SOA, SONA and UC

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Session Objectives

At the end of the session, you should be able to:

- Define the meaning and some key benefits of SOA
- Explain Cisco’s SONA strategy, at a high level
- Describe how SOA are SONA are different
- Give an example of how Cisco UC leverages SOA and SONA
What is the SOA?
Why is this relevant to UC?
IT Evolution...Increasing Adaptability

- Mainframe
- Minicomputer
- Client / Server
- Web
- Service Oriented Architecture

Ability to Respond to Changing Conditions


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SOA: A Loose Coupling of Systems

Artificial Dependencies

Real Dependencies
OASIS (Organization for the Advancement of Structured Information Standards) **Definition**: Service Oriented Architecture (SOA) is a paradigm for organizing and utilizing distributed capabilities that may be under the control of different ownership domains. It provides a uniform means to offer, discover, interact with and use capabilities to produce desired effects consistent with measurable preconditions and expectations.
SOA – Foundation

- **Business Architecture:**
  Business strategy, objectives, priorities, and processes

- **Data and Information Architecture:**
  Logical and physical modeling of the data as well as data manipulation and data quality
  Information modeling for canonical models described by XML schemas

- **Infrastructure Architecture:**
  Engine that enables SOA.
  All aspects including network infrastructure, compute, storage, application infrastructure, security, monitoring and middleware.

Source: SOA Practitioners Guide
SOA – Reference Architecture

Source: SOA Practitioners Guide
SOA Architecture – Key Components

- Business Process Management/ BPEL (Business Process Execution Language) such as WebMethods, Oracle/Fusion and BEA/Fugeo.
- Service Creation – Data Service Platforms and Application Adapters such as BEA/AquaLogic & Weblogic.
- Repository and Service Registry such as Systinet and Novell/Nsure.
- SOA management tool such as HP-Openview SOA Manager and Amberpoint.
- Enterprise Service Bus such as IBM/WebSphere and Tibco/BusinessWorks.
- Mediation Gateway (Message Mediation, Message Routing, Message Security,...) such as Reactivity
State of SOA Deployment – Fortune 1000

- Not considering: 26%
- Currently using: 21%
- Plan to implement or evaluate in next 24 months: 53%

“By 2008, SOA will be a prevailing software engineering practice, ending the 40-year domination of monolithic software architecture (0.7 probability).”

Gartner, 2005

Source: AMR Research, Gartner (2005)
SOA Investments will Dominate IT Spending

Annual Technology and Services Market Sizing ($B)

<table>
<thead>
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<th>Call Center (Voice)</th>
<th>2005</th>
<th>2009</th>
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Four Year CAGR ('05 – ’09)

- Call Center: 7%
- VoIP: 28%
- SOA: 92%

Source: Gartner, Datamonitor, Lehman Brothers (2005), Synergy
What is the SOA All About?
Enterprise applications required repetitive coding.
What is the SOA All About?
Messaging infrastructure simplified data access.
What is the SOA All About?
Contact center bore little benefit from these investments.
What is the SOA All About?
Business rules are repeated across applications, too.
What is the SOA All About?
SOA allows for reuse of data and business rules.
What is the SOA All About?

Contact center still bears little benefit, unfortunately.

Unified Application Infrastructure
(e.g., WebLogic, WebSphere, Fusion)

Messaging Infrastructure
(e.g., Tibco, MQ Series, XML Data Feeds)

Data

Business Rules

Data Access
Contact Center ⇒ Enterprise Application
Contact center applications can be tied with the SOA.

Unified Application Infrastructure
(e.g., WebLogic, WebSphere, Fusion)

Messaging Infrastructure
(e.g., Tibco, MQ Series, XML Data Feeds)

Data
Data
Data
Data
Recap

SOA in the Enterprise

Why are enterprises embracing the services oriented architecture?
SONA

- What is Cisco’s SONA?
- How is this relevant to UC?
- What’s the difference between SONA and SOA?
What is SONA

- What is SONA (Services Oriented Network Arch):
  Cisco’s Architecture for Enterprise Market
- The current messaging of SONA is a bundle of few things:
  Network is pervasive
  Infrastructure Services
  Validated Designs
  Vertical Industrial Solutions and PIN.
  Services Led business and Alliances.

