The Use of Standards in SOA

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The 2nd Service Oriented Architecture (SOA) and Web Services Best Practices

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OPEN STANDARDS
What is an Open Standard?

An open standard is:

- publicly available in stable, persistent versions
- developed and approved under a published, transparent process
- open to public input: public comments, public archives, no Non-Disclosure Agreements (NDA)
- subject to explicit, disclosed (Intellectual Property Rights) IPR terms

Anything else is proprietary

- That's not a pejorative, it's a description
- Using a single company's method, or joint work from several companies, may be fine: but it has a different set of risks and qualities than the official output from a genuine open standards process
Standards ROI

- Normalizing data, processes and users costs time and money
- ROI can come from operational savings and outweigh the costs, if those savings are stable and persistent
- This requires:
  - Established versioning
  - Reliable, fixed terms of availability (some protection against withdrawal or “embrace-and extend”)
  - INTEROPERABLE standards
  - CONVERGING standards
Regulatory case for Open Standards

- Increasingly, it matters to government regulators and implementers whether standards are developed under an open, fair, vendor-neutral process.
  - WTO Technical Barriers to Trade Agreement
    - http://www.wto.org/english/docs_e/legal_e/final_e.htm
  - United States criteria
    - http://www.whitehouse.gov/omb/circulars/a119/a119.html

- Industry users care about the same issues
Interoperating with the world

- Cooperation, liaison and harmonization with other standards organizations is a strategic OASIS priority
  - Working to reduce duplication and promote interoperability
  - Gaining sanction/authority & adoption for OASIS Standards

- Formal working relationships with:
  - ISO, IEC, ITU, UN-ECE MoU for E-Business
  - ISO/IEC JTC1 SC34, ISO TC154 (Cat. A Liaison)
  - ITU-T A.4 and A.5 Recognition
  - IPTC, LISA, SWIFT, UPU
  - ABA, ACORD, AIAG, HL7, HR-XML, ISM, MBAA, NASPO, European ICTSB, CEN/ISSS, EC SEEM, PISCES, LRC
  - Asia PKI, CNNIC, EA-ECA, ECIF, KIEC, PSLX, Standards-AU
  - BPMI, CommerceNet, GGF, IDEAlliance, OAGi, OGC, OMA, OMG, RosettaNet/UCC, W3C, WfMC, WSCC, WS-I, ANSI
Standards Adoption

- To be successful, a standard must be **used**
- Adoption is most likely when the standard is
  - Freely accessible
  - Meets the needs of a large number of adopters
  - Flexible enough to change as needs change
  - Produces consistent results
  - Checkable for conformance, compatibility
  - Implemented and thus practically available

- **Sanction** and **traction** both matter
Standards: Traction vs. Sanction

TRACTION

Market Adoption

PROPRIETARY

COMMERCIAL VENTURE

CONSORTIA

STANDARDS DEVELOPMENT ORGANIZATION

SANCTION

Open Standardization

- SOAP v1.1
- WSDL v1.1
- WS-Security
- BPEL4WS
- UDDI v2,3
- UDDI.org
- SOAP v1.2
- WSDL v1.2
- ebXML(x4)
- WS-BPEL
- OASIS
- ISO 15000
- SGML
- ISO
- ebXML
- WSDL v1.1
- WS-Security
- OASIS
- WSDL v1.2
- UDDI v2,3
- OASIS
- SOAP v1.2
- W3C
- XML
- W3C
- ISO
- ebXML
- WSDL
- OASIS
- ISO
- ebXML
- WSDL
- OASIS
- ISO
- ebXML
- WSDL
- OASIS
- ISO
INTEROPERABILITY
What is interoperability?

- The harmonization of e-business standards
- Sometimes there is more than one way to fulfill a need:
Multiple Standards may co-exist

Different legacy systems or business requirements may require different methods

**SIMPLE**
- Lightweight code
- Limited Use Case
- Easier to build, deploy
- Loose Coupling

**COMPLEX**
- Heavyweight code, more functionality
- Highly scalable
- Bigger tools, higher cost
- More exclusive
Interoperability & Convergence

- Multiple filters make it happen

6. Open standards process
7. Proximity breeds comparison & convergence … and users drive convergence & optimization
8. Methods find their place in the marketplace
Functional Categories to Track Standards Work

- Orchestration & Management
- Data Content
- Security & Access
- Description
- Messaging
- Discovery

