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

• **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

Example-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
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

Example - Resulting Architecture Environment 2

Industry User Info.
Req. Process
BPMN Elements

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

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

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