Enterprise Architecture
Value Chain

MACC 2015
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 at the Object Management Group (OMG)
  - TOGAF, ArchiMate, IT4IT at The Open Group
  - Eclipse Process Framework (EPF) at the Eclipse Foundation

- Business partners with Sparx, HP, and IBM
Context

- EA leadership needs to distill EA value proposition to enterprise
  - Most stakeholders care about EA outcomes, not EA implementation
  - However, EA leadership needs model for understanding what needs to be implemented in order to deliver value
- Needs to support/integrate other business/IT value chains
  - Such as Shop-Buy-Service-Claim and Plan-Build-Run
- EA capability improvement is challenging when there is no “call to action”
  - Requires cross-organization executive support
  - Nobody cares until they understand “what’s in it for me?”
EA-Enabled Business/IT Initiatives

Architecture Value Chain

Understand
- Simplification v1.0
- Benchmarking
- Bus Unit Planning

Analyze
- Program Architecture Planning
- Program Architecture Delivery

Decide
- Project Impact Assessment
- Business Continuity
- Technology Lifecycle Management
- IRM

Respond
- Simplification v2.0
Capability Definition

- **TOGAF**
  - “A business-focused outcome that is delivered by the completion of one or more work packages.”

- **DoDAF**
  - “The ability to achieve a Desired Effect under specified (performance) standards and conditions through combinations of ways and means (activities and resources) to perform a set of activities.”

- **BIZBOK**
  - “A particular ability or capacity that a business may possess or exchange to achieve a specific purpose or outcome.”

- **Open Group CBP Project**
  - “A measurable capacity to employ resources to achieve desired outcomes or goals within a specified context (or under specified conditions).”
Tailored Capability Definition

- An ability that an organization, person, or system possesses.
- Capabilities are typically expressed in general and high-level terms and typically require a combination of organization, people, processes, and technology to achieve.
- A capability is WHAT a company needs to be able to do to execute its business strategy.
  - Capabilities are represented as a catalog of things an enterprise can do (ability) regardless of the governance or how they are operationalized.
Capability Models

- Capability model is fundamentally a reference model
  - EA capability model should represent things that architecture practices and practitioners should/could do in real-world
- Capabilities are “things” – i.e. they have noun-like names
- Services are “behaviors” – i.e. they have active verb/noun-like names
  - Fine-grained services can be composed/configured into higher-level services
- Common practice is to contextualize the top-level of capability model with a value chain
Capability Model Use Cases

- **Analyze EA capability performance**
  - Understand what EA capabilities need uplifting to support new strategic initiatives and operational activities

- **Create roadmaps for evolving EA practice**
  - Associate conformance requirements for each capability as related to multiple levels in a maturity model for assessing/improving maturity

- **Create EA service portfolio**
  - Map EA services implemented by end-user organization to lowest level capabilities

- **Use as reference model for mapping to standards and tools**
  - TOGAF 9.1 content for coverage and gap analysis
  - Open CA conformance requirements
  - ISO/IEC 15704/15288/42010
  - Required tool capabilities and specific vendors’ implementations
EA Value Chain and Capability Map

Understand
- Domain Modeling
  - Business Architecture
  - Information Architecture
  - Data Architecture
  - Service Architecture
  - Application Architecture
  - Technology Architecture
- Requirements Elicitation
  - Architecture Project Scoping
  - Architecture Stakeholder Analysis
  - Architecture Envisioning

Analyze
- Architectural Analysis
  - Gap Analysis
  - Impact Analysis
  - Trade-off Analysis
  - Affinity Analysis
- Architecture Reporting
  - Business Intelligence Reporting
  - Tabular Reporting
  - Diagram Reporting

Decide
- Architecture Roadmapping
  - Capability Roadmapping
  - Operations Roadmapping
  - Services Roadmapping
  - Application Roadmapping
  - Technology Roadmapping
- Architecture Planning
  - Migration Planning
  - Architecture Decision Making
  - Architecture Risk Assessment
- Architecture Governance
  - Architecture Risk Mgmt
  - Architecture Compliance Mgmt
  - Architecture Asset Mgmt
  - Architecture Process Mgmt

Respond
- Architecture Lifecycle Management
  - Business Architecture
  - Data Architecture
  - Application Architecture
  - Technology Architecture

Supporting Capabilities

- Architecture Knowledge Management
- Architecture Operations
- Architecture Delivery
- Architecture Integration
- Architecture Human Capital Management

EA Content Management
“Architecture-At-Rest”

