Enterprise Architecture – A Tool for Business Innovation Realization in the Enterprise

[1,]Mgbeafulike Ike and [2,]Okonkwo Obikwelu R
[1]*Dept of Computer Science, Anambra State University, Uli, Anambra State, Nigeria*
[2]*Dept. of Computer Science, Nnamdi Azikiwe University, Awka, Anambra State, Nigeria*

---**ABSTRACT**--
Enterprises globally are undergoing business transformation. Organisations and corporate world have been searching for ways to enhance their businesses in order to be agile and how development in information technology (IT) can help them achieve this in today's unstable economic climate. Large-scale changes in the business affect operations, which in turn impact business systems. Changes in the underlying technology infrastructure are often needed to enable business transformation. The study carried out shows that architecture is the key to managing complexity and scale of change in the business. The method used is the integration of the processes for strategic, business, operations, systems and technology planning in a way that also integrates with other business and technology governance processes. Enterprise Architecture provides a framework to describe, manage and align the various elements of an organisation such as business processes, information, applications and technology and enables to understand the relationships between these elements and their environment to better facilitate change. This article proposes enterprise architecture (EA) as an effective Tool to Business Innovation Realization in the Enterprise.

Keywords: Enterprise Architecture (EA), Business Innovation, information system, information technology (IT), strategic planning, business agility, technology planning, integration.

Date Of Submission: 18 April 2013   Date Of Publication:20,May.2013

I.   INTRODUCTION

When competing in a rapidly changing economy, one that is competitive, global, and unpredictable, survival depends on an organization's agility and responsiveness to changing industry and economic forces, addressing product commoditization, government regulations, emerging technologies, and globalization. Today's market conditions demand better alignment and synchronization of business strategy, processes, and technology. Unfortunately, business and IT architectures that are supposed support innovation and competitive advantage are often disconnected, thus severely constraining an organization's agility. The successful organization of the future will be an engine of continuous transformation that adjusts to offer solutions to its constituents at a lower cost and faster time-to-market than its competitors. This transformation requires an integrated Business and Technology Architecture- Enterprise Architecture - that not only dynamically coordinates business and technology components and processes within the organization and across its value chain, but also supports the organization for long term, cost-effective growth. Enterprise Architecture (EA) is a method and an organizing principle that aligns functional business objectives and strategies with an IT strategy and execution plan. The Enterprise Architecture provides a guide to direct the evolution and transformation of enterprises with technology. This in turn makes IT a more strategic asset for successfully implementing a modern business strategy. By taking an enterprise-wide perspective across business services, business processes, information, applications, and technology, an EA ensures that enterprise goals and objectives are addressed in a holistic way across all IT projects.

To be successful, an Enterprise Architecture needs to be woven into the enterprise's culture, not treated as a closed-scope project. The value of an EA is greatly enhanced when it is organically embedded into the lifecycle of the organization, including capital planning, project management, asset management, resource allocation, strategy formulation and business innovation (IFEAD, 2002). Enterprise Architecture is a journey, not a project. It evolves over time and needs to maintain the flexibility required to adjust to changing market conditions, strategy shifts, and new innovations in technology. EA frameworks have emerged to manage the increasingly complexity of innovation and change.

Enterprise Architecture is as much about ongoing communications among business and IT leadership as it is about technology innovations and architectural choices. Enterprise Architecture facilitates business and IT communication with common language, process, and structure. Innovation can be described as the method of exploiting new ideas to create value through new processes, products or services. Innovation is often associated with creative thinking and using techniques to help people "think outside the box" to come up with new ideas. Innovation can be closed, where all innovation is performed in-house, or open, where ideas and technologies are brought into the organisation from outside its boundaries to enhance the innovation process (Krause, 2012). Enterprise Architectures are used to provide structure and visibility of the business to assist in standardizing processes and giving clear guidance when embarking on new projects of how the organisation fits together and how it will be impacted by change. Innovation is described as the method of exploiting new ideas to create values through new process, products or service. It includes the set of tasks required to accomplish the directed and funded efforts to provide a new, improved, or continuing information system or services capability to satisfy a business need. Thus, an EA contains business operation information for decision support and communication and informs decision-makers about what technology to acquire and when. This article illustrates how enterprise architecture can both provide a clear picture of the goals that lie ahead for the enterprise, as well as providing innovative ideas that will help satisfy the organizational requirements and scheduling needs.

