The Enterprise Architecture Body of Knowledge (EABOK®)

“Architectural Designs”

6 October 2015
Agenda

- **EABOK® Overview**
  - Neil Efrom, The MITRE Corporation

- **Example of EABOK Content: Reference Architectures**
  - Marshall Fisher, The MITRE Corporation

- **How Leadership Can Mature EA to a Practiced Discipline**
  - Henrik von Scheel, LEADing Practice, EABOK Governance Board member

- **Request for Engagement**
  - Con Kenney, National Defense University, EABOK Governance Board member
What is the EABOK?

Living, evolving reference of ready-to-use knowledge

Explore the essences of enterprise architecture.

Get Our Free Newsletter
About the EABOK

- Evolves with the profession
- Focused on practical application
What Makes EABOK Unique

- **Topic overviews**
  - Brief summary

- **Invited commentary**
  - Expanded / alternative view

- **Mixed Media Material**
  - White papers: e.g., synthesis, case studies
  - Annotated briefings
  - Instructional videos
  - Sample artifacts
  - Links to (copies of) material published elsewhere

- **Journal articles**
  - Open access publication
  - Immediate posting, published quarterly
  - Will also appear on separate page
  - New material only

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EABOK embraces diverse perspectives and experiences.
EABOK Vision

- Enterprise Architecture (EA): From frameworks to strategy
  - Evolving Practice
  - Evolving Vocabulary
- EABOK: From document to knowledge
- EABOK is a collection of ready-to-use knowledge about EA
- Practical knowledge about EA
  - Terms and Concepts
  - EA Standards and Practices
  - EA Methods and Patterns
  - EA Perspectives
- International collaboration with Govt., Academia, Industry
- Agile: start small, evaluate, adapt, and evolve

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Example of EABOK Content: Reference Architectures

Marshall Fisher
The MITRE Corporation
fishermh@mitre.org
Why Discuss Reference Architectures?

- Reference Architecture has multiple meanings depending on the functional community, organization, and/or architect.
- Guidance & best practices for Reference Architectures are difficult to discern or apply.
- Reference Architecture has been used in titles to describe other types of architectures.
- Various organizations and/or architects determined there is a need/role for Reference Architectures as a type or class of architecture description/model.
What is a Reference Architecture?

Reference Architecture

- Specific class or type of subject area
- Independent of technical solutions, protocols, and products
- Functions of intended use
- Many levels of abstraction possible
- Requirements of “what”
- Not “how to” design solution and implementation
- Facilitate common understanding of operational and technical intricacies
- Area covered clearly defined
- Clearly defined focus and scope

- Contents
- ISO 15704: 2000, Requirements for Enterprise-Reference Architectures and Methodologies
- OASIS, Reference Architecture for Service Oriented Architecture (SOA), 2008
- DoD, Reference Architecture Description, 2010
- NIST, Cloud Computing Reference Architecture, 2011

- Specific
- Sub-set
- Specialization within type or class
- Different emphasis or viewpoint
- Enterprise entity
- System
- Capability
- Organization
- Product
- Process

- Models abstract architecture elements
- Includes supporting technologies
- Guided by purpose
- Bounded by focus and scope

- Interoperability
  - Resource optimization
  - “Likewise” comparison
  - Systems
  - Services
  - Lines of business
  - Organizations

- Standardization
  - Alignment to enterprise architecture and common components
  - Systems
  - Services
  - Lines of business
  - Organizations

- Authoritative source
  - Reference foundation for multiple architectures and solutions
  - Common framework of reference
  - Guides and constrains multiple architectures and solutions
  - Assist and structure lifecycle of subject area elements
  - Tool for describing, discussing, and developing solution / system architectures

- Five (5) core components (DoD)
  - Strategic purpose
    - Principles
  - Technical positions
  - Patterns
  - Common vocabulary

- Solves a specific (recurring) problem
- Context
- Goals
- Purpose
- Problem definition
- When and how RA should be used
The Common Approach to Federal EA defines and describes Reference Architecture under EA Basic Element #5: Standards

- Standards achieve interoperability and resource optimization
- Standards enable “likewise comparisons” between systems, services, lines of business, and organizations

For the Joint Information Environment (JIE) Reference Architectures, provide additional definition for specific capability or technical areas in the EA to guide/constrain solution architectures

** Enabling the Joint Information Environment, JIE 101, DISA, May 2014
Back-Up Slides
## Defining a Reference Architecture

