Lecture Contents

W3, 2h
• Architecture Vision
• BPMN
Section 1.3: Architecture Vision
TOGAF Architecture Vision

Key steps in architecture vision development include:

1. Establish the Project
2. Identify Business Goals and Business Drivers
3. Review Architecture Principles, including Business Principles
4. Define Scope
5. Define Constraints
6. Identify Stakeholders and Concerns, Business Requirements, and Architecture Vision
7. Develop Statement of Architecture
TOGAF Architecture Vision Template

Typical contents of an architecture vision are as below:

• Problem Description (Include subsections)
• Detailed Objectives
• Environment and Process Models (Include subsections)
• Actors and their Roles and Responsibilities (Include subsections)
• Resulting Architecture Model (Include subsections)
• End Vision Statement
TOGAF Architecture Vision Template

• Problem Description
  – Stakeholders and their Concerns
  – List of Issues/Scenarios to be Addressed
  – Business Vision Statement
  – Business Vision Diagram
  – Change Drivers & Opportunities
TOGAF Architecture Vision Template

• Environment and Process Models
  – Process Description
  – Process Steps Mapped to Environment
  – Process Steps Mapped to People
  – Information Flow
TOGAF Architecture Vision Template

• Actors and their Roles and Responsibilities
  – Human Actors and Roles
  – Computer Actors and Roles
  – Requirements (Development requirements)
TOGAF Architecture Vision Template

• Resulting Architecture Model
  – Constraints
  – IT Principles
  – Architecture Supporting the Process
  – Requirements Mapped to Architecture
Example for Architecture Vision Development
Example-Problem Description

- **Problem Description**
  1. Tacitness of knowledge during design phase of building leads to knowledge loss and incomplete knowledge flow.
  2. Building info is not accessible by other industry users (e.g. Utility companies, small businesses or retailers) because this knowledge isn’t preserved during design phase and no possibility to have access to this knowledge

- **Stakeholders and their Concerns**
  1. Design managers
  2. Other industry users (e.g. utility companies, small business owners, retailers)

- **List of Issues/Scenarios to be Addressed**
  1. Difficulty of storing Tacit knowledge during Design phase
  2. Lack of a mechanism for accessing building information by other industries’ users (e.g. utility companies, small business owners, retailers).
Example-Detailed Objectives

**OBJ 1:** Storing tacit knowledge during Design phase in a database

**OBJ 2:** Providing read access possibility for industry users knowledge during design phase and no possibility to have write access to this knowledge
Environment and Process Models

Process Description

Defining an **environment 1** in which the exchanged knowledge by design professionals be stored at the time of its share.

**Environment 1- DIP (Design Information Preserver):** This process is started by any request for information by design team members.

Defining an **environment 2** by which industry users may enter their query about building info

**Environment 2- APBI (Access Provider to Building Information):** This process is started by a request from other industries’ users to have a specific building information.
Example-Process Steps map to Environment 1-1

1. Information **request** is sent to a team member;
2. Information **request is received** by a team member;
3. This member **provide** proper **answers** for the request;
4. This **answer** is sent and **stored** simultaneously;
Example-Process Steps map to Environment 1-2

7. Request sender receive the answer;
8. Confirm its completeness; End of process.
9. If not confirmed ask correct answer again;
10. Go to the step 4;
Example-Process Steps map to Environment 2

1. An information **request is submitted** by Industry User
2. Request is **checked for access** level;
3. If confirmed send a **message** for user to **wait for answer**; if not finish the process with a message;
4. **Search** for answers;
5. **Send** results to Industry User;
6. Industry User **receive** the results.
Example-Process Steps map to People-Environment 1

1. Arch./Mech./Elec./Struc. **Send request** to Arch./Mech./Elec./Struc. Engineers;
2. Arch./Mech./Elec./Struc. Engineer **answer the request**;
3. **Send answer** to Arch.;
4. Arch. **Receive the answer**;
5. Arch. **Confirm** its completeness;
6. If **not confirmed** send request again;
7. Go back to step 3;
Example-Process Steps map to People – Environment 2

1. Industry user submit a request for building info;
2. A computer actor check its access level;
3. If this user has permission send him a message to wait for answer; If not, finish;
4. Search for request result;
5. Send results to requester;
Example - Information Flow

- Environment 1

- Environment 2

Diagram:
- Arch.
- Mech.
- Stru.
- Elec.
- Information Storage
- Search engine
- Indu. user
Example - Human Actors and their Roles and Responsibilities

Environment 1

- **Architect**: Architectural Design planning - Providing Architectural info for other team members
- **Mechanical Engineer**: M. Eng. design planning – Providing M. Eng. Info for other team members
- **Electrical Engineer**: E. Eng. Design planning – Providing E. Info for other team members
- **Structural Engineer**: S. Eng. Planning – Providing S. Info for other team members

Environment 2

- **Industry user**: sending a request to have building information
Example - Requirements

Environment 1

1. A process to go through design steps, sending info. Request and receiving answers
2. A control centre to track the requests
3. A database to store exchanged info

Environment 2

1. A virtual reception desk to accept request
2. A search engine to explore inside the provided database in environment 1
Example - Resulting Architecture Environment 1

Information Preserving during Design Process

Diagram showing the process of design with steps such as 'Design Process start', 'Arch. Design', 'Eng. Design', 'Request for Eng. Info', 'Receiving Answers', 'Confirm its completeness', 'Receiving Req. for Info', 'Answering Questions', 'Storing Answers', 'Sending Answers', and 'Confirm its completeness'.
Example- Resulting Architecture Environment 2

Industry User Info.
Req. Process

Diagram showing the process flow for Industry User Info. Request and Response.
BPMN Elements

There are three primary modeling elements (flow objects):
- Events
- Activities
- Gateways

There are three ways of connecting the primary modeling elements:
- Sequence Flow
- Message Flow
- Association

There are two ways of grouping the primary modeling elements through Swim lanes:
- Pools
- Lanes