II.   CURRENT CHALLENGE

In today's unstable economic climate, we are seeing many organisations searching for ways to enhance their businesses to get more market share – or at least not lose any. Innovation is being hailed as an important factor for achieving this, with prominent companies placing emphasis on the importance of innovation in their annual reports and shareholder meetings. Over the last three or four decades, nearly all businesses have installed increasing amounts of computing hardware and software. Today, most businesses simply could not operate without computers – and this will become increasingly more so with each passing year. This development is rightly justified because information is the life-blood of the corporation. Without information systems, a corporation simply cannot operate. But, are businesses realizing the expected benefits from their investment in information systems? In most cases, the answer is NO. Why are the benefits not being realized? As with most complicated problems, there is no simple answer. One very significant contributing factor is the manner in which information systems projects proceed. One of the first phases in nearly all projects is 'define the current situation', or 'analyze the current systems', or 'define the current processes' – the discovery phase of the project. This situation demonstrates the lack of Enterprise Architecture. If a company maintains an Enterprise Architecture, the current situation is immediately obvious. The discovery phase of the project can be avoided altogether. During the discovery phase of the project, certain architecture-like artifacts are usually produced – process diagrams, entity relationship diagrams, infrastructure diagrams, and other similar artifacts. These artifacts form the basis for the new project. However, there are usually some fundamental problems with these artefacts. Because they are created within the context of the project, they are seldom correct and almost never complete – from the broader context of the enterprise. The project may call these 'architectural artifacts', but they are 'application artifacts'. They deal with the aggregates found in the current situation and do not identify the primitives upon which architecture must be based. Of course, when the project is over, they are not maintained, generalized, or extended. They are simply thrown away (or equivalently left on shelf). This situation illustrates one of the most obvious paybacks from Enterprise Architecture. The discovery phase of each project can be avoided at considerable saving. The development of throw-away artefacts is a complete waste. The Enterprise Architecture provides a complete and correct basis from which to launch each new project. It is reusable for every project. There is no waste.

III.   METHODS

Enterprise Architecture properly sponsored, fully funded, properly maintained, and effectively utilized provides the means to realize business innovation supported by information technology and information systems and integrating innovation into current organizational structures. All corporations need information systems and innovation, but information services have been poor at servicing the need. Enterprise Architecture provides the glue to bind the business innovation and information services into a fully functional whole entity. This allows the business to perceive information services as an integral part of the business. Enterprise Architecture is recognized as an asset and the information systems also become an asset. Enterprise Architecture and information systems become an important means to carry out the business innovation. EA successfully integrates strategic planning, business planning, and technology planning… making the enterprise more focused. EA is the authoritative source for reference documentation and standards, making governance more effective. EA is a repeatable, scalable methodology, making the enterprise more agile. EA helps to manage and drive

change, in alignment with strategic and business goals, making the enterprise more successful. The method employ is the enterprise architecture framework as shown in fig. 1.
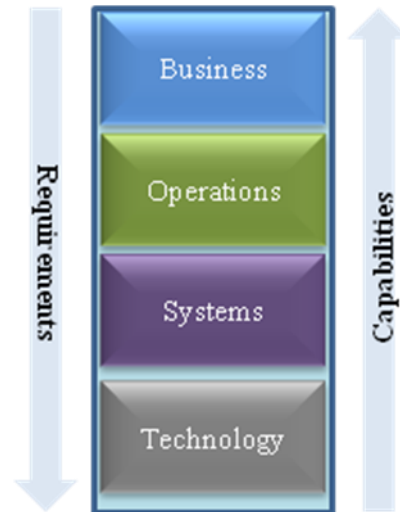
Fig. 1. EA Framework (Proact Tranformation Inc.)

The Business View defines the business that needs to be innovated. The operations view defines the capabilities needed to support the business, the system view defines the applications and tools that are needed and the technology view defines the technology that will be used to enable the applications and tools.