<table>
<thead>
<tr>
<th><strong>Definition</strong></th>
<th><strong>Source</strong></th>
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<tbody>
<tr>
<td>Capable of assisting and structuring the description, development, operation, and organization of any conceivable enterprise entity, system, organization, product, process, and their supporting technology – may cover a sub-set; are confined to a specific class or type of enterprise or systems; the area covered shall be clearly identified.</td>
<td>ISO 15704: 2000, Req for Enterprise-Reference Architectures and Methodologies</td>
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<td>Models the abstract architectural elements in the domain of interest independent of the technologies, protocols, and products that are used to implement a specific solution for the domain -- applies to a class of solutions; possible to define at many levels of detail or abstraction and for different purposes.</td>
<td>OASIS, Ref Arch for Service Oriented Architecture (SOA), 2008</td>
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<td>An authoritative source of information about a specific subject area that guides and constrains the instantiations of multiple architectures and solutions -- is independent of the technologies, protocols, and products used to implement the solution architectures.</td>
<td>DoD, Ref Arch Description, 2010</td>
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<td>Focuses on the requirements of “what,” not a “how to” design solution and implementation; intended to facilitate the understanding of the operational intricacies; does not represent the system architecture of a specific system; a tool for describing, discussing, and developing a system-specific architecture using a common framework of reference.</td>
<td>NIST, Cloud Computing Reference Architecture, 2011</td>
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<td>An authoritative source of information about a specific subject area that guides and constrains the instantiations of multiple architectures and solutions -- solve a specific (recurring) problem; explain context, goals, purpose, and problem being solved including when and how RA should be used; provide concepts, elements, and their relationships; a reference foundation for architectures and solutions; may be used for comparison and alignment purposes; may be multiple RA within a subject representing a different emphasis or viewpoint of that area; can be a specialization of a more general RA; level of abstraction is a function of RA’s intended use.</td>
<td>OMB, A Common Approach to Federal Enterprise Architecture, 2012</td>
</tr>
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</table>
A Reference Architecture provides patterns of abstract architectural elements based on a strategic purpose, principles, and technical positions together with a common vocabulary within a Subject Area.
Taking Leadership to Mature EA to a Practiced Discipline

Henrik von Scheel
LEADing Practice
hvs@leadingpractice.com
Agenda

- EA Maturity
  - Global Research on EA
  - Real-life example: EA BOK case story
  - What in it for you?
WHY EABOK?

1. Where do we want to mature the EA discipline?

2. How do we best drive the EA discipline forward?

3. Who do we need to involve to mature the EA discipline?
Agenda

- EA Maturity
- Global Research on EA
- Real-life example: EA BOK case story
- What in it for you?
Global University Alliance
A consortium of 450+ universities dedicated to agnostic and vendor neutral research

- The study of how EA can be modelled, engineered and architected
- Agnostic and vendor neutral
- Based on research around patterns and practices
Information and research is sought on topics related to the understanding and comparison of Enterprise Architecture Frameworks (EAFs), including, but not limited to:

- Organization and modularization principles of EAFs
- Semantic foundations of EAFs
  - What common Ontology aspects do they have?
  - What common meta objects do they have?
- Extension and customization mechanisms for EAFs
- Comparing EAFs, method and approaches for comparison
- What EA roles exist
- Concern-oriented considerations:
  - What concerns are well-supported (typical concerns they work with)?
  - What concerns are not currently handled?
- Model and viewpoint considerations:
  - Typical models they work with?
  - What challenges are not being addressed by current models?
- What are their tasks? How are EAFs situated with respect to other life cycle processes and activities?
- Which E Architecture (KPIs) exist. Tool support: what impediments, opportunities exist?
- The most common value of EA
Focus on company and public sector leaders

- 1,765 CEO’s, 906 CFO’s and 2,936 business and public sector leaders representing 63 countries across 17 industries
- Leaders from the private (78%) and public (22%) sectors
- 20% of the CXOs are from countries with emerging economies, 80% from established economies
- 33% Asia, 36% EMEA and 31% Americas
- Organization size
  - Companies of +$500 M (established economies) and $250M (emerging economies) in annual revenue
  - Public sector organizations with + 1,000 employees

Quantitative and qualitative analysis

- Analysis of respondents’ current behaviour, investment performance, patterns and future intent
- Analysis of choices being made by financial outperformers
Market Growth and Recession Business Modelling Principles
Learning from the Leaders: Global University Alliance Study 2014

Executive Summary

Key Findings

Take Away

Learning from the past 40 years of Stock Cycle Abstract (S&P 500 Volumes)

Business Model Domain Focus
- Economic cycle abstract (S&P 500 Volumes)
- Stock cycle abstract (S&P 500 Volumes)

- Cost Model
- Performance Model
- Service Model
- Value Model
- Revenue Model
- Operating Model

Source: Learning from the Leaders: Global Univeristy Study on Best Practice Research, 2011/2012. Scope: 1765 CEO’s and 2936 business leaders representing all major countries and industries
What is the Current State of These Parts of the EA Program?
Learning from the Leaders: Global University Alliance Study 2014

Executive Summary

Key Findings

Take Away

What is the current state of these parts of the EA program?
(percentages are rounded and may not necessarily reflect 100%)

- We have not addressed
- We have implemented only a small part of what we really need
- We have implemented a moderate amount
- We have implemented a very large percentage
- We have implemented nearly all of what we will need

Business & EA Research: 1765 CEOs and 2936 business leaders representing all major countries
What is the Current State of These Parts of the EA Program?

