OMG SOA SIG Activity Debrief

By: OMG SOA SIG
SOA Overview

Diagram adapted from Proforma Corp
SOA Challenge

- Need more emphasis on Business & Architectural aspects of SOA
- SOA and Services definitions still emerging
- Need traceability of Services to business processes & functions, compliance..

- Many standards organizations are developing standards with possible overlaps and rapid churn
- Vendors are repositioning their products as SOA enabled, end-to-end solution and takeovers leaving the Consumer with the burden to identify the best of breed solution
- ..We know this already...so what is OMG doing?
SOA SIG Mission & Participants

Mission

- Support an MDA approach to SOA that links architectural, business and technology views of Services, including Business Process Management (BPM) and Event-Driven Architecture (EDA)
- Identify and foster development of OMG modeling standards for SOA that integrate with and complement standards developed by other organizations such as W3C, Open Group and OASIS

Participants

- IBM, HP, SAP, BEA, Unisys, EDS, RTI, Model Driven Systems, Adaptive, MEGA, MetLife, VISA, Bank of America, CitiGroup, Boeing, Raytheon, Rhysome, AptSoft, XAware, SOA COP, SOA Project, The Open Group, OASIS, Satyam, US EPA, ebizQ, Georgetown University, NIST, Liberty-Mutual, Prima-Solutions…
OMG’s Approach & Value Proposition

- While other organizations have focused on specific standards for integration or web services protocols (e.g., WS-* standards), OMG complements their efforts by taking a Platform Independent View and applying a **Modeling Approach to SOA**

**Modeling is OMG’s Core Competence…**

- Modeling offers the capability to design a complete SOA solution
- Intellectual property documented through models can have a longer lifespan, allowing an organization a choice of the best technical platform for SOA implementation
SOA Related Business Modeling Standards

- **Business Motivation Model (BMM)**
  - Mission, goals and objectives for an organization linked to external factors

- **Semantics for Business Vocabulary and Rules (SBVR)**
  - Combines natural language expression with precise logical underpinning

- **Business Process Modeling Notation (BPMN)**
  - Existing standard from BPMI.org (merged into OMG)

- **Business Process Definition Metamodel (BPDM)**
  - Notation and platform independent process modeling and interchange

- **Production Rules Representation (PRR)**
  - Platform independent model for executable rules

- **Business Process Runtime Interface (BPRI)**
  - Platform independent interfaces to running processes

- **Organization Structure Metamodel (OSM)**
  - Organizations, relationships, positions and roles

* in development
SOA Related Technology Modeling Standards

- **UML**
  - Architecture and design of services/internals
  - General purpose modeling language (via UML Profiles)

- **Reusable Asset Specification (RAS)**
  - Packaging of reusable assets for retrieval, usage and deployment

- **CWM and forthcoming Information Management Metamodel (IMM)**
  - Service Payloads (information content) and mapping to enterprise data sources

- **Ontology Definition metamodel (ODM)**
  - Modeling Ontology of ‘Services’ and Events’
  - Facilitate development of Semantic Web Services

- **Knowledge Discovery Metamodel (KDM)**
  - Models of the enterprise systems to which services typically map

- **Software Process Engineering Metamodel (SPEM)**
  - Modeling the SOA development process (Service Life cycle)
OMG Standards apply to all layers of SOA


**Figure 1. A Service Oriented Architecture. [1]**
Some of the OMG MDA Standards that Support SOA are listed on the right in blue.
Summary of Gap Analysis Effort

- Modeling approach to SOA*
- Service Traceability to Business Processes*
- Service Relationship to Events*
- Need to Harmonize development of SOA Standards*
- Ontology & Semantics of Services*
- Service Discovery & Assets
- SOA Life Cycle Metrics and Maturity
- SOA Governance & Compliance

* Gaps OMG SOA SIG started working on
Standards in Development

- UML Profile and Metamodel for Software Services (UPMS) RFP
  - MOF metamodel and equivalent UML2 profile
  - Extend, but not conflict with UML semantics
  - Notation icons for services extensions
    http://www.omg.org/cgi-bin/doc?soa/06-09-09

