NuWave TECHNOLOGIES

SOAP AM

SOA Modernization: Best Practices

VNUG

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Be ready for change…

Business Drivers

- Standardize, optimize and automate the current IT infrastructure
- Work with what's available to save money and increase efficiency
- Optimize costs - get the most ROI for each investment
- Increase operational efficiency
- Be more agile and responsive to changing market demands

Five Drivers for Change

1) Business Requirements Conflict With Restrictive Architectures
2) Need to Modernize Systems
3) Adjustment to New Technology
4) Need For Increased Agility
5) Lower Total Cost of Ownership

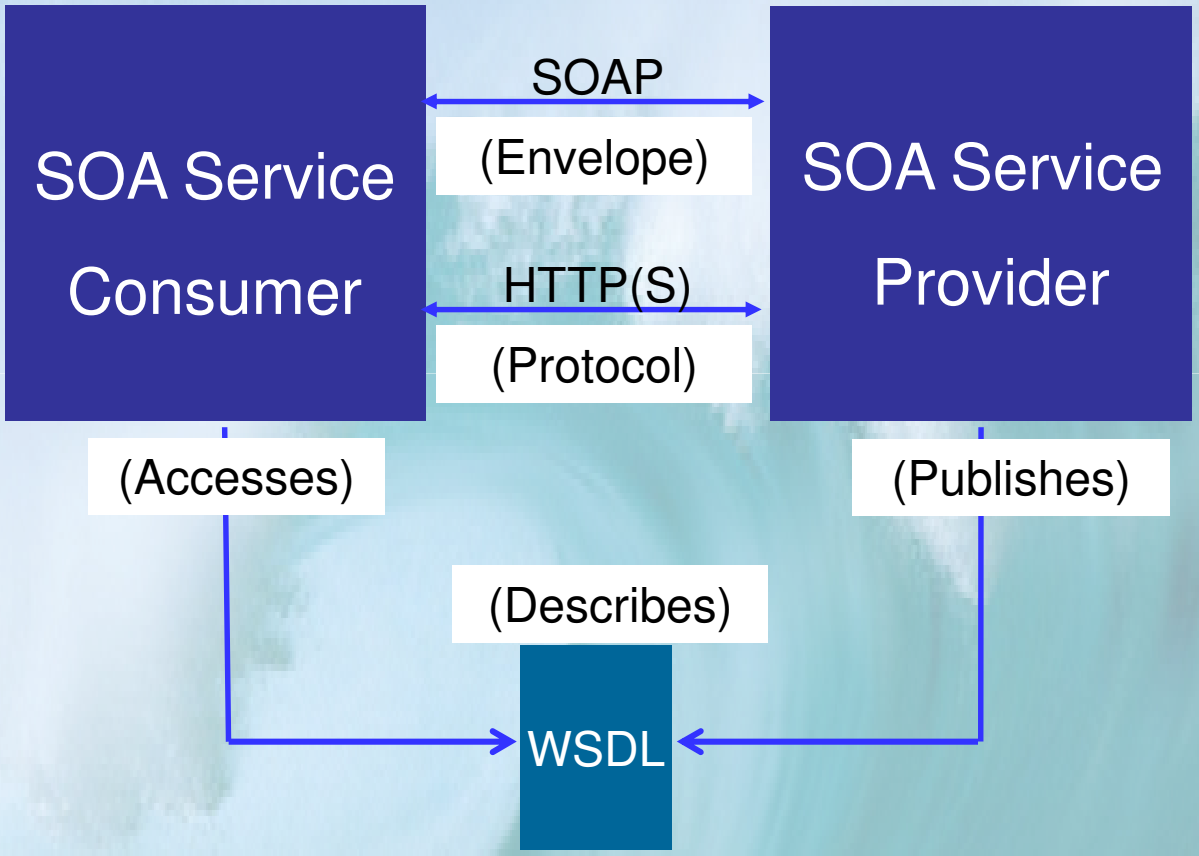
Overview

- Understand Best Practices
- Use Evolutionary NOT Revolutionary Approach
- Decouple Rigid Client-Server Functions
- Adopt Standards-based Tools
- Consider Cultural Impact
- Let Business Drive Priorities

