

## ENTERPRISE ARCHITECTURE: OPTIMUM UTILISATION OF INFORMATION TECHNOLOGY IN BUSINESS

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### ABSTRACT

*While simulating the working mechanism of business organizations it has been seen that there is a rapid change in last few years with the increasing involvement of computer and IT. With the use of new technologies companies are trying to speed up their development cycles. Now days all over the world most of the big businesses are in distributed form, so to make the overall progress quicker, there is need of better understanding, sharing of resources and deep knowledge of system structure among these distributed sub units. More important is the overall objectives of the organization, to meet which some common knowledge base in the form of enterprise architecture is required to all.*

*Enterprise architecture is the overall view which provides the detailed study related to composition of constituent architecture (core business functions) with information technology, which should be effectively mixed to optimize the strategies of the organizations. At first sight it seems to be very difficult for the organizations to adopt and implement the concept of EA, because its implementation require very disciplined and planned engineering under IT environment. Without planning investment on IT environment will not provide the optimum results, for it there is need of some standard EA guidelines on the basis of which it will be easy for the organization people to understand architecture of the organization.*

*This paper stressed on the study of effective utilization of EA in the Business. There are few important concepts namely design, development, implementation and maintenance of EA which are directly related to the success of the any business.*

**Keywords:** *Business Organizations, Strategies Measures, Architecture, competitive, Control Policies, Functional capabilities.*

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**Information Technology in Business:** In the early age development of Information Technology, it had been seen that computer and IT was mixed with business without knowing the exact strength of IT and without analyzing the benefits business can have from IT structure. Computers and IT infrastructure was involved as a mere status symbol or for creating a panic for the competitive. With the passages of time cost factor analyzed and found that IT was not giving the optimum utilization to the businesses. Business persons started to see IT as a burden for the business due to its maintenance and changing technologies in hardware as well as software.

Actually solution to this problem was IT itself, because with the help of IT you can better understand the needs and priorities of the concerned business. A thorough analysis of business strategies was required which was again possible with the help of IT infrastructure. The data collection and information abstraction was again the major area for strategic analysis, which was again possible with the help of IT utilities. With the help of IT utilities you can build a model based study and study of the areas where exactly IT involvement is required to enhance the business or overall profit of the enterprise. Optimum utilization of IT performs three vital roles in any type of enterprise / business:

1. Support of business operations.
2. Support of managerial decision making.
3. Support of strategic competitive advantage.

Regular development in this study and model based approach has lead to the new term i.e. Enterprise Architecture.

**Introduction to Enterprise Architecture (EA):** EA is an overall complex detailed investigation of enterprise components, which includes core business processes, their implementation planning (which will be some strategic based) under some governance rules, business structure, information flow among different components in the information technology environment. Here IT environment includes information system and databases, for their further smooth implementation need of computers, operating systems and networks.

In short EA is considered as blueprint of the organization structure and its core business processes working with proper support from the IT utilities to achieve the preset goals under some strategies.

**Scope of EA:** Enterprise is the general term used to represent

- An individual business or organization
- A sub unit of some large business
- Partnership oriented business etc.

**Architecture:** detailed structure of concerned entities and their attributes.

**Development of good EA:** For the development of good enterprise architecture which will be fruitful for the business, following are the major components without which you can not think about good enterprise architecture, these include:

- Dedicated team with excellent leadership.
- Composition of business personnel and IT experts.
- Knowledge of shared interfaces.
- Well defined decomposition of entire business.

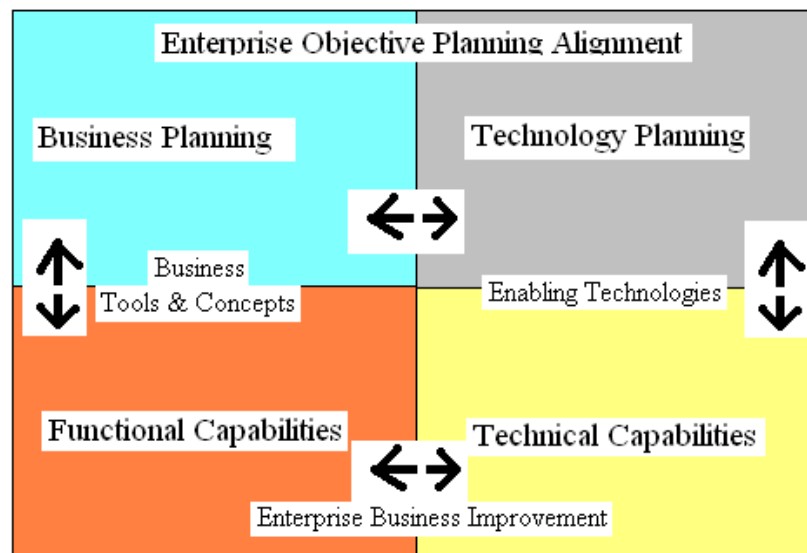
The final product should have the following characteristics:

- The complete understanding of enterprise with the help of its thorough decomposition.
- Capability to structure each decomposed level with the architecture.
- Common and understandable language with mixing of concerned business terminology to share and create a knowledgebase for current and future use.