EA Lifecycle Management
“Architecture-In-Motion”
## EA Supporting Capabilities

<table>
<thead>
<tr>
<th>Architecture Knowledge Management</th>
<th>Architecture Operations</th>
<th>Architecture Professional Services</th>
<th>Architecture Integration</th>
<th>Architecture Human Capital Mgmt</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Architecture Modeling</strong></td>
<td><strong>Architecture Governance</strong></td>
<td><strong>Architecture Project Support</strong></td>
<td><strong>Architecture Process Integration</strong></td>
<td><strong>Architect Onboarding</strong></td>
</tr>
</tbody>
</table>
| • Current State Modeling  
• Future State Modeling  
• Architecture Metamodel Mgmt  
• Architecture Viewpoints Mgmt | • Architecture Principles  
• Compliance Checklists  
• Governance Processes  
• Governance Structures  
• Repository Governance | • Architecture Project Initiation  
• Architecture Project Monitoring  
• Architecture Project Close-Out | • IT Service Management Integration  
• Solution Delivery Integration  
• Application Management Integration  
• Portfolio Management Integration  
• Project Management Integration  
• Procurement Integration | • Architecture Tool Provisioning  
• Architecture Training Provisioning  
• Architect Orientation |
| **Architecture Reference Models** | **Architecture Change Management** | **Architecture Leadership** | **Architecture Data Integration** | **Architecture Skills Development** |
| • Performance Reference Models  
• Capability Reference Model  
• Data Reference Model  
• Service Reference Model  
• Technology Reference Model | • Business Environment Monitoring  
• Technology Environment Monitoring  
• Repository Monitoring  
• Governance Monitoring  
• Performance Monitoring | • Architecture Performance Measurement  
• Architecture Team Management  
• Governance Processes  
• Governance Structures  
• Repository Governance | • Technology Portfolio Integration  
• Application Portfolio Integration  
• Infrastructure Portfolio Integration  
• Financial Reporting Integration  
• Human Capital Integration | • Architecture Modeling Skills  
• Architecture Decision Making Skills  
• Architecture Thinking Skills  
• Architecture Leadership Skills  
• Architecture Mentoring Skills |
| **Architecture Requirements Management** | **Reference Architectures** | **Architecture Method** | **Organization Change Management** | **Architecture Profession** |
| • Architecture Requirements Definition  
• Architecture Requirements Monitoring | • Platform Reference Architecture  
• SOA Reference Architecture  
• Cloud Reference Architecture  
• Integration Reference Architecture | • Architecture Development Method  
• Standard Architecture Deliverables  
• Architecture Mentoring Skills | • Architecture Liaison Services  
• Architecture Communications | • Architecture Profession Management  
• Architect Certification  
• Architect Professional Development |

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<table>
<thead>
<tr>
<th>Capability</th>
<th>Business Architecture Modeling</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parent Capability</td>
<td>Architecture Modeling</td>
</tr>
<tr>
<td><strong>Services</strong></td>
<td>• Create Business Capability Model</td>
</tr>
<tr>
<td></td>
<td>• Create Organization Structure Model</td>
</tr>
<tr>
<td></td>
<td>• Create Business Process Model</td>
</tr>
<tr>
<td></td>
<td>• Create Business Function Model</td>
</tr>
<tr>
<td></td>
<td>• Establish Architecture Traceability</td>
</tr>
<tr>
<td><strong>Processes</strong></td>
<td>• Business Architecture Modeling Process v1.2</td>
</tr>
<tr>
<td><strong>People</strong></td>
<td>Responsible</td>
</tr>
<tr>
<td></td>
<td>Approve</td>
</tr>
<tr>
<td></td>
<td>Consult</td>
</tr>
<tr>
<td></td>
<td>Inform</td>
</tr>
<tr>
<td><strong>Tools</strong></td>
<td>• Sparx Systems Enterprise Architect</td>
</tr>
<tr>
<td><strong>KPIs</strong></td>
<td>• # of Models Created, # of Models Used for Impact Analysis</td>
</tr>
<tr>
<td><strong>Related Capabilities</strong></td>
<td>Current State Modeling, Metamodel Mgmt, Viewpoint Mgmt, Modeling Tool Mgmt, Reporting, Modeling Skills, Tool Training</td>
</tr>
<tr>
<td>Level 1: Initial Fire-fighting Management</td>
<td>Success in these organizations depends on competence and heroics of people • Not on use of proven processes</td>
</tr>
<tr>
<td>------------------------------------------</td>
<td>--------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Level 2: Managed Work Unit Management</td>
<td>Create a management foundation within each work unit or project</td>
</tr>
<tr>
<td>Level 3: Standardized Process Management</td>
<td>Establish and use common organizational process infrastructure and associated process assets • Achieve consistency in how organization performs work to provide products and services</td>
</tr>
<tr>
<td>Level 4: Predictable Capability Management</td>
<td>Manage and exploit the capability of the organizational process infrastructure and associated process assets • Achieve predictable results with controlled variation</td>
</tr>
<tr>
<td>Level 5: Innovating Change Management</td>
<td>Continuously improve processes and resulting products and services • Defect and problem prevention, continuous capability management, and planned innovative improvements</td>
</tr>
</tbody>
</table>
# Architecture Maturity Level Requirements