SOA Features

- **Service**
  - Defined by a standard service description
  - Encapsulates implementation
  - Available on the network and on many platforms
  - Accessed via industry standard protocols
- **Orientation**
  - Collection of Business Functions
  - Enterprise wide
- **Architecture**
  - SOA analysis is at higher level of abstraction than OOA
  - No silo applications with duplicated functionality
  - Loosely defined "Architecture"

Basic SOA Building Blocks



SOA Benefits

- Business Agility
  - Support user requirement changes more readily
- Cost Reduction
  - No need to create unique solutions every time a new business process arises
  - Reuse production-proven solutions
  - Improve operational efficiency
- Leverage existing systems and applications
  - New/modified business process can be achieved by reorganizing existing server functionality
  - Business process automation achieved by assembling self-contained services (BPM)

Challenges of SOA

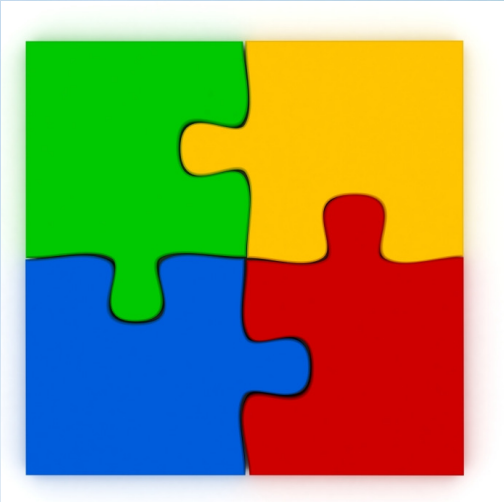
- Implementation Hurdles
  - Naming conventions for:
    - Definitions
    - Identification
  - Latency
- Corporate Culture
  - Ownership
  - Cooperation
  - Budget

Executive leadership must be clear & evident

Planning an SOA Initiative

- Target solutions that provide business value
  - Let pain drive SOA investments
- Avoid analysis-paralysis
  - Start small and build over time
  - Show reward and benefits quickly/cheaply
  - Keep integration simple: Synchronous, direct, request-response
- Get the organizational politics right
  - Use short workshops to involve stakeholders
- Build services before buying SOA infrastructure
  - Start by SOA-enabling an existing application
  - Focus on QoS issues (scale, performance, availability)
  - Don’t fret too much about service reuse

SOA Features



- A collection of Services
- Use of services is decoupled from specific implementation
- Allows business processes to be quickly composed from services
- Easily integrates application on disparate platforms
- Re-use existing code

SOA = Service Oriented *Approach*
SOA is NOT a product !

Determine Your Best SOA Strategy

- Understand your organization's business drivers
- Plan for your NonStop to be an **active participant** in your SOA strategy
- Be positioned for changing business requirements and new market conditions
- Understand the cost and risk of "doing nothing"
- Is open source right for you?

Which Modernization Approach is Best?

- Re-hosting legacy apps.
- Wrapping legacy applications with SOA interfaces
- Automated migration
- ✓ Re-engineer legacy applications to service-based components
- ✓ Re-architect applications based on SOA principles

"Do nothing" is not an option!

Decouple Client & Server

- Capitalize on existing NonStop technology and investment
- Maximize ROI through complimentary infrastructure products with low costs and minimal development effort
- Use packaged solutions to respond to market changes quickly
- Low risk, managed migration

Benefits: SOA Enabling NonStop Applications

- Improve value of NonStop Server without requiring its retirement
- Web services provide the flexibility for immediate reuse of existing functions
- Provides new business value and agility through non-invasive integration of new technology
- Lower IT costs

Transforming the Role of NonStop with SOA

1. Decouple Client-Server Code
   - ✓ ***Tools are available to SOA enable NonStop applications***
2. Application Migration
   - ✓ ***Service Oriented Architecture can simplify the migration process***
3. Application Rejuvenation
   - ✓ ***Extend the value of your investment in NonStop***

SOA on HP NonStop

- On Guardian:
  - SOAP/AM Server
    - Exposes Pathway servers as SOA services
  - SOAP/AM Web Service Client
    - Allows Pathway servers to consume SOA services
- On OSS:
  - HP NonStop SOAP
  - Open source GSoap
  - Open source Apache Axis2 Software
    - Runs under NonStop Servlets for JSP
- BEA WebLogic (ESB) & AquaLogic Server
  - Complete J2EE and SOA application server infrastructure
- Mule (open source ESB)

What is SOAP/AM® ?