IV.   ENTERPRISE ARCHITECTURE AS A TOOL

Business innovation involves a wide spectrum of original concepts, including development of new ways of doing business, new business models, business application of technology and communications, new management techniques, environmental efficiency, new forms of stakeholder participation, telecommunication, transport and finance. Managing change of enterprise scale and complexity requires a structured approach that can holistically cover all impacted areas of the business and plan for major changes in business capabilities to achieve strategically relevant outcomes. Architecture is critical to managing complexity. Enterprise architecture is the process of translating business vision and strategy into effective enterprise change by creating, communicating, and improving the key requirements, principles, and models that describe the enterprise's future state and enable its evolution. Enterprise Architecture provides a tangible and practical means to capture the information and the knowledge which forms the basis of the enterprise. This facilitates the management of change and the realization of benefits. It is the missing ingredient in over forty years of information systems spending. Enterprise Architecture is the glue to bind information systems into the business forming a smoothly running corporate entity. The enterprise architecture framework includes business, operational, system, and technology views. Reference architecture provides common taxonomy, promotes cross-collaboration. Operational scenarios provide essential context for identifying gaps and bottlenecks in business capability. Operational requirements are mapped to systems; systems are mapped to technologies that power them. EA does this primarily by integrating the processes for strategic, business, operations, systems and technology planning in a way that also integrates with other business and technology governance processes. Enterprise Architecture (EA) is the organizing logic for business processes and Information Technology (IT) infrastructure, the purpose of which is to create a more effective organisation in the context of the business's strategy and goals.

V.   RESULTS AND DISCUSSIONS

Enterprise architecture is the holistic view of the enterprise processes, information and information technology assets as a vehicle for aligning business and IT in a structured, more efficient and sustainable manner. EA is a management program that provides a strategic, integrated approach to resource planning. An EA program is part of an overall governance process that determines resource alignment, develops standardized policy, enhances decision support, and oversees resource development activities. EA can help to identify gaps in the performance of line of business activities and the capabilities of supporting IT services, systems, and networks.

[1] Enterprise Architecture is critical in determining factors for business survival and success: Efficient enterprise architecture is one of the key means of achieving competitive advantage through information technology. Business leaders of today know that effective management and exploitation of information through IT is the key to business success.

[2] Enterprise Architecture enables managed innovation within the enterprise: innovation is critical, especially in today's rapidly changing technology and business landscape. Having a technology architecture that supports and provides the IT strategy and provides the flexibility to achieve the right balance between IT efficiency and business innovation is a keystone to business adaptability and growth.

[3] Resource Alignment: EA supports strategic planning and other operational resource planning processes by providing macro and micro views of how resources are to be leveraged in accomplishing the goals of the enterprise. This helps to maximize the efficiency and effectiveness of these resources, which in turn will help to promote the enterprise's competitive capabilities.

V. CONCLUSION

EA is an effective way to develop current and future views of the entire enterprise, or parts of the enterprise, on an ongoing basis. EA does this primarily by integrating the processes for strategic, business, operation, system and technology planning in a way that also integrates with other business and technology governance processes. Once defined, an Enterprise Architecture is like a living organism. It becomes part of the corporate culture. It will quickly die if it is not used and maintained. Properly used, it will grow and develop and guide the growth and development of the enterprise. Enterprise Architecture is a tool to be used in achieving the benefits of investments in information systems. Adopting an enterprise architecture approach can significantly help organizations align their technology and business strategies to achieve their goals. An enterprise architecture approach helps ensure that the business has the capabilities that it needs to be successful today and in the future. It enables enterprise architecture teams to maximize their effectiveness in aligning people, processes, and systems with business and technology goals (Cisco, 2008). Integrating business strategies with technical architectures, and implementing associated IT best practices, can go a long way toward enabling enterprise business innovation. EA is a repeatable, scalable methodology, making the enterprise more agile. EA helps to manage and drive change, in alignment with strategic and business goals, making the enterprise more successful.

REFERENCES

[1] Cisco Systems (2008), Demonstrating the Value of Enterprise Architecture in Delivering Business Capabilities.
[2] Institute for Enterprise Architecture Developments (IFEAD, 2002), Business and Information Architecture Concepts.
[3] Sowa, J.F., and Zachman, J.A. (1992), '*Extending and Formalizing the Framework for Information Systems Architecture*', IBM Systems Journal, Vol. 31, No. 3, 1992.
[4] Thorpe, J (2008), The Information Paradox, McGraw-Hill, Toronto, 1998.
[5] Willie Krause (2012), Enterprise Architecture and Innovation: Synergy or Paradox?
[6] Zachman, J.A. (1987), '*A Framework for Information Systems Architecture*', IBM Systems Journal, Vol. 26, No. 3, 1987.