

Enterprise Architecture Layer Concepts

Motivation Concepts

- These are used to model the enthusiasm, including the reasons, that instigate the design or change of an enterprise architecture.
- These influence, guide, and constrain the design process of an enterprise architecture.

Terms Related to Motivation Concepts:

- **Stakeholder** – It is the role of an individual, team, department, or organization that represents their interest in the outcome of the architecture.
- **Driver** – It is an external or internal condition that motivates an organization to define its goals and implement the necessary change to achieve them.
- **Assessment** – It is the result of an analysis of a particular business issue within the enterprise with respect to some drivers.
- **Goal** – It is a high-level statement of intent, direction, or desired end state for an organization and its stakeholders.
- **Requirement** – It is a specific statement of need that architectural designers must meet.
- **Constraint** – It is a factor that averts or hinders the realization of goals.
- **Principle** – It is strongly related to the organization's goals and requirements. It is considered a qualitative statement of intent that should be met by the architecture.
- **Outcome** – It is a result that has been achieved.
- **Value** – It is the relative worth, usefulness, or importance of a core element or an outcome.
- **Meaning** – It is the knowledge or expertise present in a business object or its representation, given a particular context.

Strategy Concepts

Course of Action

- This represents what an enterprise has decided to do to realize its goals.
- This is an approach or plan for configuring capabilities and resources of an enterprise undertaken to achieve a goal.

Capabilities

- These are considered the key building blocks of a business, unique and independent from each other, and tend to be stable over time.

- These are typically aimed at achieving some goal or delivering value by realizing an outcome.
- These are abilities that an active structure element, such as an organization, person, or system, possesses.

Resources

- These are assets owned and/or controlled by an individual or organization.
- These are structured elements that are assigned to capabilities.

Business Layer

Business Structure Concepts

- **Business Actor** – This business entity is capable of performing behavior.
- **Business Role** – It is the responsibility for performing specific behavior, to which an actor can be assigned.
- **Business Collaboration** – It is an aggregate of two (2) or more active internal business structure elements that work together to perform collective behavior.
- **Business Interface** – It is a point of access where a business service is made available to the environment.
- **Business Object** – It is used to model an object type in which several instances may exist within an organization. It represents important information or conceptual elements within a particular business domain.
- **Representation** – It is a perceptible form of the information carried by a business object.

Business Behavior Concepts

- **Business Service** – It is considered as an explicitly defined perceptible business behavior. It is mainly used to manifest business functionality to the environment.
- **Business Process** – It is a sequence of business behaviors that achieve a specific outcome, such as a defined set of products and services.
- **Business Function** – It is a collection of business behaviors based on a chosen set of criteria closely aligned to an organization, but not explicitly governed by the organization.
- **Business Interaction** – It is a unit of collective business behavior collaboratively performed by two (2) or more business roles.
- **Business Event** – It denotes an organizational state change. It is instantaneous and does not have a specific duration.

Higher-Level Business Concepts

- **Product** – It is a coherent collection of services and/or passive structure elements, accompanied by a contract or a set of agreements, which is offered as a whole to customers.
- **Contract** – It is a formal or informal specification of an agreement between a provider and a consumer that specifies the rights and obligations associated with a product and establishes functional and non-functional parameters for interaction.

Application Layer

Application Structure Concepts

- **Application Component** – It is an encapsulation of an application's functionality that is aligned to the implementation structure, which is modular and replaceable.
- **Application Collaboration** – It is an aggregate of two (2) or more application components working together to perform collective application behavior.
- **Application Interface** – It is a point of access where an application service is made available to users to another application component or a node.
- **Data Object** – It is a data that is structured for automated processing.

Application Behavior Concepts

- **Application Service** – It is an explicitly defined and visible application behavior. It is used to specify services provided by the business.
- **Application Function** – It is an automated behavior that can be performed by an application component.
- **Application Process** – It is a sequence of application behaviors that realizes a specific outcome.
- **Application Interaction** – It is a unit of collective application behavior collaboratively performed by two (2) or more application components.
- **Application Event** – It refers to an application behavior that denotes a state of change.

