Enterprise Architecture Modeling Processes

Modeling as a Transformation Process

- **Knowledge Representation** – This depicts an enterprise architecture model in a specific manner based on the agreed perception of the individuals involved in the process.
- **Knowledge Goals** – These are the goals under the modeling process of an enterprise architecture.
- **Knowledge State** – This involves the condition and commitment of stakeholders on enterprise architecture.
- **Knowledge Transformation** – This is the situation where knowledge passes through the modeling process while considering goals and guidelines.
- **Central Representations** – These are the primary and essential models that are used in the transformation of knowledge.

Important points (Lankhorst, et al., 2017).

- Architecture models are created in order to establish communication between the individuals reading the model and/or the individuals developing the model.
- Models can also be used to describe the current and future situation of an organization, as well as the possible development requirements.
- Enterprise architecture involves the identification of relationships between different domains while providing a high-level overview.

Different Modeling Activities

- **Establishing the purpose, scope, and focus –** It is a goal-driven activity wherein architects determine all possible stakeholders and the different purposes of the model in relation to the stakeholders. This is considered as a starting point in establishing a model.
- **Selecting one or more viewpoints –** Models are created using different viewpoints that give a specific set of concepts and relations to be used during the modeling process. This serves as a guide in determining appropriate information to be included in the model.
- **Creating and structuring the model –** This activity involves requirements gathering, such as appropriate information, to create, structure, and visualize an enterprise architecture model. Additional information can be acquired using interviews or discussions with stakeholders. Structuring reduces the visual complexity of a model.
- **Visualizing the model** – Stakeholders and their needs must be considered in visualizing a model. Different viewpoints, text, and tables are also used as a starting point in visualizing a model. *Central Model* is an example of a way to visualize a model.
- **Using the model** – This activity uses the model representation to communicate with the stakeholders and evaluate whether the model and the visualization achieved the intended outcome. The following are the typical steps in using visual representation:
  - **Validation** – This involves checking whether the key stakeholders agree that the viewpoints in the model are correct representations of the actual and intended situation.
  - **Obtaining Commitment** – After reaching an agreement during validation, the key stakeholders must commit that they fully understand the potential impacts of implementing the model.
  - **Informing** – This involves the dissemination of information to all the stakeholders.
- **Maintaining the model** – Enterprise architecture model must be kept up to date for it not to lose its value for the stakeholders. It is maintained to reflect changes in infrastructure, the business processes, or the enterprise products and/or services.

Types of Modeling Actions

- **Introduction** – Introduce a candidate element in a model. This is the act of placing a fresh term for a concept or relation within a model. The candidate element must be somehow relevant but not necessarily linked to the model. It may be refined or deleted later on.
- **Refinement** – Refine an element in a model. Other than introducing new elements, refining can be done by adding specific details to existing elements. The following are the two (2) forms of refining an element:
  - Classify the newly introduced candidate element based on the concepts used in the model.
  - Provide an additional description (such as *adding internal details*, *writing a definition*, and *nesting models*) to an element rather than adding a new element.
- **Abandoning** – Abandon a model element. This involves an explicit decision of eliminating or delete a concept or relation with proper documentation, to avoid the concept of *"lingering around."*
- **Abstraction** – Abstract from a concept or relation. The concept of abstraction is the opposite of refinement. In this activity, an architect decides whether information, that is available in the model, is to be left out or not.

- **Translation** – Translate an element. This is the process of finding a suitable alternative for an element. Documentation is required in order to keep track of the existing relationship between models or contexts. The following are some of the possible process-related translation (Lankhorst, et al., 2017):
    - Creating or replacing an element so it matches the meaning of a concept from another language or context.
    - Linking an element to an element on another model or modeling language.
    - Linking an element to an intermediary language when a model needs to be translated to more than one language or context.
    - Specifying rules to empower standardized and coherent translation between a context and a language.
- **Documentation** – Document modeling actions. This action involves the administration and documentation of all or some modeling actions, such as refinement and abstraction. The following are some of the reasons for documenting modeling actions:
    - To be able to backtrack the previous state of a model.
    - To revisit rejected alternatives.
    - To record modeling logical basis related to traceability, accountability, etc. of a modeling process.
    - To add conceptual meta-data, such as date, location, name of the person who performed the activity, and the specific model elements that were affected.

References:

Lankhorst, M., BiZZdesign, Enschede, & The Netherlands. (2017). *Enterprise Architecture at Work Modeling, Communication, and Analysis* (4th ed.). Berlin, Germany: Springer Nature