INTERPRETATION OF SERVICE-ORIENTED ARCHITECTURE (SOA) WITH ORGANIZATIONAL STRATEGIC PLANNING

MOHAMMAD GHASEMI\textsuperscript{a} AND HAMIDREZA OVEISI KEIKHA\textsuperscript{b}

\textsuperscript{a}Assistant professor in University of Sistan & Baluchestan, Zahedan, Iran
\textsuperscript{b}MA in Industrial Management (Major: System Management and Productivity, Islamic Azad University, Zahedan Branch)

ABSTRACT

Today, the process of codifying Enterprise Architecture, which was invented as a method for planning IT layer in the organization from the beginning, gradually has been more widely used and it indicated the importance with entering in more strategic fields of organizational structure including modeling and improvement of business processes and overall organizational strategy. The lack of proper relationship among such projects and process of organizational strategic planning is one of the problems, which have threatened projects of enterprise architecture in such a way that ambiguity in organizational strategies and absence of a formal process for codifying strategy, which provides the needed entries to start process of enterprise architecture, are always considered as the foremost reasons for failure in projects of enterprise architecture. A type of outlook toward the organization based on hierarchical structure, process and service orientation and proportional design of enterprise architecture to it may play important role in facilitation of establishing a link among strategic planning and enterprise architecture. Accordingly, with exploring into the considered elements and priorities in strategic planning process and Service-Oriented Architecture (SOA) in the followings, the maximum compliance between these two factors to each other is defined that this subject may show the advantage of Service-Oriented Method compared to other models in this sense.

KEYWORDS: Enterprise Architecture, Strategic Programming, Service-Oriented Model, Organizational Agility

Every system, organization, and institution needs to adaptation to surrounding variable and inevitable conditions caused by constant variations in order to keep its survival and furtherance of its objectives in modern competitive environment per se. These changes may cause the organization or a system to become more complicated continually so at this point Enterprise Architecture plays up more prominent role since achieving organizational goals requires consuming a lot of cost and time without considering this issue so this exclusively seems impossible and if it is possible many problems may arise in line with achieving organizational goals as well.

Nowadays, enterprise architecture approach is employed as a dominant model in organizational planning in public and private organizations in the country more than ever [1].

Any organization needs to be flexible more than ever for the sake of successful competition. Accordingly, it should possess a certain structure in order to have the needed agility versus accelerated changes. Many organizations move in the path of compliance with service-orientation to achieve this objective so this makes it possible for the organization to define, create, and execute several services and contributes to organization to create potential for quick adaptation of services with faster organizational reaction to these changes [2].

ENTERPRISE ARCHITECTURE

Term “Enterprise Architecture” is composed of two words (enterprise and architecture). Architecture is a description that is usually used in relation to complex or specific structures. Similarly, this architecture looks at the future with prediction and it is prospective. Architecture may predict and show the future situation of elements in a complex structure as well.

Concept of organization in enterprise architecture may include a normal organization or an organization consists of several other organizations. The organization comprises of all of its sources (including personnel, organizational units, and technology etc) as well, which are typically interrelated. Architecture of status quo includes a group of descriptions, which show the current organizational position in terms of missions, working processes, and technological infrastructures. Architecture consists of a group of illustrations, which reflect the appropriate organizational position. This type of architecture is originated from organizational long run strategies and plans; transitional project or transitive planning is a document that shows the needed strategy.

\textsuperscript{1}Corresponding author
and planning to transfer organization from the status quo to an appropriate condition [1].

**STRATEGIC PROGRAMMING**

Strategic programming is a process that most of prosperous and leading organizations of the world are benefitted from this process to guide and advance their own plans and activities with long run prospective horizon and to achieve organizational goals and realization of organizational mission. This type of programming, which has been so far adapted by the great organizations, if is codified properly it will lead to taking strategies and will be followed by excellence and pioneering of organization in the case of properly and on time execution [3]. Strategic programming identifies environmental opportunities and threats and internal strong and weak points through examining external and internal environment of the organization and given that organizational mission, it regulates long- term goals for the organization and takes strategy to achieve these objectives among strategic alternatives so it may remove weak points with reliance on strong points and through exploitation from opportunities and avoids from threats in order to cause organizational achievement in competition field provided properly execution of the strategy. Every organization with any size is exposed to quick changes and developments at age of information and electronic communications and it should plan and manage its own activities in such a way that can acquire success in a turbulent environment and extremely competitive market and to survive. With respect to concept of strategic programming, this measure requires utilization from this type of planning since on the one hand it is prospective and it may take the appropriate efforts by prediction of next developments and on the other hand it tends to the environment and it is interrelated with this environment so it can be rapidly aware of environmental changes and react appropriately and quickly from this perspective [4].

