Enterprise System Integration
Session 3: Enterprise Architecture Modeling

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Agenda

1 Intro

2 Architecture Styles

3 Enterprise Architecture Modeling

4 Challenges of Design Approach

5 Positioning Archimate®

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This presentation is based on slides by

- ATE Enterprise
- The Open Group
- and other references listed in Bibliography
Terms and Definitions


- **Solution Architecture**: Instantiations of whole or part of a reference architecture in a subject area [3] to facilitate the automation of business processes to different levels for application systems [9].

- **User Organization**: The entity in charge of providing specific services or solutions.

- **Standardisation Organization**: A primary organisation with authority to define and endorse official standards, including digital technology standards for developing services.
Reference vs Solution Architecture
Architecture Styles: SOA vs Microservices

- SOA: is an integration architectural style and an enterprise-wide concept that takes advantage of reusable software components, or services. [IBM Blog]
- Microservices is application architecture that takes every application function and puts it into its own service that runs in a container and these containers communicate via API.
Architecture Styles: **SOA** vs **Microservices**

- SOA has an **enterprise scope**
- Microservices architecture has an **application scope**.

*Figure:* Adopted from IBM Blog
Enterprise Architecture Modeling

- Most of the challenges and problems in enterprise systems integration are socio-organizational [6].
- Understand the nature, interactions, and operations
- A high-level integration strategy
- Constructing integrated architecture models

Create the views with the help of existing EA frameworks

2. The Open Group Architecture Framework TOGAF [2]- Using ArchiMate
3. The Department of Defence Architecture Framework [10]
4. The NATO Architecture Framework [8]
A key challenge in the development of an Enterprise Architecture is to strike a balance between:

- **Specificity** of language for individual architecture domains
- **Very general** set of architecture concepts
Why ArchiMate®?

• **UML** and **BPMN** have been very useful for specific applications and business processes, but:
  • They are very **detailed** and very granular
  • They don’t **scale** to Enterprise architecture
  • The **learning-curve** is very high for someone who really needs to have a high level understanding of the Enterprise
What does ArchiMate® provide?

- A language with concepts to describe architecture
- A framework to organise these concepts
- A graphical notation for these concepts
- A vision on visualisation for different stakeholders
- An open standard maintained by The Open Group
Design of the ArchiMate® language started from relatively generic concepts.
Positioning ArchiMate®

**ArchiMate**
Describes the structure of cities.

**BPMN**
Describes the business processes.

**UML**
Describes the structure of houses and office buildings.
Core Framework Aspects

- Passive Structure
  - Book
  - ‘What’

- Behavior
  - Reads
  - ‘How’

- Active Structure
  - Tiina
  - ‘Who’
Framework Layers
Core Framework Layers

- **Business Layer**: offers products and services to external customers
  - realised by business processes
  - performed by business actors

- **Application Layer**: supports the business layer with application services
  - realised by (software) applications

- **Technology Layer**: offers infrastructure services needed to run applications
  - realised by computer and communication
  - hardware
  - system software
Thank you!

Questions?

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Bibliography I


