

# Best Practices for Driving SOA Implementation With EA Programs

Track 3: Implementation Strategies, Results, and Experience  
6<sup>th</sup> Enterprise Architecture Conference and Exhibition,  
September 11-13, 2006, Ronald Reagan Building and  
International Trade Center, Washington, DC  
Brand Niemann, Enterprise Architecture Team, US EPA, and  
Co-Chair, SOA Community of Practice  
September 12, 2006, 10:15 -11:30 am

# What Attendees Will Learn

- 1. The impact of Service-Oriented Architecture (SOA) on EA programs.
- 2. How architects can ensure widespread SOA adoption within their agency.
- 3. The current state of SOA across federal government.
- 4. How to establish an SOA vision and follow a practice methodology.
- 5. How to cope with confusing buzzwords, conflicting techniques, overlapping technologies, and other aspects of the SOA landscape.
- 6. Best practices for SOA initiatives assessment and measurement of SOA maturity.
- 7. How to achieve a workable balance between the FEA and SOA.

# Roadmap

- 1. Slides 3-4.
- 2. Slides 7-17.
- 3. Slides 20-23 and 25-26.
- 4. See Slide 21 - Everware – CBDI Tutorial.
- 5. Slide 19 and 24 – Read the Book.
- 6. Slide 25 – Panel Session and IAC SOA Committee Survey.
- 7. Slide 17 and 25-26 – Join the SOA CoP and participate in its activities!
  - Register for October 30-31<sup>st</sup> at <http://www.mitre.org/register/soa/>

# Abstract

- Enterprise architecture in the Federal Government is evolving into two camps, namely, the Federal Enterprise Architecture (FEA) and Service-Oriented Architecture (SOA). The FEA focuses on the OMB budget process and project management while SOA is the actual modeling of complex IT and governance environments like GSA is doing for the Financial Management Line of Business (LoB). Both are needed and can be complimentary - which is what this conference session will show about achieving a wise balance between the two in support of the Lines of Business (LoB) and the new Federal Transition Framework (FTF).

# Abstract

- The SOA CoP is a joint project of the Governance Subcommittee of the Architecture & Infrastructure Committee and Semantic Interoperability CoP of the Best Practices Committee that is working to bridge these two camps by using a community of practice approach to develop a SOA Interoperability Demonstration Protocol (SIP) and an IAC-sponsored survey of the IT community on the culture, education, and technology aspects of SOA.
- This presentation will report on the First SOA for E-Government Conference, May 23-24<sup>th</sup>, the SIP, and the IAC-sponsored survey. It will also report on plans for the 2<sup>nd</sup> SOA for E-Government Conference, October 30-31<sup>st</sup>, where more SOA interoperability demonstrations between vendors are expected.