**THE RELATIONSHIP AMONG ENTERPRISE ARCHITECTURE AND PROCESS OF STRATEGIC PROGRAMMING**

To define relationship among enterprise architecture and strategic programming, we examine graphic description of two factors. Strategic programming process is implemented generally at three levels of enterprise, business, and task:

![Figure 1: Organizational strategic programming](image)

On the other hand, enterprise architecture is composed of three modeling phases: architecture of existing situation, appropriate architectural design, and planner’s codification. The strategic programming should be logically executed prior to enterprise architecture, but by considering that enterprise architecture process needs to entries from strategic programming process at the existing architectural modeling phase [7].
Figure 2: The integrated schemata of architecture and organizational strategic programming

With respect to the above figure, the relationship among enterprise architecture and strategic programming process may be presented in the following table, which defines the relationship among enterprise architecture and strategic programming process and the interaction between them:

Table 1: The relationship among enterprise architecture and strategic programming process

<table>
<thead>
<tr>
<th>(Existing) structure</th>
<th>Existing architectural modeling</th>
<th>Organizational current status</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Existing) tasks</td>
<td>Existing architectural modeling</td>
<td>Organizational current status</td>
</tr>
<tr>
<td>(Existing) processes</td>
<td>Existing architectural modeling</td>
<td>Organizational current status</td>
</tr>
<tr>
<td>(Appropriate) structure</td>
<td>Planner</td>
<td>Modeling of existing architecture and appropriate architectural design</td>
</tr>
<tr>
<td>(Appropriate) tasks</td>
<td>Planner</td>
<td>Modeling of existing architecture and appropriate architectural design</td>
</tr>
<tr>
<td>(Appropriate) processes</td>
<td>Planner</td>
<td>Modeling of existing architecture and appropriate architectural design</td>
</tr>
</tbody>
</table>

NECESSITY OF SELECTING APPROPRIATE STRUCTURE OF ENTERPRISE ARCHITECTURE

At present, several organizations, especially big-size organizations, encounter some problems to execute enterprise architecture process and particularly organizational architecture programming. Enterprise architecture process is very lax, slow, corrosive, and cost-consuming as a result it leads to lack of proper execution and even failure.

Constant, wide, and unexpected changes in technological field and or missions of an organization are some of the paramount reasons for slowness and corrosive trend of enterprise architecture process and the prevalent structures of enterprise architecture are very fragile when they are exposed to unexpected changes. For this reason, their execution has been threatened and it may be led to failure. With respect to the above contents, for successful programming and execution of enterprise architecture in turbulent organizations, it is required considering optimal architecture to have appropriate agility versus changes [5].

ELEMENTS AND SPECIFICATIONS OF SERVICE-ORIENTED ARCHITECTURE AND ITS COMPLIANCE WITH ORGANIZATIONAL AGILITY

A service-oriented model is composed of four key elements:

- Service provider
- Service user
- Service
- Service-giving channel

One of the important characteristics of service-oriented model is restricted and transparent constituent elements. Unlike process-based model or hierarchical
models, which are composed of various and relatively complex elements, service-oriented model is concise and transparent.

![Figure 3: Elements of service-oriented model and their relationship with each other](image)

The properties of Service-Oriented Architecture:

- Agility in skill by the needed information sharing for beneficiaries within the framework of services;
- Agility in agreement with accessibility of services, which may be adapted to ever-changing requirements of users;
- Lowering costs due to the existing certain standards as well as reusability of services;
- Improvement of efficiency due to organizational modularity and reusability of services;
- Facilitation in utilizing from modern technologies because of employing modular services [6]

Service-Oriented Architecture (SOA) since transient errors in some part of work flow may not interrupt total business process. In general, Service-Oriented Architecture purposes an evolved process and in fact Service-Oriented Architecture realizes the principles of organizational agile architecture.

**CONCLUSION**

Today, organizational activities in a turbulent and ever-changing environment caused by accelerated technological growth and changing customers' tastes and rising number of rivals etc may require them to enter into key areas for their own excellence including codification of organizational strategic programming and laying foundation for architecture proportional them.

With exploration in outside and inside environment, strategic programming identifies opportunities, threats, strong, and weak points in the organization and it regulates long-run goals for organization by considering organizational mission and takes strategy among strategic alternatives in order to achieve these objectives so that to remove weak points and to prevent from threats with reliance on strong points and by exploiting from the opportunities. Focused on SWOT matrix, this process provides the needed readiness for exertion of change in the organization and causes organizational success in competition field by its proper execution.

The importance of enterprise architecture in recognizing organization and purposing information about organization is necessary and significant and it is followed by important benefits for the organization including improvement of decision making due to the presence of information and better and further information from organization, faster change and better adaptation to conditions and faster reflection of this factor in organizational IT, identifying the existing assets in the organization that may not be utilized perfectly and usefully and or even not seen.

The classic techniques of enterprise architecture are exposed to several problems in highly turbulent climates of scene of activity in modern organizations and under the conditions where organizations are faced with shortage of sources and time and on the other hand due to developing of employing modern technologies, they have to produce flexible goods and services to attract customers’ satisfaction so we requires taking a new approach toward enterprise architecture. With respect to expansion of changes and this turbulent trend, one could no longer define the existing situation and appropriate condition in static form and then plan to move from the status quo to appropriate programming condition. One of the advantages of strategic programming process is in that it is tried to manage the condition based on SWOT matrix in the future and at the same time modern methods of enterprise architecture are also tried to prevent from
fragility of enterprise architecture in turbulent and ever-changing organizations. These issues may interpret the maximum compliance of strategic programming process with service-oriented architecture.

SUGGESTIONS FOR FUTURE RESEARCHERS

Ever-increasing prevalence of employing service-oriented models in organizations requires paying attention to the subject of security as some part of maturation topic for these models, particularly in key organizations. Rather than defining service parameters and their improvement and promotion, this issue can be the subject for future investigations.

REFERENCES


Schekkerman, Jaap. 2007. How to survive in the jungle of enterprise architecture frame: Creating and choosing an enterprise architecture framework“,