<table>
<thead>
<tr>
<th>Capability</th>
<th>Architecture Decision Making</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parent Capability</td>
<td>Architecture Planning</td>
</tr>
<tr>
<td>Driver</td>
<td>Simplification, Technology Lifecycle Management</td>
</tr>
<tr>
<td><strong>Level 1</strong></td>
<td><strong>Level 2</strong></td>
</tr>
<tr>
<td>Current Maturity</td>
<td>Level 2 (Managed)</td>
</tr>
<tr>
<td>Related Capabilities</td>
<td>Architecture Analysis, Architecture Skills Development, Architecture Method, Architecture Onboarding, Architecture Governance</td>
</tr>
</tbody>
</table>

**Capability**

**Parent Capability**

**Value Chain Step**

**Strategize**

**Driver**

Simplification, Technology Lifecycle Management

**Level 1 (Initial)**

- Architecture decisions are implicitly made by project team
- Architecture decisions are not documented
- No criteria exist to determine what decisions are architecturally-significant
- No project roles are specified to be responsible for architecture decisions

**Level 2 (Managed)**

- Architecture decision making is assigned as a responsibility to project architect
- Architecture decisions are explicitly made by project architect
- Architecture decisions are formally documented in project deliverables

**Level 3 (Standardized)**

- Criteria for determining architecturally-significant are documented
- Architecture decisions are formally documented in project deliverables in a standard form
- Architecture decisions are recorded with at least two different alternatives
- Architecture decisions are supported by documented rationale
- Architecture decisions are traced to the architecture elements for which the decisions are being made

**Level 4 (Predictable)**

- Architecture decisions are managed in enterprise repository
- Architecture decisions are traced to architecture principles
- Architecture decisions are traced to the architecture elements for which the decisions are being made
- Architecture decisions implicitly tied to business outcomes
- Efficacy of architecture decisions are monitored over time

**Level 5 (Innovating)**

- Architecture decisions explicitly tied to business outcomes
- Efficacy of architecture decisions are monitored over time

**Current Maturity**

Level 2 (Managed)

**Future**

Level 3 (Standardized)
## EA Service Catalog

<table>
<thead>
<tr>
<th>Service Group</th>
<th>Service Description</th>
<th>Service Scope</th>
<th>Readiness Level</th>
<th>EA Capability</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Service Name</td>
<td>Plan</td>
<td>Build</td>
<td>Run</td>
</tr>
<tr>
<td>Enterprise Architecture Professional Development</td>
<td>Provide EA Modeling Coaching</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td>Provide EA Skills/Tools Training</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td>Provide TOGAF Certification Training</td>
<td>X</td>
<td>X</td>
<td>X</td>
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<tr>
<td></td>
<td>Maintain EA Knowledge base (EA-BOK)</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>EA Repository Support and Governance</td>
<td>Govern EA Content (measure/report on completeness, correctness, currency)</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td>Define and Maintain Meta-Model</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td>Configure tools (RSA, COGNOS, Tableau)</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td>Customize and Extend EA Tools (macros, add-ins)</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td>Manage EA Content (data upload, data quality, data cleansing)</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td>Manage EA Repository Users</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>EA Analysis Services</td>
<td>Analyze Dependencies</td>
<td>X</td>
<td>X</td>
<td>X</td>
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<tr>
<td></td>
<td>Analyze Data Flow</td>
<td>X</td>
<td>X</td>
<td>X</td>
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<tr>
<td></td>
<td>Analyze Impact</td>
<td>X</td>
<td>X</td>
<td>100</td>
</tr>
<tr>
<td></td>
<td>Analyze Gap</td>
<td>X</td>
<td>X</td>
<td>100</td>
</tr>
<tr>
<td></td>
<td>Analyze Duplications/Redundancy</td>
<td>X</td>
<td>X</td>
<td>100</td>
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<tr>
<td></td>
<td>Analyze Operational Risk</td>
<td>X</td>
<td>X</td>
<td>100</td>
</tr>
<tr>
<td></td>
<td>Provide Application Portfolio Insights</td>
<td>X</td>
<td>X</td>
<td>100</td>
</tr>
<tr>
<td></td>
<td>Provide Capability View of App Portfolio</td>
<td>X</td>
<td>X</td>
<td>100</td>
</tr>
<tr>
<td>EA Practice / Capability Management</td>
<td>Market &amp; Brand EA Practice</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td>Manage EA Adoption Roadmap</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td>Manage EA Toolkit &amp; Services portfolio</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>

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Conclusions

- Value chains and capability models are emerging as industry standard best practices for planning, improving, and monitoring enterprise investments.
- As these are things that are good for the business, we should internalize them when thinking about how we improve and uplift our architecture practice.
- As the architecture profession advances and matures, understanding common activities all architects perform becomes more important.
Thanks for your attention and participation!