# My Background - Brand

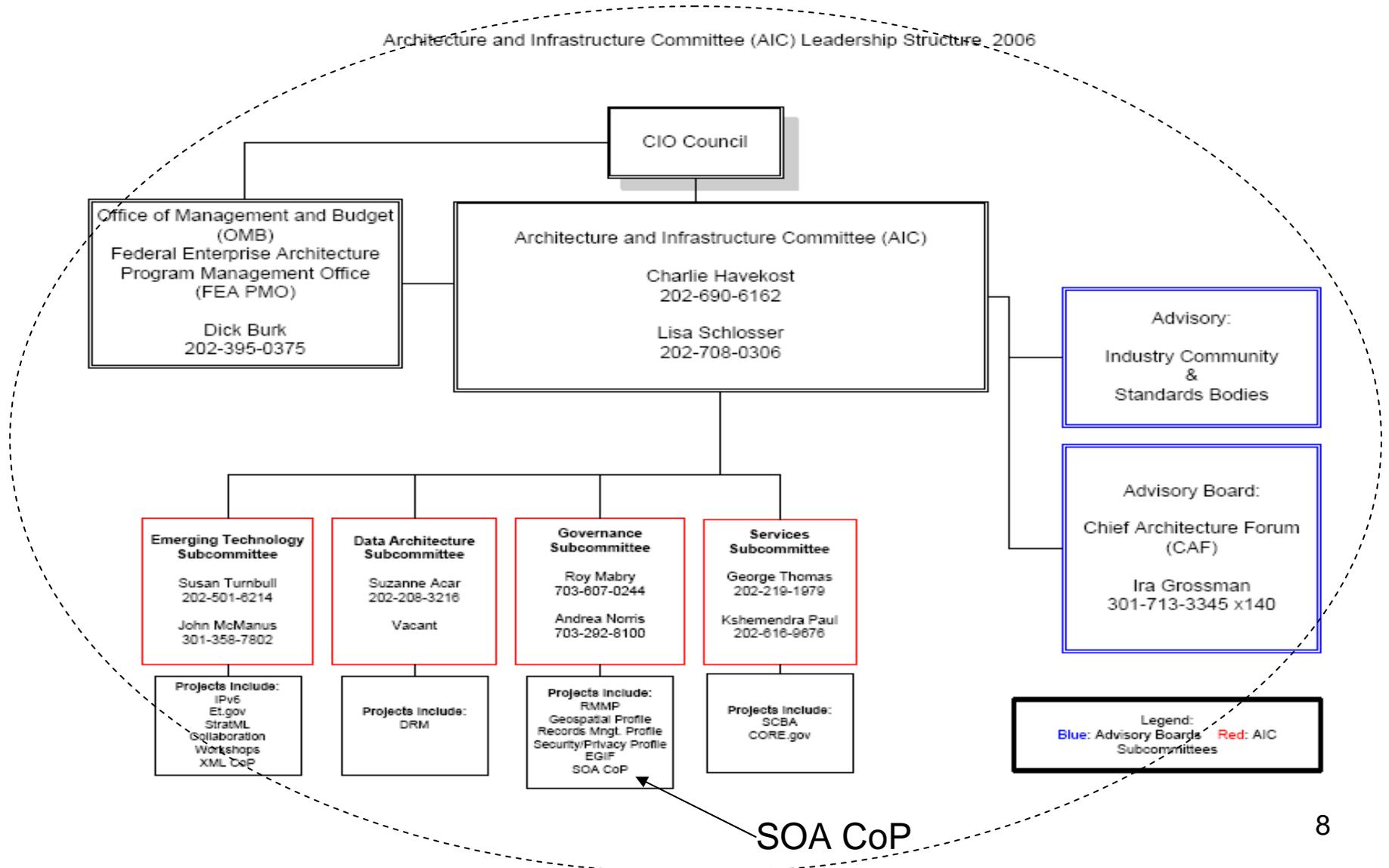
- US EPA Office of the Chief Information Officer and Environmental Information, Enterprise Architecture Team:
  - EPA Data Architecture for DRM 2.0
- Federal Chief Information Officer Council, Federal Enterprise Architecture's Data Reference Model 2.0:
  - Lead for Implementation Through Testing & Iteration
- Federal CIO Council's Two Committees:
  - Co-Chair, SOA Community of Practice
    - First SOA for E-Government Conference, May 23-24, 2006
    - Second SOA for E-Government Conference, October 30-31, 2006
  - Co-Chair, SICoP
    - Semantic Interoperability Community of Practice
      - World Wide Web Consortium's Semantic Web Standards and Semantic Agents
    - 5<sup>th</sup> Semantic Interoperability for E-Government Conference, October 10-11, 2006

# Federal Organizations

- The Federal CIO Council has three Committees:
  - Architecture & Infrastructure (AIC), Best Practices (BPC), & IT Workforce (ITWF).
    - The AIC has four Sub-committees (see next slide) that support the OMB Federal Enterprise Architecture (FEA) Program Office led by Chief Architect, Richard Burk.
    - The AIC & BPC have done joint events & collaborations (see slide 13) that have focused EA governance issues.

