solving this agile EA uses agile models, techniques and methods in order to describe existent and idealistic conditions of enterprise. Implementation of transmission pattern is one of the bases planed perfectly in agile EA. Agile EA is result oriented and mostly concentrated on people's gumption. The most important vantage of agile EA is that it is faster, cheaper and better in people's relationships [3].

Classic method's pattern is predictable while agile methods use adaptive patterns and predictable methods try to lessen project's misgiving by means of exact and

very complete schematization. Omitting risk's aptness shows the necessities related to usage are fix. In other side agile methods that are started by incipient schematization always evaluated, prefer to accommodate themselves while the text ripen. Evaluating again is the basis for making decision to (go) or (not to go) in each main change at incipient project. Perennial Solidarity among people related to the project is another advantage of agile EA. So agility causes to make a real dynamic team which is fantastic for both customers and developers. Customers find themselves as central role of developing and developers participate in all aspects of that and work as a part of real team. It is more acceptable in comparison to service oriented architecture because of people's more cooperation, adjusting all cases with correct patterns, making stakeholders sure of ending activities ,and satisfaction of stakeholders.

### 3. Future EA

EA is depended on other technologies and structures so it faces important changes at all implementation stages.

#### 3.1. Management of business process

Management of business process is based on business's models in order to make all activities optimum and adjust them with enterprise's further pattern based on central processes of enterprise. Management of business process constrains itself to the project as major implementer of works. Management of business process consists of several processes included [2]:

Synthesizing process: fundamental significances further complete organizing of working processes and dividing duties in order to reduce time and endeavor. This process include analyzing methods' reasoning used in perused certain activities of enterprise's purposes.

Abilities: it includes rational justification of activities, reducing delays, amending reactions, reducing charges, amending quality, emprise and work and all drivers of change's management.

Optimizing process: this is outfitted for separating (details' complexity). It uses discovering and separating problems in little deficiency which skedaddle from upper levels' attention because of their low level of seeing ability. An agile corporation always dominates on complexity of outside by means

of perusing that just after being discovered and changes' outbreak.

Ensemble model: modern enterprise's systems are complex so using of collective capacity forces is necessary in order to dominate on them and make them easy. This model extracts its forces from working knowledge of jobholder who common in research regularly.

Business management's tools collection: it recommends and offers in field of patterning tools' usage and organizing processes. The importance of processes influences management and choosing tools directly. Also it covers controlling aspects (business process's model) [3].

#### 3.2. Future EA finds business meaning

EA is derivative of Business management and uses its patterns. But business process's ability is more than being just a part of work. Nowadays EA is conceived a structure more based on technology architecture and does not pay attention to business architecture sufficiently. In classic EA, the function of technology's usage was so much important. In fact terminating works was based on abilities of current technology but since business process's management, is infiltrated enterprises and satisfaction of EA is one of its new methods' principles especially in agile EA so we cannot know business architecture's abilities cheap rather with a correct viewpoint we can know them as important as technology architecture's abilities. In fact in comparison between current EA and future EA we should point these:

##### Current EA:

- Centralization on manufacture's technology
- Surveillance's and control's fountain
- Soon it become service oriented architecture protector

##### Future EA:

- Centralization on technology and business
- Activation production of value
- Architecture for agile business

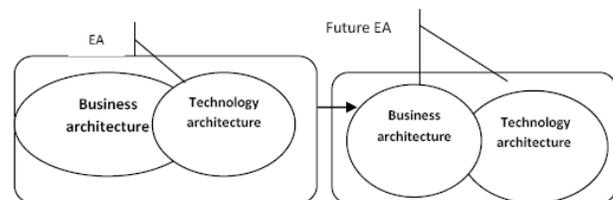


Fig.1 Comparing Current EA with future one

The major reason for that changing is high competition between companies to reach to their goals by EA sooner. For attaining to that purpose combine Agile Structure and business architecture can play main role for that situation.

