

Work with InterSystems.
Not separate systems.



Laying a Foundation for SOA

John Joseph
Director of Product Management

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I Thought SOA Was Dead



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SOA: In High Demand



In a recent survey by Gartner:

- 92% respondents in Europe have adopted SOA or plan to do so over the next 12 month
- 79% state the same for North America, and 57% in Asia
- 68% expect moderate to significant affect on their ability to support rapid change
- 57% expect moderate to significant affect to support business innovation
- 60% expect a ROI from SOA in less than 24 month

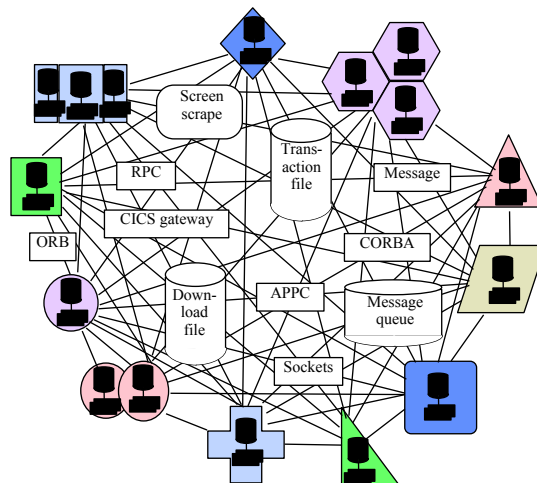
Source: Gartner: An SOA Sanity Check in Difficult Times March 2009



WHY?



Typical Application Spaghetti (Circa 1996)



Five Characteristics Of A SOA-based Application



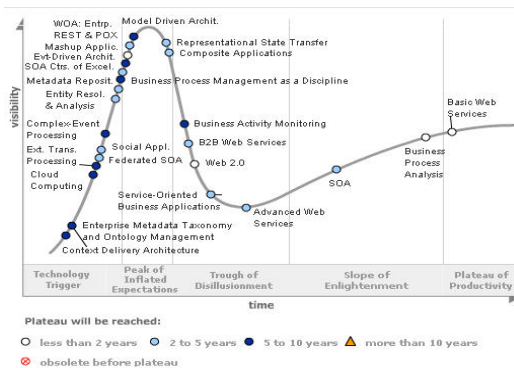
- **Modular:** The application consists of two or more elements.
- **Distributable:** The elements can run on separate computers.
- **Discoverable:** Metadata that explicitly describes the interface to a service provider implementation (element) is available.
- **Swappable:** The service provider implementation (the "how") is separable from the interface ("what to do"), so the implementation can be swapped out without disrupting consumers using the interface.
- **Shareable ("reusable"):** A service provider implementation can be invoked in succession by different service consumer elements (optionally from different application systems).

Source: Gartner, 2009

SOA Hype Cycle: A Reality Check



- SOA just emerging from Trough of Disillusionment
- Inflated expectations a primary cause of SOA disillusionment
- Clients call, continuously looking for SOA success metrics
- Very few build SOA business cases
- 2008 Gartner SOA survey results
 - 19% big positive impact on agility
 - 14% big positive impact on revenue
 - 5% big positive impact on revenue
 - 8% big positive impact on revenue
 - 48% say getting buy-in is a major obstacle to SOA
 - 35% say costs impede SOA starts



From "Hype Cycle for Application Architecture, 2008," G00159029, 3 July 2008

SOA Has Evolved And Improved



SOA 1996

- Used only by the leading edge
- Each development team designed its own metadata management and picked from a variety of protocols
- Not interoperable across disparate vendors' platforms
- On pre-Web middleware, such as CORBA, DCE RPC and message-oriented middleware (MOM)
- Mostly request/reply, RPC style
- Hard-coded, embedded flow management
- Built and managed by the IT department; mostly project-based

SOA 2009

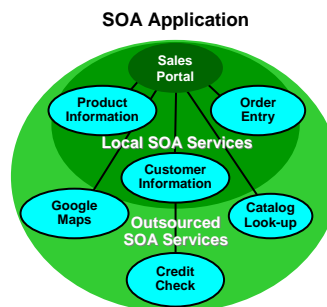
- More standards-based and interoperable, with limitations:
 - Web: XML, URIs
 - Web services: WSDL, SOAP
- More-diverse design patterns:
 - Still a lot of RPC style
 - Growing use of event processing
- More mediation, orchestration, transformation, intelligent routing
- More end-user involvement, Web 2.0, collaboration
- Some services now supported in the cloud (over the Web)



Applications



Applications built to change are more valuable than applications built to last.