**Early age acceptance issues:** EA varies from business to business depending upon the requirement and strategic planning of the business, so common model can not be developed for all business enterprises, and further there are many reasons given by the associated persons in the early time of its development. Some of the reasons include:

- Unable to represent overall structure of the Business.
- While interacting with other companies or businesses very few components are used.
- Most of the time low level functionality was missing.
- User did not rely on given analysis.
- Artifacts developed vary from one sub unit to another sub unit.

**Working structure of EA:** The persons who are responsible for designing EA of the organizations are known as Enterprise Architects. For providing explicit structure and documentation they use different business methodologies, analysis tools, various concept based analysis etc. The end product produced by these enterprise architects can be in the form of lists, documentation, drawings, blue prints or even composition of these specified items in the form of some models usually called artifacts. Now these models will be used to describe the core business processes, manpower distribution on different levels, different IT related resources available in the organization in the form of computing capabilities, available hardware, software, and network resources and information flow monitoring routines and their co-ordinations among themselves.



**Fig 1: Most accepted Enterprise Architecture's working structure**

Now these individual models corresponding to sub parts of the organizations are collected and organized in some logical manners will provide the overall structure as well as set profit increasing goals and objectives and any component of the organization under concentration. Business dependency has proved that EA is not a mere information system employed by the organizations but it has become the lifeline of the organizations.

**Enterprise Architecture Framework:** is considered as a composition of business related facts, techniques, detailed artifacts, process models and knowledgebase, which will be used time to time by the architects for the maintenance as well as for the production of enterprise – specific architectural description.

**Enterprise Architecture Domains:** Different studies are there in this field to describe the domains of EA but most commonly used and world wide accepted four domains are:

1. Business

- Strategic planning, set targets, environment, working models
- Processes decomposition, business capabilities
- Workflow, rules and responsibilities
- Periodical settings and environmental constraints
- Hardware, software and services suppliers

2. Information

- Data Architecture: Deals with data management, how it will be collected, stored, processed and retrieval format required by the end user.
- Information Architecture: Overall view of information flow according to requirement of different sub units of the enterprise.

- Maintenance of master data: Concurrency, reliability, updating and controlling of unauthorized access to that part of data which is accessible by no. of applications running in the system.
- Maintenance of meta data
- Quality control: Deals with the way of collection of data and checks upon different data sources.
- Modeling: Data can be collected and stored for the future retrieval in the form of conceptual, logical or physical model.
- Life cycle: How data and information will be processed, classified, distributed, maintained, distributed to users and throwing obsolete data / information.
- Expert man-power: Personals from the concerned field for the analysis, decision making, reporting and for query handling.

### 3. Applications

- Application software's running in the enterprise.
- Networking resources.
- Interfacing utilities.

### 4. Technology

- Setup of hardware, software, platforms, servers, data centres and computer rooms.
- Internet connectivity diagrams showing structure of LAN, WAN or MAN according to requirement.
- Middleware.
- Running application, operating systems and operating environment.

**Enterprise Architecture Uses:** Although this concept is not so popular among the small businesses and enterprises situated in undeveloped countries but still with passage of time and IT development it is very much clear that EA can boost the overall performance of the enterprises. Few of the important uses which are common to all are:

1. EA acts as a holistic guide and resource for the strategic planners sitting in the top management.
2. Provide understandable model to non technical management persons to understand technical complexities of the system.
3. Day by day there are changes in business environment due to effects of external entities, to meet with these changes and for the survival of business, EA responds to by adapting its processes, information and technologies to meet the new demands.

4. EA acts as a strategic resource that aligns business and technology. It further includes relationships between strategic and operational plans.
5. EA brings value to the enterprise.
6. EA is useful to trace exceptions to the architecture and will be able to control and handle these exceptions.
7. EA reflects the current state of business and involved technology.
8. Consistent and common approaches are used to plan and develop information system in the enterprise.
9. IT planning and investments will be consistent with the EA.
10. It will be easy to understand and identify IT initiatives, its present states and future maintenance and advancement according to system needs.

## CONCLUSION

With the regular changes in IT sector and business environment, all over the world concerned persons have started to realize the actual strength of enterprise architecture (EA). EA is not only the holistic view of the organization but also providing low level details of different modules of the organizations. Cost factor of investments and planning can be refined if EA is there for the proper decision making before actual implementation. EA has become the necessity of big organizations but its modeling will be fruitful for the specific business only if there is clear cut analysis regarding “What we want to get from it” has been done, otherwise EA is not warranty for the success of business and profit growth.

It has been proved that EA is not mere Involvement of IT in business, but is provide the solution like up to which extent IT involvement is required and in which sub modules it is required to speed up the overall performance of the organization. Dynamic changes in the IT sector and business environment normally impose a pressure on the organizations but accurate and evaluated EA is the only tool to reduce the response time for tradeoff analysis, strategic planning, tactical reaction and impact assessment.

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