# Federal Organizations

Architecture and Infrastructure Committee (AIC) Leadership Structure, 2006



# Networking EA and KM: 6 Reasons

Enterprise Architecture	Knowledge Management	Best Practice Examples
1. FEA Reference Models: Essentially a Taxonomy	Use Taxonomies	GSA REA-RM Ontologies for Model-Driven EA
2. Data Reference Model 2.0: Specifies Use of Taxonomies	Uses Taxonomies	SICoP Knowledge Reference Model=DRM 2.0+ Semantic Metadata
3. New Federal Transition Framework and A-300s Involves Subject Matter Expertise	Uses Subject Matter Expertise	Knowledge Base of EA-KM CoP Activities in the COLAB Wiki
4. Some agencies use EA to sell KM	KM needs EA help to do A-300s	FAA
5. Some of the leading EAs are KMers	KMers are Information Architects	Mike Daconta, Pat Heinig, Con Kenny, Rick Murphy, Roy Roebuck, etc.

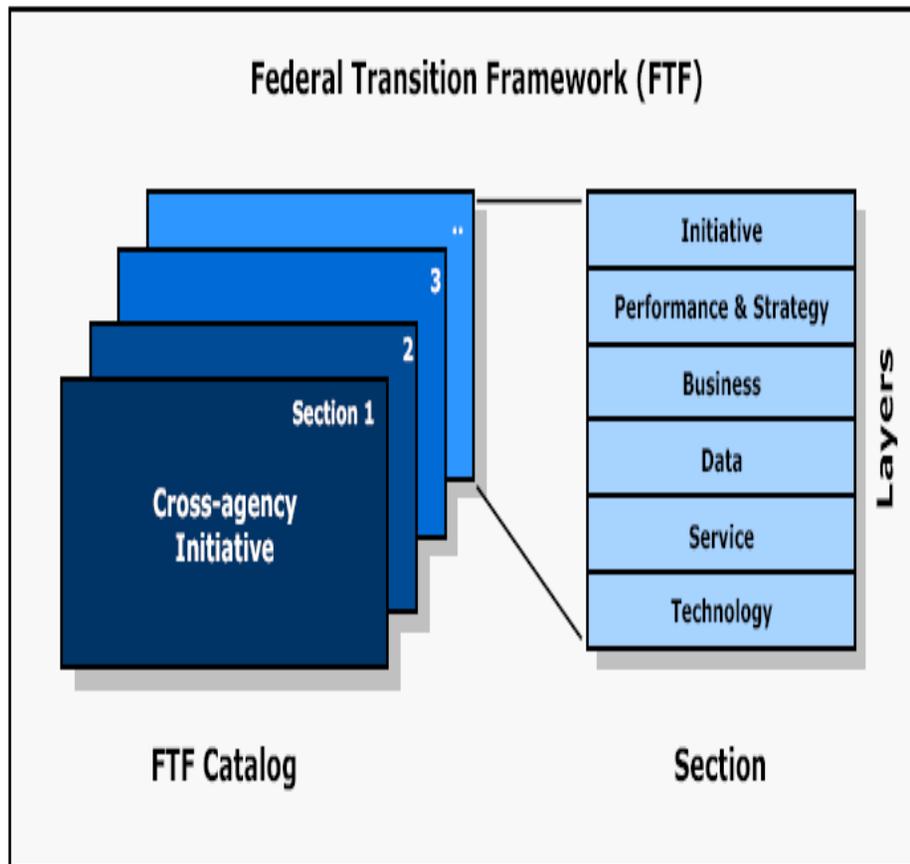
See Reason 6 on next slide.

## 6. Relationship Between AIC and BPC Activities

<b>Architecture &amp; Infrastructure Committee</b>	<b>Best Practices Committee</b>	<b>Comments</b>
Data Architecture SC	Semantic Interoperability CoP	Proposed Data Quality CoP
Emerging Technology SC	Semantic Interoperability CoP	Doing Joint Events
Governance SC	IT Performance Management CoP Enterprise Process Improvement CoP	Have Reference Model Maintenance Process in common
Services SC	SOA CoP	Joint Pilot Demonstration Specification
Industry Advisory Council	Industry Advisory Council	Each Working with Different Parts of IAC
Chief Architects Forum ArchitecturePlus Seminars	KM WG Chief Knowledge Officers and Architects	KM WG doing inventory