Common Message (XML)
Common Transport
Technical Standards

ORCHESTRATION & MANAGEMENT
- ASAP, BTP, ebXML-BP, WSBPEL, WSCAF
- DCML (x3), WSDM, WSRF, WS-Notification
- SPML, XACML, (DSML)

SECURITY & ACCESS
- DSS, PKI, SAML, WS-Security, XCBF

MESSAGING
- ebXML MSG, ebXML IIC, WS-Reliability, WS-RX

DATA CONTENT
- ABCM, (Conformance), ebSOA, FWSI, SOA Blueprints, SOA-RM
- ebXML CPPA, HumanML, UIML, WSRP
- ebXML, RegRep, UDDI
- Relax NG, XSLT Conformance

DESCRIPTION
- ebXML MSG, ebXML IIC, WS-Reliability, WS-RX

COMMON MESSAGE (XML)

COMMON TRANSPORT
Modularity: all the things that we use must work together
Multiple Standards in the Real World

HTML
IMAP / POP3
SMTP
ASCII / Unicode
URIs
TCP
IP

Typical e-mail
Real-world installations are composed of multiple standards

Example:
The OASIS Disease Control Interoperability Demo at XML 2003
Interoperability requires flexibility

We use many diverse methods and legacy systems. All of the methods we use must be:

- **MODULAR**
- **INTEROPERABLE**
- **MANAGEABLE**
- **STANDARDIZED**
OASIS STANDARDS
Technical trends in OASIS work

- Infrastructure work is maturing
- The action is moving up the "stack" to content and semantics
- Stronger emphasis on service orientation: interoperability and modularity
- End users are providing more of the content
OASIS: Infrastructure

Discovery
- ebXML Registry
- UDDI Spec

Messaging
- ebXML Messaging
- ebXML IIC
- WSRM TC (WS-Reliability)
- WS-Reliable Exchange

XML Methods
- RELAX-NG
- XSLT Conformance
OASIS: Security & Access Control

- Digital Signature Services
- PKI
- Provisioning Services (SPML)
- Security Services (SAML)
- Web Services Security
- XACML (Extensible Access Control ML)
- XCBF (Common Biometric Format)
- DSML [completed]
Service Orientation

What is SOA?
Central concept ... but:
- Registry centric?
- Web services centric?
- ebXML centric?
- EDI on steroids?
- CORBA on steroids?
- XML centric?
- OO centric?
- Model centric?
- Semantics centric?
Service Orientation and Data Harmonization

- Today's WS-this, EB-that and UM-the other may be tomorrow's something else
- But the functional data models will outlive any single implementation
- IF they are:
  - MODULAR
  - INTEROPERABLE
  - MANAGEABLE
  - STANDARDIZED
OASIS: SOA Domain

- BCM
- ebSOA
- Framework for WS Implementation
- SOA Adoption Blueprints
- SOA Reference Model
- Conformance [completed]
OASIS: Service and Data Description

- ebXML CPP/A
- HumanMarkup
- User Interface ML (UIML)
- WSRP (Portlets)
- DITA
- Entity Resolution
- Published Subjects (Topic Maps)
- XDI
- XRI
OASIS: Data Content

- AVDL
- CGMO WebCGM
- CIQ
- DocBook
- eGov
- ElectionML
- Emergency Mgmt (Common Alerting)
- EPS (Procurement)
- LX-Court Filing
- LX-eContracts
- LX-eNotary
- LX-Integ Justice
- IHC (Health)
- Materials
- OBIX
- OpenDocument
- Product Lifecycle (PLCS)
- PPS
- TaxXML
- Trans WS
- UBL
- WAS
- XLIFF
- [Auto Repair]
OASIS: Orchestration & Management

- ASAP
- Business Transactions
- CAM
- ebXML-BP
- SOA-RM
- WSBPEL
- WS-CAF
- DCML-Adoption
- DCML-Apps & Services
- DCML-Framework
- WSDM (Mgmt)
- WS-Notification
- WS-Resource Framework
WHY OASIS?
What is OASIS?

- OASIS = Organization for the Advancement of Structured Information Standards
- OASIS has been developing e-Standards since 1993
- OASIS is a member-led, international non-profit standards consortium concentrating on structured information and global e-business standards.
- Over 6000 members and 650 organizations
- Supports over 60 technical committees producing royalty-free and RAND standards in an open process.