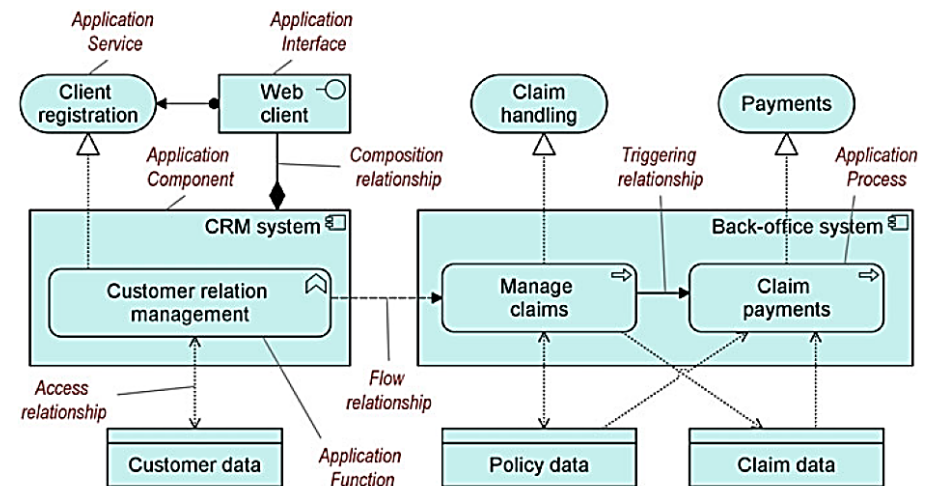


Figure 1. Example of an application layer model of a customer relation management system
Source: Enterprise Architecture at Work Modeling, Communication and Analysis (4th ed.), 2017 p. 96

Technology Layer

Technology Structure Concepts

- **Node** – It is a computational or a physical resource that hosts, manipulates, or interacts with other computational or physical resources.
- **Technology Collaboration** – It is an aggregate of two (2) or more nodes that work together to perform collective behavior.
- **Technology Interface** – It is a point of access where technological services offered by a node can be accessed.
- **Device** – It is a physical information technology resource wherein system software and artifacts can be deployed for execution.
- **System Software** – It is a software that supports a business environment in storing, executing, and utilizing applications, including the data deployed within the environment.
- **Path** – It is a link between two (2) or more nodes through which the exchange of data or material happens.
- **Communication Network** – It is a set of structures that connects computer systems or other electronic devices for transmission, routing, and reception of data or information.
- **Artefact** – It is a piece of data that is used and/or produced in a software development process or a system deployment and operation.

Technology Behavior Concepts

- **Technology Service** – It is an external visible unit of functionality, provided by one or more nodes accessible through well-defined interfaces.
- **Technology Function** – It is a behavior element that groups infrastructural behavior, which can be performed by a node.
- **Technology Process** – It is a sequence of technological behavior that achieves a specific outcome.
- **Technology Interaction** – It is a unit of collective technology behavior collaboratively performed by two (2) or more nodes.
- **Technology Event** – It is a technology behavior element that denotes a state change.

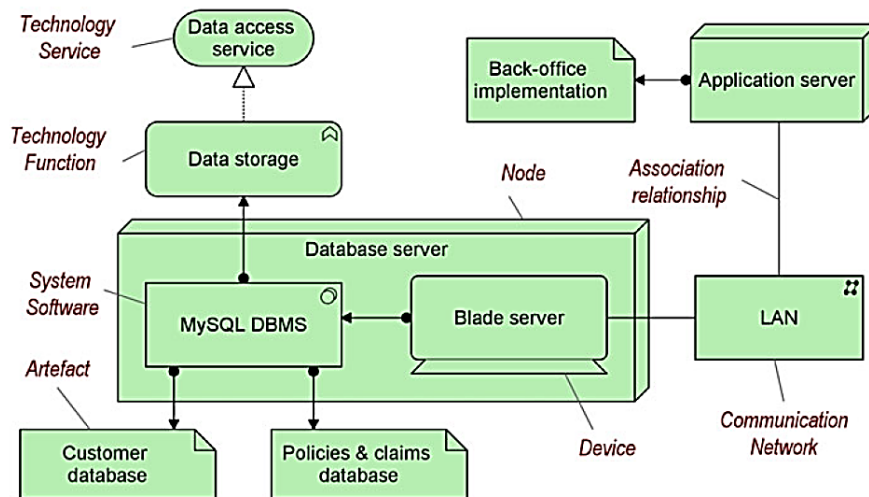


Figure 2. Example of a technology layer model

Source: Enterprise Architecture at Work Modeling, Communication and Analysis (4th ed.), 2017 p. 100

Physical Concepts

- **Equipment** – It is a physical machine, tool, or instrument that can create, use, store, move, or transform materials.
- **Facility** – It is a physical structure or environment interconnected by distribution networks.
- **Distribution Network** – It is a physical network used to transport materials, data, or information.
- **Material** – It is a tangible matter or physical element that can be accessed by equipment.

Implementation and Migration Concepts

Implementation-Related Concepts

- **Work Package** – It is a series of actions identified and designed to achieve a specific goal or result within a clearly defined beginning and end date and resource constraints.
- **Implementation Event** – It is a behavior element that denotes a state of change related to implementation or migration that can encompass a time attribute.
- **Deliverable** – It is a precisely defined outcome of a work package.

Migration Planning Concepts

- **Plateau** – It is a relatively stable state of an enterprise architecture that exists during a specific period of time.
- **Gap** – It is a statement of difference between two (2) plateaus.

References:

Lankhorst, M., BiZZdesign, Enschede, & The Netherlands. (2017). *Enterprise architecture at work modeling, communication and analysis* (4th ed.). Berlin, Germany: Springer Nature.

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