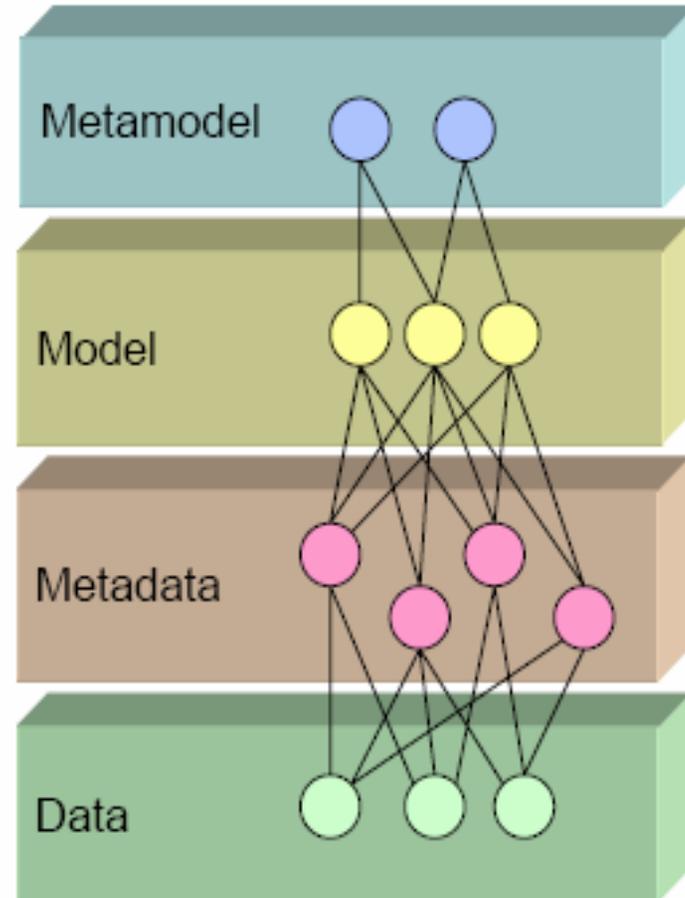
# Metamodels

This “publish catalog” could lead to...



the “publish”, “find”, & “bind” of a SOA.

This metamodel for DRM 2.0 could...



become services layers in a SOA.

# Federal Organizations

- January 24, 2006, Workshop on Bootstrapping Service-Oriented Architecture and Semantic Interoperability Toward Transformative Practice Featuring:
  - SOA for E-Gov Initiatives Like E-Grants at the Federal and State Level and Federal Health Architecture Data Architecture.
  - SOA Governance (see next slide).
  - SOA Best Practices.

See [http://colab.cim3.net/cgi-](http://colab.cim3.net/cgi-bin/wiki.pl?ExpeditionWorkshop/AdvancingCredibleCommitments_AgileSensing_BootstrappingServiceOrientedArchitecture_2006_01_24)

[bin/wiki.pl?ExpeditionWorkshop/AdvancingCredibleCommitments\\_AgileSensing\\_BootstrappingServiceOrientedArchitecture\\_2006\\_01\\_24](http://colab.cim3.net/cgi-bin/wiki.pl?ExpeditionWorkshop/AdvancingCredibleCommitments_AgileSensing_BootstrappingServiceOrientedArchitecture_2006_01_24)

# Federal Organizations

- Highlights of SOA Governance Issues:
  - Difficulty understanding the relationship between the FEA and SOA (slides 9-15).
  - The need to understand the software design principle of “abstraction and indirection” and its application to SOA to know when to apply SOA (slides 19-26).
  - The need for some best practices of SOA, Composite Applications, SSOA, and their platforms (slide 44).
  - The need for some best practices of SOA Governance approaches (slides 45-46) (see slides 11-12).
  - Comments at Chief Architects Forum, January 26, 2006 (slides 55-56).

See <http://web-services.gov/scopesoa01242006.ppt>

# SOA Governance Approaches

- Opportunistic – Make every new application and system modernization a state-of-the-art Web Service.
  - EPA’s Award Winning Web Services.
    - Kim Nelson: “I wish we had created more Web Services than data warehouses.”
- Mandated from on high – The Joint Chiefs of Staff said we will have a medical readiness information system to go to war in Iraq.
  - Medical Operational Data System (MODIS).
    - Incremental bootstrapping approach. July 22, 2003, see <http://www.mods.army.mil/>

# SOA Governance Approaches

- Specified in Collaborative Software Component Development and Reuse:
  - Dr. Jeffrey Poulin, “Measuring Software Reuse: Principles, Practices, and Economic Models”, Addison-Wesley, May 14, 2004, Workshop (next slide).
- Fostered in Communities of Interest:
  - DoD Col Forum: Propose pilot to expose and share data with Web Services, get sign-off by 1-2 star general, complete the pilot, and expose to acquisition (January 19, 2006, meeting).
- Visionary Agencies and Organizations:
  - NSA SSOA - Participation in standards organizations and piloting of state-of-the art emerging technologies.