InterSystems and SOA



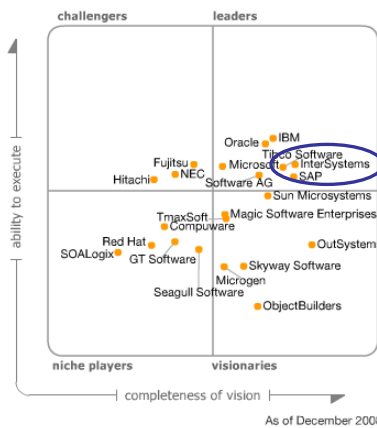
- Rapid increase in the number of SOA requirements in RFPs
- Customers are transforming their applications
 - Drives performance
 - Drives scalability
- Adoption for true Enterprise scenarios
- The plumbing for **The Cloud**
- InterSystems provides SOA capabilities in:
 - Ensemble: ESB, event processing, rules, BPM, etc.
 - Cache: Web services, SOAP



Ensemble Is Recognized As A Leading SOA Development Platform



InterSystems positioned in the Leaders Quadrant




“InterSystems has a leading position as an application infrastructure provider in the healthcare industry”




As of December 2008

Source: Magic Quadrant for Application Infrastructure for SOA Composite Application Projects, Dec. 2008.



WS-*



- Web Services
- Acronyms
- WS-Security (available in 2009.1)
 - XML Signature
 - XML Encryption
- What is to come?




Web Services: A Realization of SOA


- One important approach to realizing SOA
- A software system designed to support interoperable machine to machine interaction over a network
- Interface described in a machine-processable format (WSDL)
- Interaction with other systems using SOAP description
- Very well defined in WS-* specifications
- UDDI




Acronyms


- Two-factor authentication
 - e.g. something you know, something you have
- Security Token
 - Something you have
 - e.g. used for authentication
- Symmetric Encryption
 - AES
- Asymmetric Encryption (public/private key)
 - e.g. 3DES
 - part of PKI
- Certificates (e.g. X509)
 - Hashing




XML Signature


2009.1




- Requires Asymmetric Encryption
- Signed (encrypted) with the private key
- Proves who signed the message by decrypting with public key




XML Encryption 2009.1




- Encrypted with public key
- Decrypted with private key
 - Only the owner of the private key can read the content
- Alternative: SSL connections



WS-Policy




- Ensuring quality of service for WS-Security, WS-Reliable, etc.
- Framework consists of
 - WS-Policy
 - WS-PolicyAttachment
- WS-Policy
 - Describes the mechanism to apply multiple Policies to a common subject to determine compatibility
- WS-PolicyAttachment
 - Describes how to associate policies with a particular subject



Some More WS-*



- WS-Trust
 - Issue, Renew, Validate tokens using Web Services
- WS-ReliableMessaging
 - Provide Application Source and Destination a guarantee that a message that is sent will be delivered
- WS-Management
 - Management of servers, devices, applications and more
- WS-SAML Token Profile 
 - SAML based token

Web Services Over The Next 12 Months



- Increase Performance
 - Call-in mechanism
 - Lower level functions
- Increase ease of use
- Additional developer assistance
- Adding previously discusses WS-*
- .Net comparison

What About?



- XACML
 - eXtensible Access Control Markup Language
- REST
 - **RE**presentational **S**tate **T**ransfer
 - Uniquely identified resource
 - Exchange both data and metadata
 - CRUD - Create, Retrieve, Update and Delete



Summary




Applications built to last need to be built to change

Service Oriented Architecture allows change

Web Services are often the solution



Questions?



Thank you

Eυχαριστώ (Greek), Danke (German), Obrigado (Brazilian Portuguese), Agradecidos (Portuguese), תודה (Hebrew), QA TLHO' (Klingon), Go raibh maith agat (Gaelic), 謝謝 (Chinese), Спасибо (Russian), Tack (Swedish), Dankie (Afrikaans), अनुग्रह (Sanskrit), Obrigado (Brazilian Portuguese), ขอบคุณ. (Thai), Gracias (Spanish), Tak (Danish), Dank u (Dutch and Flemish), Děkuji (Czech), Grazie (Italian), Merci (French), ありがとう (Japanese), Kiito (Finnish), धन् द्वा (Hindi)

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