Learning from the Leaders: Global University Alliance Study 2014

Introduction
## Executive Summary

### Key Findings

What is the current state of these parts of the EA program? (percentages are rounded and may not necessarily reflect 100%)

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<th>Integration Architecture in %</th>
<th>Information Architecture in %</th>
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1. Business Architecture in %
   - 19
   - 43
   - 25
   - 11
   - 2

Business & EA Research: 1765 CEOs and 2936 business leaders representing all major countries
Rating of Strategic Importance - Reasons of the Rating?
Learning from the Leaders: Global University Alliance Study 2014

Executive Summary

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Introduction

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Reasons:
1. Link to Strategy (Strategic Business Objectives)
2. Improve Competitiveness (growth & cost potential)
3. Link to Business Model
4. Service Model Innovation & Transformation
5. Link to the Critical Success Factors (CSFs) of the organization
6. Operational Excellence
7. Decision Making
8. Agile

Business Architecture in %

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THE BUSINESS COULDN’T SEE OR UNDERSTAND VALUE

Anti-pattern: LOST IN TRANSLATION

- Insufficient stakeholder understanding and sponsorship
- Missing link between business model and EA
- Lack of artifacts to connect strategy to EA or understand business needs
- Most EA teams keep busy documenting as-is states.
- No common language and poor communications
- Lack of performance measures
WE COULDN’T SHOW RESULTS FAST ENOUGH

Anti-pattern: IVORY TOWER AND DOMINO EFFECT

- Big gaps exist between layers, instead of seamless relationships
- EA is siloed by design and fails to connect business and technology
- EA is not only "IT Architecture,” but consists of 12 distinguished and interconnected disciplines
  - Framework, method and tool centric (siloed)
  - No common language
  - Lack of skills and knowledge e.g. artefact, maps, models, matrix
- Few people establish effective EA governance early
- Successful programs, but lack of value to the overall programs or portfolios
  - Models are mostly produced alone with little reuse value, with a huge information gaps
  - Most EA programs are initiated by IT & never progress beyond the technology domain
- Lack of Governance
Agenda

- EA Maturity
- Global Research on EA
- Real-life example: EABOK case story
- What’s in it for you?
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- EA Maturity
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- Real-life example: EA BOK case story
- What’s in it for you?
What’s in it for you?
Questions?

Henrik von Scheel

EABOK Advisory Board Member

CEO & Cofounder of LEADing Practice
Board Member at Global University Alliance
Advisory Board Member at Google, Gazprom, etc..

Mobile  +1 613 712 1119  
E-Mail: HvS@LEADingPractice.com

For more information:
www.LEADingPractice.com

Dr. Sheila A. Cane

EABOK Advisory Board Chair

Principal Information Systems Engineer
The MITRE Corporation

Office:  703.983.2329  
E-Mail: sheila@mitre.org

For more information:
www.LEADingPractice.com
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Request for Engagement

Con Kenney
NDU iCollege
EABOK Advisory Board Member
cfkenney@live.com
EABOK Web Page—Updates

- **Topic Overviews**—Currently revising EABOK’s overview topics to meet the information needs of new EA practitioners.

- **Invited Commentaries**—Importing commentaries from experienced practitioners to offer additional perspectives.
  - Volunteers Needed. Please write a commentary on an EA topic where you have passion and something to offer.
EABOK Web Page—Updates

- **Journal Articles**—see EABOK site for more information

- **Multi-media Content**—Planning to offer more multi-media content, e.g. video, models, simulations, and podcasts.
  - **Do Share**—Your multi-media content on the EABOK!

- **Moderators Needed**—To facilitate topic overview commentaries.
Contact Us!
Presenters (By Order of Appearance)

- **Neil Efroom**, The MITRE Corporation, nefrom@mitre.org
- **Marshall Fisher**, The MITRE Corporation, fishermh@mitre.org
- **Henrik von Scheel**, LEADing Practice hvs@leadingpractice.com
- **Con Kenney**, National Defense University, cfkenney@live.com
- Website: [www.eabok.org](http://www.eabok.org)
- Email: [eabok@mitre.org](mailto:eabok@mitre.org)
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