- **SOAP/AM Server**
  - Enables server applications on your NonStop system to act as standard Web services
- **SOAP/AM Web Service Client**
  - Enables applications on your NonStop system to access Web services on any platform

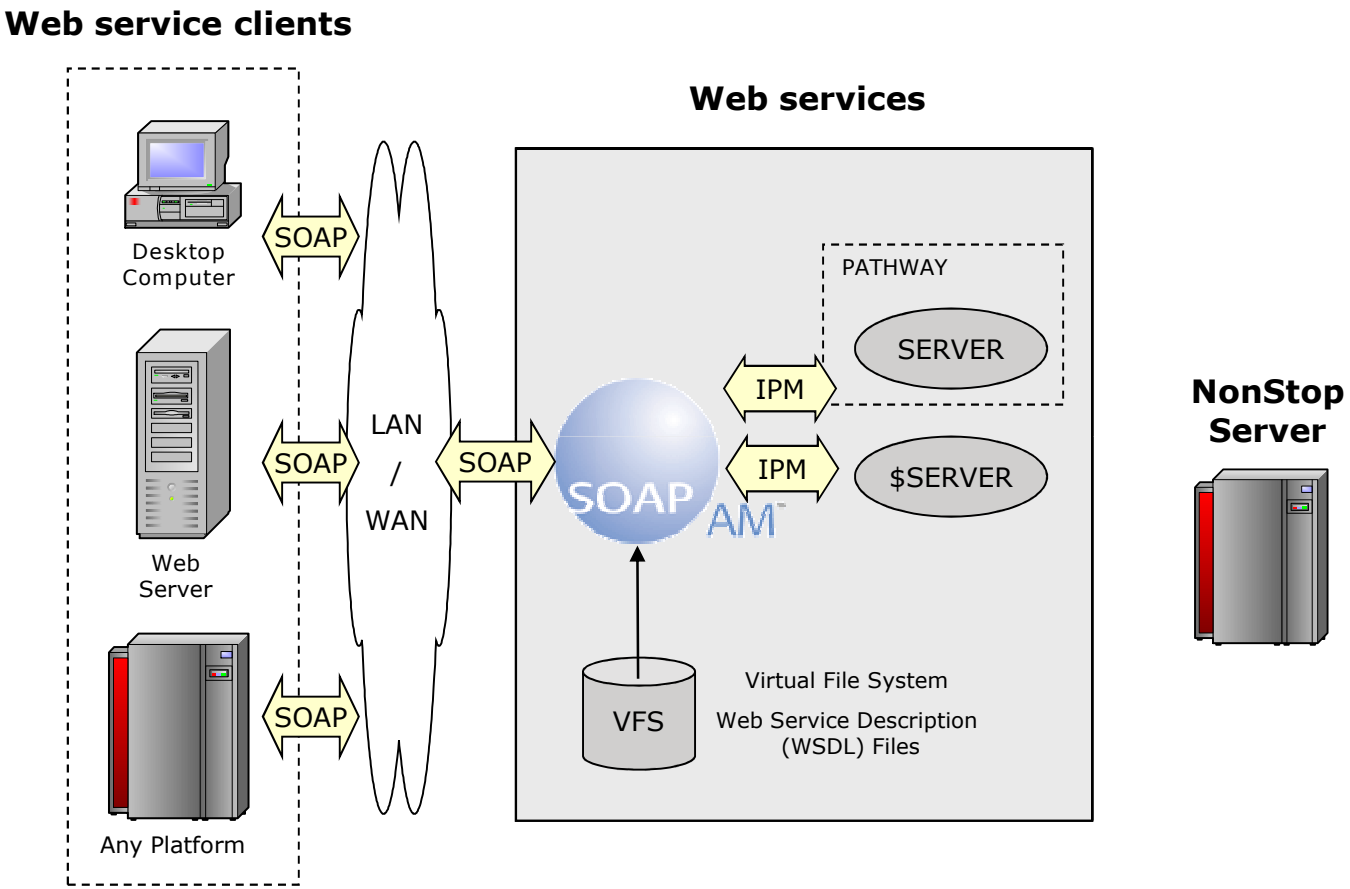
SOAP/AM® Features

- Hides protocol, encoding and encryption complexities
- Leverages native NSK inter-process message system
- Standards-based
  - SOAP 1.1, XML, SSL/TLS, HTTP, TCP/IP
- Built on NSK fundamentals
  - $RECEIVE
  - WRITEREAD, 'PATHSEND'

