

## Introduction to Enterprise Architecture

### Enterprise Architecture

**Architecture** is the art and science of designing complex structures, which involves fundamental concepts or properties of a system in its environment, embodied in its elements, relationships, and in the principles of its design and evolution (Lankhorst, 2017). It is a strategic instrument in guiding an organization through a planned course of development.

**Enterprise** is a collection of organizations that has a common set of goals, objectives, and/or a single targeted outcome.

**Enterprise architecture** is a coherent collection of principles, methods, and models that are used in the design and realization of an enterprise's organizational structure, business processes, information systems, and infrastructure (Lankhorst, 2017).

### Overview of Enterprise Architecture Process

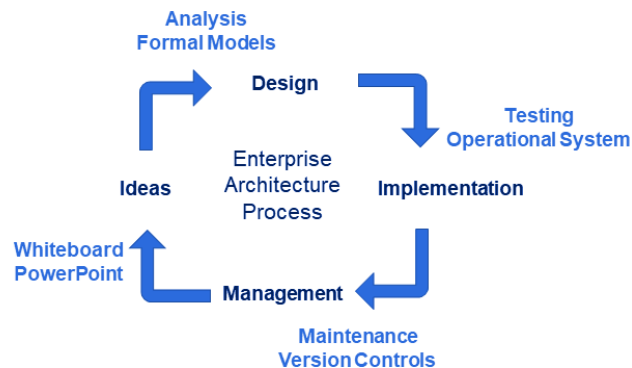


Figure 1. Enterprise architecture process

According to Lankhorst (2017), the architecture process is composed of steps that originate from an idea, which are analyzed and designed, implemented as an operational system, and managed for maintenance and updates.

- **Internal Drivers** – These pertain to the organizational and IT infrastructure and processes.  
Examples:
  - Vision and mission of an organization
  - Availability of technology
  - Business process

- **External Drivers** – These pertain to the business and IT strategies and standards.  
Examples:
  - Regulatory frameworks
  - Government laws
  - Industry and technological standards

### Related Governance in Enterprise Architecture

- **Strategic Management** – It is the identification, selection, and implementation of an organization's long-term goals and objectives (Association for Project Management, n.d.).
  - **Balanced Scorecard (BSC)** – This is a management system that helps an enterprise to clarify and implement its vision and strategy. BSC suggests viewing an enterprise from four (4) perspectives:
    1. Customer perspective
    2. Financial perspective
    3. Internal business process perspective
    4. Learning and growth perspective.
- **Business Model Development** – It is the development of a model that identifies the products or services the business will sell, the target market it has identified, and the expenses it anticipates (Kopp, 2019).
  - **Business Model Canvas** – This is a template in creating high-level descriptions of new or existing business models. It consists the following elements: value propositions, key activities, key resources, key partners, customer segments, customer relationships, channels, cost structure, and revenue streams. These are laid out in a user-friendly and intuitive manner.
- **Business Architecture** – This is a blueprint of an enterprise that provides a common organizational understanding and is used to align strategic objectives and tactical demands (Lankhorst, 2017). This also provides a business-oriented abstraction of the enterprise in an ecosystem which translates strategies into actions.
- **Quality Management** – It is the act of overseeing different activities and tasks within an organization to ensure that the products and services offered, as well as the means used to achieve them, are effective in achieving and maintaining the desired level of quality within an organization (Corporate Finance Institute, n.d.).

- **IT Governance and Support** – It involves the processes that ensure the effective and efficient use of information technology in enabling an organization to achieve its goals (Gartner, Inc., n.d.).
  - **Control Objectives for Information and Related Technology (COBIT)** – It is an internationally accepted IT control framework that provides organizations with a set of “good practices” that helps in implementing an IT governance structure throughout an organization.
  - **Information Technology Infrastructure Library (ITIL)** – This is the most widely accepted set of best practices in the IT service delivery domain, which is composed of series of documents giving guidance on the provision of good IT services, including the facilities that need IT support, in a process-oriented approach.
- **IT Implementation** – It involves the process of combining the developed software or application with the other management and engineering processes (Lankhorst, 2017).
  - **Capability Maturity Model Integration (CMMI)** – This is a model that provides numerous guidelines for assessing the maturity of an organization and the improvements needed in various process areas to proceed from one level to the next.  
These are the five (5) maturity levels of CMMI:
    1. **Initial** – Processes are usually impromptu and chaotic.
    2. **Managed** – Processes are planned, performed, measured, and controlled.
    3. **Defined** – Processes are defined in terms of standards, procedures, tools, and methods.
    4. **Quantitatively Managed** – Quantitative objectives for quality and process performance are established and used as criteria in managing process.
    5. **Optimizing** – Processes are continuously improved in the technological aspect of the organization.

### ArchiMate Language

- **ArchiMate Specification** (The Open Group, n.d.)
  - A standard developed by The Open Group
  - An open and independent modeling language for an enterprise architecture that is supported by different tool vendors and consulting firms

- Provides instruments that enable enterprise architecture to describe, analyze, and visualize the relationships among different business domains
- A common language for describing the construction and operation of business processes, organizational structure, information flows, IT systems, and technical infrastructures

### Symbolic and Semantic Models

- **Symbolic Model** – This model expresses the properties of a system architecture using symbols that refer to reality.
- **Semantic Model** – This model interprets the meaning of each symbol in a symbolic model.

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