“The largest standards group for electronic commerce on the Web”

The New York Times
OASIS Member Distribution

50%
Technology Providers
- Software vendors
- Industry organisations
- Individuals / small developers

15%
Government & Academic
- Governments
- Universities
- Research centres & related nonprofits

35%
Users and influencers
- User companies
- Vertical industry organisations
- Individuals / small consultancies
OASIS Membership Expanding Globally

- **North America**: 80% of Members in 2004, 100% in 2000
- **Asia-Pacific**: 20% of Members in 2004, 50% in 2000
- **Europe**: 0% of Members in 2004, 20% in 2000

% of Members
The OASIS technical agenda is set by our members; bottom-up approach

A Technical Committee (TC) is formed by a proposal of our members

Each Technical Committee sets its own scope, schedule, and deliverables

More than 60 Technical Committees in a variety of topic areas
  - E-business
  - Security
  - Web services
  - Public sector
OASIS Standards Process

- Specifications are created under an open, democratic, vendor-neutral process
  - Any interested parties may either participate or comment
  - No one organization can dictate the specification
  - Ensures that specifications meet everyone’s needs, not just those of the largest players

- All discussion is open to public inspection and comment

- Bi-level approval process
  - TC approves Committee Draft
  - OASIS members approve OASIS Standard

- Resulting work is representative broad range of industry, not just any one vendor’s view
Technical Work Process

1. Any three or more OASIS members propose creation of a Technical Committee (TC)
2. Existing technical work submitted to TC; or TC starts work at the beginning. TC conducts and completes technical work; open and publicly viewable
3. TC votes to approve work as an OASIS Committee Draft
4. TC conducts public review, and three or more OASIS members must implement the specification
5. TC revises and re-approves the specification
6. TC votes to submit the Committee Draft to OASIS membership for consideration
7. OASIS membership reviews, approves the Committee Draft as an OASIS Standard
Focused Content

- www.oasis-open.org
- www.xml.org
  - egovernment.xml.org
  - finance.xml.org
  - healthcare.xml.org
  - hr.xml.org
  - insurance.xml.org
  - localisation.xml.org
  - publishing.xml.org
  - security.xml.org
- xml.coverpages.org
- www.cgmopen.org
- www.dcml.org
- www.legalxml.org
- www.pkiforum.org
- www.uddi.org
Membership Benefits

- Influence
- Information
- Participation
- Education
- Co-ordination
- Credibility
- Visibility
- Openess
Software Vendor Benefits

- Form a committee to standardize current proprietary processes or schemas
- Influence the direction of an existing committee by submitting materials to the committee
- Influence the direction by articulating preferences
- Gain early feedback on new concepts and ideas
- Access to early drafts of new specifications
- Actively participate in interoperability tests
- Find partners and develop joint solutions
- Become part of a "bigger picture"; especially important for small – medium software vendors
- Promote your company with events and information channel sponsorship
- Meet and work with end user organisation as well as industry organisation
- Identify potential customers with a real and expressed needs
End-User Company Benefits

- Educate employees on trends and developments of technology
- Learn and adopt best practices
- Influence direction and priorities of standards development by providing business requirements
- Evaluate and observe vendors in their implementation and product directions
- Participate in interoperability demos by providing business scenarios
- See practical implementations from multiple vendors for given scenarios
Government Benefits

- Educate staff to learn about general e-Business frameworks
- Influence software vendors to develop solutions for your government
  - Increases number of competitive solutions
  - Lowers cost of implementations for your agencies
- Enable cross-government adoption
- Participate in inter-government standards activities
- Learn and adopt best practices
- Coordinate complimentary standards activities – minimise overlap
- Speed up development and adoption of new technologies and emerging standards
- Minimize risk in evaluation of new technology directions
- Monitor open standards and marketplace adoptions for recommendation in government structure
- Monitor and evaluate best practises for recommendations to industries and companies within your country or region
University and Research Center Benefits

- Monitor "state of the art" in technology and standards development
- Propose new ideas and receive feedback to those ideas
- Reduce the "time to market" from concept to wide spread adoption
- Create a broader market for adoption of development from your research projects
- Gain visibility for your project efforts
- Establish closer ties with more industry and government organisations
What should a user do?

- Bring your use cases to the standards table
- Be prepared to compromise
- If you can participate as an active contributor, do so
- If you don’t have the bandwidth to contribute actively, be a good observer
- Understand the ground rules
- Expect conformance
- Be a good citizen: share your experience
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