View, Viewpoints and Customization in ArchiMate

Knut Hinkelmann, Source: ArchiMate 3 – Chapters 14 and 15

Architecture Views and Viewpoints

- Not everyone is interested in everything.
- Views and Viewpoints are a means to specify which part of an Architecture Description is of relevance
  - *View*: Part of an architecture description that
    - addresses a set of related *Concerns*
    - and is tailored for specific *Stakeholders*
  - *Viewpoint* specifies a view
    - prescribes the concepts, models, analysis techniques, and visualizations that are provided by the view
    - a characterisation of stakeholders and their concerns

A *view* is what you see and
a *viewpoint* is where you are looking from

ArchiMate 3, section 14.3

Comparison to Databases

- The concept of views is well-known from databases
  - A view is a subset of a database
  - A view can be characterized by a query
- Thus
  - a *query* corresponds to a *viewpoint*: it characterizes what should be in a view
  - an *answer* to a query corresponds to a *view*: it is a table, which represents the part of the databases specified by the query

Stakeholder and Concerns

- *Stakeholders* are individuals, groups or organizations holding concerns for the System, i.e.
  - **Examples of Stakeholders**: business analyst, CEO, CIO, CxO, business architect, information architect, application architect, enterprise architect, process manager, product manager, auditor, …
- A *Concern* is any interest in the system, i.e. the objective for which a model is used
  - **Examples of Concerns**: optimisation, efficiency, quality of service, automation, agility, behavior, customer experience, flexibility, maintainability, regulatory compliance, security.

Views and Viewpoints in ArchiMate

- In ArchiMate, architects and other stakeholders can define their own views on the enterprise architecture
- A viewpoint in ArchiMate is a selection of
  - a relevant subset of the ArchiMate concepts and their relationships
  - For each viewpoint one model kind exists
- A view is (a set of) models
  - representing a part of an architecture
  - using the concepts and relationships of the corresponding viewpoint

Two-Dimensional Classification of Enterprise Architecture Viewpoints

Purpose Dimension

Content Dimension

	Designing	Deciding	Informing
Details			
Coherence			
Overview			
	architect, software developer, business process designer	product manager, CIO, CEO	customer, employee, others

Two-Dimensional Classification of Enterprise Architecture Viewpoints

Purpose dimension:

***Designing*:** support architects and designers in the design process from initial sketch to detailed design. Typically, design viewpoints consist of diagrams, e.g. those used in UML.

***Deciding*:** assist managers in the process of decision-making by offering insight into cross-domain architecture relationships. Typical examples: cross-reference tables, landscape maps, lists, and reports.

***Informing*:** help to inform any stakeholder about the Enterprise Architecture, in order to achieve understanding, obtain commitment, and convince adversaries. Typical examples are illustrations, animations, cartoons, flyers, etc.

Content dimension:

select relevant aspects and layers from the ArchiMate Core Framework.

Details: one layer and one aspect. Typical stakeholders: a software engineer or a process owner responsible for one application/process.

***Coherence*:** multiple layers or multiple aspects. Enables to focus on architecture relationships like process-uses-system (multiple layer) or application-uses-object (multiple aspects). Typical stakeholders are operational managers responsible for a collection of IT services or business processes.

Overview: multiple layers and multiple aspects. Addressed to Enterprise Architects and decision-makers, such as CEOs and CIOs.

Creating an ArchiMate Viewpoint

- Creating an ArchiMate viewpoint consists of two steps:

1. Selecting a *subset of relevant concepts* (elements and relationships) from the ArchiMate metamodel that is needed to address the stakeholder's concerns.

2. Defining a *representation* to depict these concepts in a way that is understood by the stakeholders.

   This can be a diagram that uses standard or customized ArchiMate notation, a catalog of elements, a matrix showing the relationships between two groups of elements, or an entirely different visualization.

Customization in Archimate

- The ArchiMate language contains only the elements and relationships that are necessary for general architecture modeling.
- It can be customized for for specific usage like model-based performance or cost calculations, or to attach supplementary information (textual, numerical, etc.)
- Two ways to customize
  - Profiling
  - Specialization of eElements and relationship

Specialization of Elements and Relationships

- Specialization of elements and relationships allows organizations or individual users to customize the language to their own preferences and needs, while the underlying definition of the concepts is preserved
- Specialized elements inherit the properties of their generalized elements
- New graphical notation could be introduced for a specialized concept, e.g., by adding or changing the icon.

Examples of Specializations

Specializsation can be made for elements and relations on all layers

- A **Business Actor** could be
  - Individual
  - Organization Unit
- **Product** could be
  - Physical Product
  - Digital Product
- **Application Interface** coud be
  - Application-to-Application Interface
  - User Interface
- **Network** could be
  - WiFi Network
  - Wide Area Network
- **Equipment** could be
  - Vehicle
  - Train
- A **Goal** coud be
  - A Business Objective
  - A Control Object (for a risk)