# Some Earlier Resources

- Emerging Technology Innovations in Software Components Development, Reuse, and Management – Applications to Government Enterprise Architecture, May 14, 2004:
  - See [http://colab.cim3.net/cgi-bin/wiki.pl?ExpeditionWorkshop/SoftwareComponentsWorkshop\\_2004\\_05\\_11](http://colab.cim3.net/cgi-bin/wiki.pl?ExpeditionWorkshop/SoftwareComponentsWorkshop_2004_05_11)
- Suggested Roadmap from the FEA to SOA/SIA, Management of Change Conference, May 25, 2005:
  - See <http://web-services.gov/scopemoc05252005.ppt>
- High Performance Government: SOA Led Organization Transformation – Racing Towards Business Improvement, SOA Executive Event, May 12, 2005:
  - See <http://web-services.gov/scopesoa05122005.ppt>

# Upcoming Events

- September 11-13, 2006, 6th Enterprise Architecture Conference & Exhibition (not free):
  - Track 3: Implementation Strategies, Results, and Experience:
    - September 12, 2006, 10:15AM - 11:30PM, Session 3-4: Best Practices for Driving SOA Adoption With EA Programs
      - What Attendees Will Learn (recall slide 2).
- September 13th, Special Meeting of the Best Practices Committee - 1-2:30 p.m. (free):
  - Theme: Networking EA and the BPC's CoPs (recall slides 9-10 for 6 Reasons Why)
    - Atrium Ballroom B, Reagan International Trade Center (Federal Triangle Metro Station).

# Co-Chair- Greg Lomow

- 10+ years experience designing and implementing SOA Solutions
  - Public Services, Financial Services & Commercial Services
- Co-Author “Understanding SOA with Web services”, Addison-Wesley, 2005
- Co-Chair, SOA Community of Practice
  - First SOA for E-Government Conference  
May 23-24, 2006
  - Second SOA for E-Government Conference  
October 30-31, 2006
- BearingPoint, Inc
  - System Architect & PS SOA Solution Lead



# SOA Readiness Test

- 1. Service Orientation is:
  - a. A business concept
  - b. A technology concept
  - c. A software development concept
  - d. A McDonald's concept
- 10. SOA is:
  - a. Service-Oriented Architecture
  - b. Leveraging business resources as Services
  - c. An Enterprise Architecture Pattern
  - d. All of the above

SOA for E-Government Conference, May 23-24, 2006, Based on Service Orient of Be Doomed! How Service Orientation Will Change Your Business, by Jason Bloomberg & Ronald Schmelzer, Wiley, March 2006, 272 pages.

# SOA for E-Government Conference, May 23-24<sup>th</sup>, 2006

- Opening and Closing Keynotes:
  - Ron Schmelzer, Founder of ZapThink.
  - Richard Soley, CEO, OMG.
- SOA CoP Demo:
  - Cory Casanave, CEO/President, Data Access Technologies, Inc.
  - Current Commercial Participants: Sun, Booz Allen Hamilton, Starbourne Communications Design, and Oracle
- Panel Session - Embracing the right people, questions, and policies for success with SOA in the Federal enterprise and the SOA Survey, Industry Advisory Committee SOA Committee.
- Networking Lunch and Exhibits/Demos (30)
- Special Recognitions (9)
- Breakout Session (12):
  - Security within SOA, SOA Technologies, and SOA Pilots and Implementations.