- Event Driven Architecture and its relationship with SOA, BPM - RFI
  - Requested information is being used to develop Event definition, relationship between EDA, BPM and SOA ultimately leading to development of standards for:
    - Event life cycle metrics
    - Ontology of Events
    - Sense and Respond Services
    - Processing of complex events
    http://www.omg.org/cgi-bin/doc?soa/06-09-02
UPMS Goals

- A common vocabulary and metamodel to unify the diverse service definitions that exist in the industry
- Complement existing UML metamodel by defining an extension to UML to ensure complete and consistent service specifications and implementations
- Integrate with and complement standards developed by other organizations such as W3C and OASIS
- Support a service contract describing the collaboration between participating service consumers and service providers
- Enable traceability between contracts specifying services requirements, service specifications that fulfill those requirements and service providers that realize service specifications
UPMS Goals

- Facilitate the adoption of Service Oriented Architecture through
  - More abstract and platform independent services models to speed service development,
  - Decouple service design from evolving implementation, deployment and runtime technologies
  - Enable generation of platform specific artifacts
- The ability to exchange services models between tools using XMI
Event Driven Architecture

Why are we talking about EDA here?

- Event-Driven Architecture (EDA) complements Service Oriented Architecture (SOA)
- Understanding which applications are optimized for each architecture and how they interface to each other allows for improved architecture designs
- SOA standards need to be developed to better define an interface to EDA
EDA RFI Overview & Status

The information requested by this RFI is divided into the following categories:

- Event and EDA Definitions
- Existing Research and Standards work regarding EDA/CEP
- EDA / CEP Modeling Standards and Requirements
- Event Driven Architecture Implementation
- Relationships between EDA and SOA
- Relationships between EDA and BPM

http://www.omg.org/cgi-bin/doc?soa/06-09-02

Compiled and Summarized RFI responses

Identified applicable OMG Standards

- UML 2.0, CORBA Event Service Specification, SysML, Notification Services Specification, EDOC...
- Identified applicable Standards from other organizations
  - Event Processing Glossary by Prof. David Luckham, Stanford University
EDA/ CEP Activity: Other Opportunities

- Contribute to development of UPMS
  - Service and Event relationship
- Extend the Reusable Asset Specification (RAS) to support EDA/CEP
- EDA/CEP Metamodel
- Event Ontology using ODM
- Causality relationship Metamodel
- Events traceability to Services, causality in execution and governance
- Integration of EDA and Agent standards
SOA Standards Harmonization

The mission of the SOA Standards Harmonization activity is to:

- Enable various standards organizations to reconcile their SOA efforts and offer clarity to the end-users lost in the maze of SOA standards.

- Prioritize and foster development of standards applicable to Business and Technology Dimensions of SOA.

- Enable standards organizations to become trusted advisors to the SOA community.
How to Harmonize! some thoughts…

- Develop and publish a roadmap of who is developing which category of SOA standards
  - Avoid overlaps and leverage each other’s strength/core competence

- Develop & publish a public repository of SOA and related standards (SOA Standards Wiki)
  - Not the details of each standard but classification of standards, overview, status (RFI, RFP, Submission, Adopted..), reference implementation (if any) and links to responsible organizations and noteworthy news…
  - Wiki (draft) to be made available in April 2007

- Publish what type of applications, projects are not suitable for SOA
  - With so much hype, it is hard to distinguish what are the scenarios where using SOA/Services may not be the ‘Silver Bullet’
Harmonization Activity Status

- OMG, The Open Group, OASIS, Open SOA (OSOA) organization and EVERWARE-CBDI informally started the ‘Harmonization Effort’
  - Joint development of Service Ontology (leveraging The Open Group’s Ontology work)
  - Use of OASIS’ SOA reference model and vocabulary in OMG’s SOA standards development as applicable
  - Discussions started with Everware-CBDI to harmonize their SOA metamodels with the OMG’s UPMS (additional joint RFP planned)

- OMG working with Events Processing Technical Society on the eventual development of modeling standards for EDA/CEP
  - The goal of this technical society is to promote the understanding of the “event processing” area, its potential impact and serve as a catalyst to the growth and understanding of the area by the general technical and business community
    - Collaborating with The Events Processing Reference Architecture Working Group on CEP/EDA patterns and extensions to OMG standards relevant to events processing
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Thanks for your Time..