UML® Modeling for Business Architecture

Professional Development Days
20 Sep 2017

Armstrong Process Group, Inc.
www.aprocessgroup.com
About APG

- APG’s mission is to
  "Align information technology and systems engineering capabilities with business strategy using proven, practical processes delivering world-class results."
- Industry thought leader in enterprise architecture, business modeling, process improvement, systems and software engineering, requirements management, and agile methods
- Member and contributor to
  - UML, SysML®, SPEM, UPDM™/UAF, BAMM at OMG®
  - TOGAF, ArchiMate®, IT4IT™ at The Open Group
  - UML Profile and Metamodel teams at Business Architecture Guild
- Business partners with Sparx, HP, and IBM
- Open Group Accredited Training Provider, Guild Accredited Training Partner™, IIBA® Endorsed Education Provider (EEP™)
How is Modeling Different from Picture Drawing?

- Models are more rich than pictures
  - Drawings are representations of models, but are not the model itself
  - In a model, just because you don’t seem something on a diagram, does not mean that it isn’t in the model
- Models enable rendering content in multiple forms, dependent on audience
  - Graphical diagrams
  - Tabular reports
  - Traceability matrices
  - Dashboards and charts
- Models enable empirical analysis and reporting
  - Data analytics and business intelligence
What is Architecture?

• “All architecture is design, but not all design is architecture”
  • Can think of architecture as the “design-of-the-design”
  • Informs people doing detailed design (precursor to implementation) on what it means to create a “good” design

• Business analysis is often more concerned with the design/implementation of the business (and supporting IT assets)

• Obvious alignment opportunity between Business Architecture and Business Analysis
  • Business Architecture should inform the Business Analyst how to do “good” business/system analysis and design
  • Namely by exploiting the terminology and models of the business architecture

• The “goodness” of a business architecture is measured by how effectively and efficiently the business responds to business changes
Blueprints provide views into knowledgebase, based on stakeholder concerns

Scenarios contextualize expected outcomes of business architecture work
  - Also inform initial selections of key stakeholders and likely concerns
## Business Architecture vs. Design/Operations

<table>
<thead>
<tr>
<th>Architecture</th>
<th>Design</th>
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</thead>
<tbody>
<tr>
<td>Value Stream</td>
<td>Business Process</td>
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<tr>
<td>Capability</td>
<td>Business Function</td>
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<tr>
<td>Information Concept</td>
<td>Data Element</td>
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<td>Organization</td>
<td>Location</td>
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<td>Strategy</td>
<td>Tactic</td>
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<td>Policy</td>
<td>Business Rule</td>
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<td>Initiative</td>
<td>Project</td>
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<tr>
<td>Stakeholder</td>
<td>Role</td>
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</tbody>
</table>

- Architecture is generally supposed to be implementation independent
- Architecture generally describes “what” and “why”
  - Design describes “how”, “by whom”, and “where”
UML® Profile for BIZBOK® Guide – Value Proposition

- Uplift professionalism of practitioners
  - Transition from office productivity tools to formal modeling solutions
- Increase adoption of BIZBOK-based modeling
  - Diminish requirement of end-users to create one-off custom solutions
- Provide foundation for end-user customization
  - Enable end-users to add custom properties and additional types of elements, relationships, and diagrams
- Allow integration of Business Architecture models with other models
  - Enterprise architecture (TOGAF, ArchiMate, UPDM/UAF)
  - Business process (BPMN)
  - Systems engineering (SysML)
  - Solution delivery (UML)
COLLABORATION TEAMS: UML PROFILE FOR BIZBOK®
GUIDE

News
- MDG Technology v1.0 Beta released!
- MDG Technology features
- Next meeting @ 22 Nov 2016
- View group calendar

Web Published Models
Last published 4 Nov 2016.
- Metamodel
- MDG Technology

Content
- Meeting minutes
- Model content
- UML Profile
- MDG Technology
- Guidance

Team Tools
- Connect to EA cloud repository to view model
- Login into Hosted Redmine to view issues

Team Members
- APG
- AIMCo
- FedEx
- Guild Metamodel
- OMG BAMM RFP
Organization – Diagram Types

New Diagram

Package: Organizations

Diagram: Organizations

Type

Select From:
- UML Structural
- UML Behavioral
- Extended
- BIZBOK Capability Mapping
- BIZBOK Information Mapping
- BIZBOK Organization Mapping
- BIZBOK Value Mapping
- EA Review
- Kanban

Diagram Types:
- Organization Cross Mapping
- Organization Map

A business blueprint that depicts organizational decomposition by organization unit along with additional aspects of the business where appropriate.