**SOA Relevancy as of now -**

- Network as an enabler and provide hooks for applications.
- Unified Communications – Service Creation solutions (Metreos, Audium and IBM UC Client platform)
- Services Oriented Data Center (SODC): Products such as ACE XML gateway/Reactivity and AON.
- Business Solution Offerings such as SAP GRC
Service Oriented Network Architecture

Business Applications

Collaboration Applications

Traditional Architecture

Service Oriented Architecture

Application Enhancing Services
- Security Services
- Mobility Services
- Storage Services

Collaboration Enhancing Services
- Voice Services
- Compute Services
- Identity Services

Infrastructure Enhancing Services

Network Virtualization Services

Places in the Network

- Server
- Storage
- Devices
How do we get there? Architectural Approach to Closing Gaps

Introducing...
Cisco’s Service-Oriented Network Architecture (SONA)

Application Integration Gap
Need:
• Application integration
• Human interaction
• Productivity and innovation

Solution:
• Application fluency in the network
• Real-time interaction and collaboration

Resource Allocation Gap
Need:
• Flexible, efficient and secure usage of IT resources

Solution:
• Infrastructure Virtualization
• Self-Defending Networks
• Integrated Manageability
Network as the Platform: Service Oriented Network Architecture (SONA)

<table>
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<tr>
<th>Networked Infrastructure Layer</th>
<th>Campus</th>
<th>Branch</th>
<th>Data Center</th>
<th>MAN/WAN</th>
<th>Teleworker</th>
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<th>Application Services</th>
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<th>Traditional Architecture / Services Oriented Architecture</th>
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<tr>
<th>Application Layer</th>
<th>PLM</th>
<th>CRM</th>
<th>ERP</th>
<th>Telephony</th>
<th>Unified Messaging</th>
<th>Meeting Place</th>
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<td>HCM</td>
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<td>SCM</td>
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<td>Customer Contact</td>
<td>Video</td>
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Network as the Platform:
Service Oriented Network Architecture (SONA)

Network Virtualization

- Campus
- Branch
- Data Center
- MAN/WAN
- Teleworker
- Server
- Storage
- Devices
Where Does SOA Fit?

- Common application infrastructure services are supported in the network
- The network facilitates communications between web services
- SONA makes SOA more secure, reliable, and optimized
Recap
SONA Definition

True or False:
SONA is Cisco’s answer to the SOA.
Network as an enabler of SOA

- Pervasive
- Highly available and reliable
- Security
- Convergence
- Highly Flexible
- Virtualization of resources
- Network Performance - Low latency and congestion
- Network Optimization
  - Transport Layer Optimization
  - Application Optimization
  - Compute and Data Center Optimization
  - Route Optimization
  - QoS
- Network Automation
  - APIs for Applications interworking
  - Service Creation environments
Service-Oriented Infrastructure - Network as an Enabler for SOA

Figure 1. SOA and SOI—Complementary Strategies
## Network as the Platform: Service Oriented Network Architecture (SONA)

### APPLICATION LAYER
- PLM
- CRM
- ERP
- HCM
- Procurement
- SCM

### NETWORKED INFRASTRUCTURE LAYER
- Campus
- Branch
- Data Center
- MAN/WAN
- Teleworker
- Server
- Storage
- Devices

### INTERACTIVE SERVICES LAYER
- Security Services
- Mobility Services
- Storage Services

### INFRASTRUCTURE SERVICES
- Voice Services
- Location Services
- Identity Services

### ADAPTIVE MGMT SERVICES

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**Traditional Architecture / Services Oriented Architecture**

**Telephony**
- Unified Messaging
- Meeting Place

**Customer Contact**
- Video
- IM

**Customer Contact**
- Video
- IM

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**Network as the Platform:**
- Service Oriented Network Architecture (SONA)
Network as the Platform:
SOA, SONA and UC

Cisco Unified Customer Voice Portal

- Unified contact center workflow tied to SOA for consistent customer experience
- Leverages APPLICATION LAYER for personalized interactions
- Broad Eclipse developer community speeds innovation
- Consolidates management and cross-channel analytics

Customer Contact

Voice Services

- Session Services
- Policy Services
- Presence Services
- Media Services
- Speech Services
- Queuing Services
Recap

Tying Together SOA, SONA and UC

How does CVP, as an example, leverage SOA, SONA and UC?
Network as the Platform:
SOA, SONA and UC

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