# SOA for E-Government Conference, May 23-24<sup>th</sup>, 2006

- Four Tracks:
  - Track 1: SOA Reference Models, Specifications, and Standards, Rebekah Metz, Booz Allen Hamilton
  - Track 2: SOA Governance, Eric Marks, President/CEO, AgilePath
  - Track 3: SOA Implementation and Testing, Cory Casanave, CEO/President, Data Access Technologies, Inc.
  - Track 4: Connections to the FEA Service Components Reference Model, George Thomas, Chief Architect, GSA
- Two Half-day Tutorials:
  - Everware - CBDI, David Sprott and David Mayo.
  - Model Driven Architecture and Semantic Web Services: A Case Study, Elisa Kendall.

# Special Recognitions

- Sophia Brock, MITRE: For “Outstanding Service” to the First SOA for E-Government Conference.
- Roy Mabry, Co-Chair AIC Governance Subcommittee: For "Fostering" the SOA Community of Practice and the First SOA for E-Government Conference.
- Ron Schmelzer, ZapThink: For "Outstanding Leadership" to SOA as Founder of ZapThink and Co-Author of “Service Orient or Be Doomed!: How Service Orientation Will Change Your Business”.
- Cory Casanave, CEO/President, Data Access Technologies, Inc.: For "Outstanding Leadership" of the SOA Community of Practice SOA Demonstration and Specification for the First SOA for E-Government Conference.

# Special Recognitions

- IAC SOA Committee - Greg Hauser, Chair, Sid Chowdhary, Co-Chair, Gerry Anderson, Programs Chair, Bob Brogan, Software Focus Group Manager, Jana Jackson, SOA Benefits & Cultural Change Focus Group Manager, John Smith, CTO, and William Sweet, SOA Technology Solutions Focus Group Manager: For the "SOA Readiness Panel and IAC SOA Survey" at the First SOA for E-Government Conference.
- Forum Systems — Web Services & SOA Security and Parasoft's SOATest — Testing Service-Oriented Architectures: For "Best Exhibit".
- Anthony Bradley, Booz Allen Hamilton, Bringing SOA to Life: The DCGS-A interface Specification Drive: For "Best Presentation" in the Main Session
- Sukumar Dwarkanath, COMCARE, and Michael Daconta, Oberon Associates, Emergency Services Enterprise Framework: A Service-Oriented Approach: For "Best Presentation" in the Breakout Session.

# More SOA Readiness Test

- 7. The “secret of the best ice skaters” is to:
  - a. Not fall
  - b. Do as many quads as possible
  - c. Wear a fancy costume
  - d. Make it look easy
- 13. Your SOA pilot should:
  - a. Build acceptance for SOA within the organization
  - b. Evaluate various commercial products that purport to help with SOA rollout
  - c. Educate the technical team on the intricacies of SOA
  - d. Work on the more challenging aspects of its constituent Services
  - e. All of the above

SOA for E-Government Conference, May 23-24, 2006, Based on Service Oriented of Be Doomed! How Service Orientation Will Change Your Business, by Jason Bloomberg & Ronald Schmelzer, Wiley, March 2006, 272 pages.

# SOA for E-Government Conference, October 30-31<sup>st</sup>, 2006

- Opening and Closing Keynotes:
  - Ron Schmelzer, Founder of ZapThink.
  - David Linthicum, BRIDGEWERX
- SOA CoP Demo:
  - Cory Casanave, CEO/President, Data Access Technologies, Inc. and Commercial Participants
- Panel Session (being organized by Ron Schmelzer):
  - Lessons learned for SOA and maturing the state of SOA adoption and experiences with more advanced SOA implementations.
- Networking Lunch and Exhibits/Demos (30 maximum)
- Special Recognitions
- Breakout Session (12):
  - Topics to be determined from submissions.

# SOA for E-Government Conference, October 30-31<sup>st</sup>, 2006

- Four Tracks:
  - Track 1: Real World SOA Experiences/Lessons Learned Being Organized by Ali Arsanjani, IBM, and Marc Halley, MITRE
  - Track 2: SOA for Information Sharing Being Organized by Greg Lomow, BearingPoint
  - Track 3: SOA and BPM, MDA, etc. Being Organized by Cory Casanave, Data Access Technologies, Inc.
  - Track 4: SOA and Metadata (Ontology) Being Organized by Chuck Mosher, MetaMatrix
- Two Half-day Tutorials:
  - Topics to be determined from submissions.