OK  Cancel  Help
Location Hosts Organization Matrix

APG Corporate Headquarters (New Richmond, WI)
APG Data Center (Minneapolis, MN)
APG Federal Sales and Service (Arlington, VA)
APG Field Operations (Dallas, TX)
APG National Sales (Denver, CO)
APG Systems Engineering Services (San Diego, CA)
Cloud (Everywhere and Nowhere)

<table>
<thead>
<tr>
<th>Target</th>
<th>APG Corporate Headquarters (New Richmond, WI)</th>
<th>APG Data Center (Minneapolis, MN)</th>
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</tr>
</thead>
</table>
Capability Mapping – Diagram Types

Change Diagram Type

Package: Value Streams

Diagram: Deliver Training Engagement - Value Items

Type

Select From:
- UML Structural
- UML Behavioral
- Extended
- BIZBOK Capability Mapping
- BIZBOK Information Mapping
- BIZBOK Organization Mapping
- BIZBOK Value Mapping
- BPMN 2.0
- FEAF Diagrams
- SPEM
- TOGAF Diagrams
- TOGAF_BusinessArchitecture
- TOGAF_DataArchitecture

Diagram Types:
- Capability Cross Mapping
- Capability Map

BIZBOK Capability Mapping

OK  Cancel  Help
Capability – Relationships

Value Stream Stage

Stakeholder

Product

composed of

enables

Value Item

delivers

produces

depends upon

Value Item

delivers

produces

Value Stream Stage

Outcome
describes

Capability

ID

Tier: Stratification Tier = Supporting

Heatmap Status: Capability Heatmap Status = Not Evaluated

Criticality: Capability Criticality = Not Analyzed

Application

automates

relies on

requires

Policy

governs

Initiative

impacts

requires

Organization

possesses

instance of

Capability Instance

implements
Capability Map – Decomposition

Toolbox

- Elements
  - Capability
  - Outcome
- Relationships
  - Composed Of
  - Depends Upon
  - Enables
  - Informs
  - Instance Of
  - Possesses
  - Produces
  - Requires
- Common
- Artifacts

APG Business Architecture

- Overview
- Value
- Capability
  - Capability Model
  - Capability Nested Hierarchy
- APG
  - Finance
    - Accounting
    - Accounts Payable
    - Accounts Receivable
  - Operations
    - Communications Operations
    - Communications Delivery
    - Event Operations
    - Practitioner Operations
  - Product Operations
    - Product Management
    - Product Order Fulfillment
    - Training Operations
  - Research and Development
    - Intellectual Property
      - Content Management
      - Content Publishing
    - Sales and Marketing
      - Marketing
      - Sales
  - Organization
    - Information
## Business Unit – Capability Matrix

<table>
<thead>
<tr>
<th>Source</th>
<th>Target</th>
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<tbody>
<tr>
<td>Academic Outreach</td>
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<td>APG</td>
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<td>Business Operations</td>
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<td>Contractor Management</td>
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<td>Curriculum Development</td>
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<td>Enterprise Architecture Services</td>
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<td>Executive Management</td>
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<td>Software Development Services</td>
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*Note: The matrix indicates the level of capability for each source and target.*
Capability Dashboard
Capability-Based Analysis
Value Mapping – Diagram Types

[Image of a software interface with options for diagram types]

- UML Structural
- UML Behavioral
- Extended
- BIZBOK Capability Mapping
- BIZBOK Information Mapping
- BIZBOK Organization Mapping
- BIZBOK Value Mapping
- BPMN 2.0
- FEF Diagrams
- SPEM
- TOGAF Diagrams
- TOGAF_BusinessArchitecture
- TOGAF_DataArchitecture

Diagram Types:
- Value Map
- Value Stream Specification
- Value Cross Mapping

Options: OK, Cancel, Help
Value Map – Example

Customer » « desires » Uplifted Workforce Capabilities » « delivers »

Train Workforce

- Understand Training Requirements
- Arrange Training Logistics
- Register for Training Session
- Deliver Training Session

Toolbox

Elements
- Value Stream
- Value Stream Stage
- Value Proposition
- Stakeholder

Relationships
- Composed Of
- Delivers
- Desires
- Offers
- Triggers

Value Streams: Train Workforce - Value Items
Value Streams: Train Workforce - Value Stream Stages
Value Streams: Train Workforce - Capabilities
Value Stream Stage Enabled By Capability Mapping
## Value Stream Stage Enabled By Capability Matrix

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<td>Register for Training Session</td>
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<td>Understand Training Requirements</td>
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Alternate Value Stream-Capability Mapping

- Understand Training Requirements
- Arrange Training Logistics
- Register for Training Session
- Deliver Training Session
- Close Training Session

- Client Management
- Event Management
- Facility Management
- Instructor Management
- Event Registration
- Event Delivery
- Event Preparation
- Attendee Management
- Event Management
- Accounts Payable
- Accounts Receivable
Information Map – Diagram Types

Change Diagram Type

Package: Event Management

Diagram: Event Management Business Entities

Type

Select From:
- UML Structural
- UML Behavioral
- Extended
- BIZBOK Capability Mapping
- BIZBOK Information Mapping
- BIZBOK Organization Mapping
- BIZBOK Value Mapping
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- TOGAF Diagrams
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- TOGAF_DataArchitecture

Diagram Types:
- Information Cross Mapping
- Information Lifecycle
- Information Map

BIZBOK Information Mapping

OK  Cancel  Help
Conclusions

- UML Profile for BIZBOK should increase level of adoption of formal modeling in Business Architecture
  - Build a modeling capability is an important step in formalizing business architecture
  - Ability to do this in existing, commercially available tools should be helpful

- Modeling your business architecture is critical for delivering:
  - Enterprise Business Intelligence
  - Complete Business Digitization

- Have released second beta version focusing on core, foundational domains
  - Capability, Value, Information, Organization
  - Plan to release complete version by end of 2017

- Looking for end-users to test work-in-progress
  - Also looking for people to help contribute to development
Thanks for your attention and participation!
You can download this presentation and access numerous other resources at the myAPG resource portal!

www.aprocessgroup.com/myapg