#### 4. Presenting a new structure based on a balance between technology and business

In future EA there should be a completer combine of technology and business architecture which can interfere with enterprise's strategy and participate in that. In order to receive this result it should connect strategy, architecture and stakeholders to present a business oriented solution. While time passes and manufacture's technology grows there is no place for doubt that EA faces widespread changes too in order to make itself match with these vicissitudes. Paying more attention to business model in contrast with technology is one of these. It is so obvious that business model is formed based on enterprise business activities. In other words it is a BPM1based on working models in order to make activities' collection optimum and reconcile them by means of further enterprise patterning through central enterprise processes. BPM constrains itself as the driver of main work's activities. Figure 2 presents a new structure which balances works and presents a solution by according business abilities and technology. Finding a solution that is formed based on work's traits of enterprises and helps EA's abilities to finish works is the purpose of this structure.

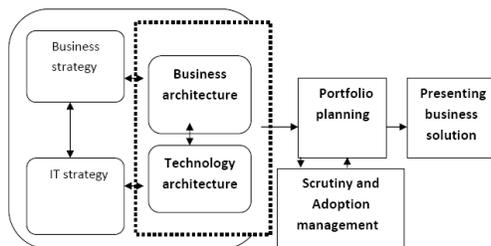


Fig.2 Future EA structure

This structure shows how to accordance and cru tiny works by paying attention to existent relationships among business strategy and technology strategy. And also points that business's and technology's abilities were evaluated for applying works and making Decision about how to face Purposes is done by common working pattern. Introduced solution improves development team's qualification in order to prevent risks at perennial methods responding works and validation of them, normally.

#### 5. Future work

To complete this research, it is better to present a methodology for implementation this approach on EA.

#### 6. Conclusion

How to make a relationship between technology and business in future enterprise architecture's structure causes significant results such as:

- Maintaining comprehensive relationship with business management
- Observing agility during business management
- Utilizing authentic correlation methods
- Utilizing repetitive and dynamic structure which responds to correct working patterns.
- Conducting project to discover a profitable solution which contemplates both technology and business
- Stakeholders' Satisfaction improves, because of further business management function
- Reducing risk by means of work adaption
- Displaying weak situations and substituting sources and works in order to increase efficiency and reduce risk.

Predicating current enterprise structure, designing future enterprise structure, controlling transitive activities to alter the enterprise to designable future structure and Identifying and incorporating works which have something in common or conflict, are the goals of mentioned framework

#### References

- [1] Darvish Rouhani, Babak, Shirazi, Hossain, Farahmand-Nejad, Ali, and Kharazmi, Sadegh, "Presenting a Framework for Agile Enterprise Architecture", International Conference on Information Technology 2008 (IT2008), IEEE Press, Gdansk, Poland
- [2] James McGovern, Scott W. Ambler, Michael E. Stevens, James Linn, Vikas Sharan, Elias K. Jo. "Practical Guide to Enterprise Architecture" . Prentice Hall PTR. October 28, 2003
- [3] Pedro Sousa, Artur Caetano ,André Vasconcelos, Carla Pereira, José Tribolet " Enterprise Architecture Modeling with the Unified Modeling Language" Chapter submitted to the book "Enterprise Modeling and Computing with UML", IRM Press. Revised version. November 2005
- [4] Charles Edwards, Agile Enterprise Architecture – Maturity of an EA Practice, 17th January 2007 Version 0.02
- [5] Bieberstein, N., Bose, S. and Fiammante, M. 2006, Service-Oriented Architecture (SOA) Compass: Business Value, Planning, and Enterprise Roadmap, IBM Press developer Works Series, Pearson Education.
- [6] Ambler, Scott W. Nalbhone, John. Vizidos, Micheal J."Enterprise Unified Process: Extending the Rational Unified Process". Prentice Hall, 2005

- [7] Ambler, Scott W., Agile Enterprise Architecture, Agile Enterprise Architecture: Beyond, Enterprise DataModeling, 2006
- [8] Carla Marques Pereira, Pedro Sousa, "A Method to Define An Enterprise Architecture using the Zachman Framework" 2004 ACM Symposium on Applied Computing
- [9] John A. Zachman; "A Framework for Information Systems Architecture ", IBM Systems Journal, 26(3):276-291, 1987
- [10] Laudon, Kenneth C., and Laudon, Jane P, "Management Information Systems: Organization and Technology in the Networked Enterprise", Prentice-Hall, 2000

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