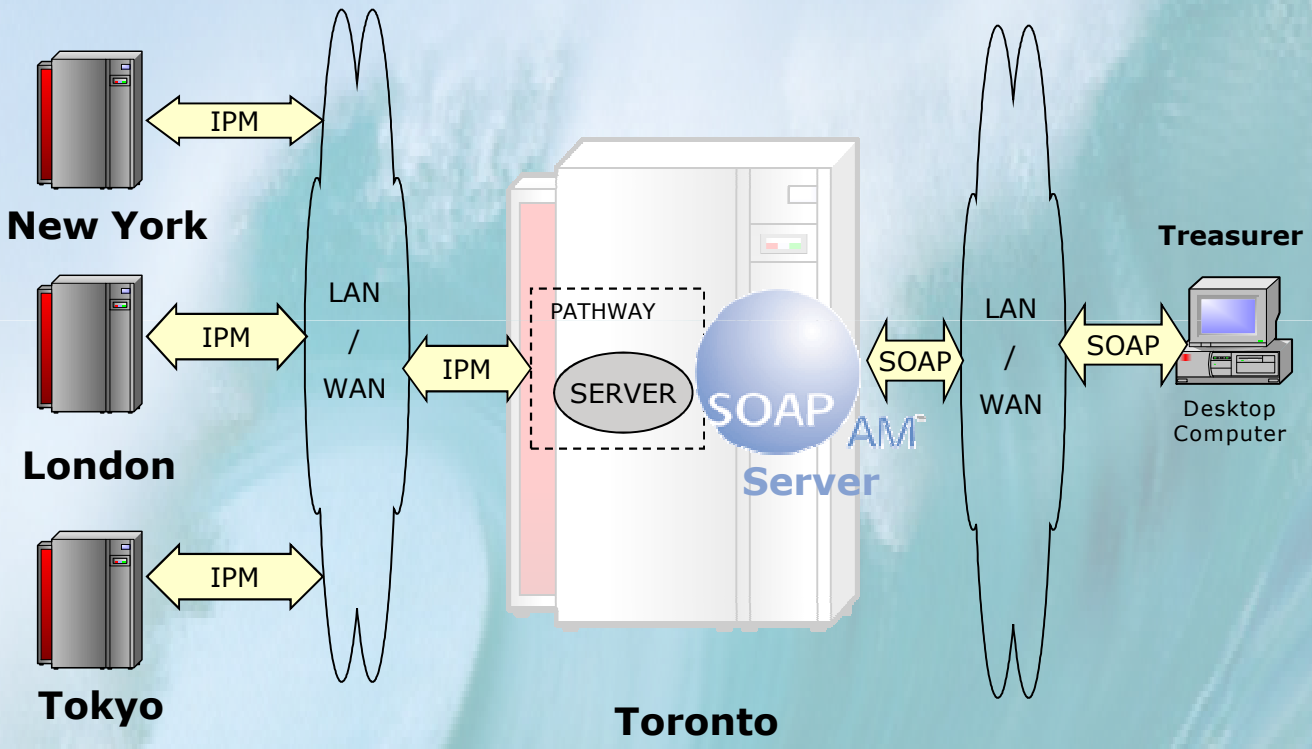
SOAP/AM Server

- Exposes your server application as a Web service
- Works with existing servers, no code changes required
- Secure - supports SSL and Server Certificates
- Scalable
  - Can be run in multiple CPUs
  - Supports Parallel TCP/IP (IPv6)
- Resilient – runs as a NonStop process pair

SOAP/AM Server

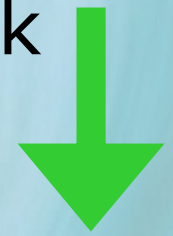


Global Financial Position



Application Migration

- Abstract interface rules
- Facilitate introduction of new technologies
- Reduce costs of ongoing maintenance
- Transition to replacement system in a seamless, well managed process
- Reduce project risk



Application Rejuvenation

- Realizing even more value out of legacy solutions than migration or SOA enabling can provide
- Employ non-invasive approach to extract new value out of older systems without requiring risky software changes
- Reuse server code for purposes not originally intended by their authors

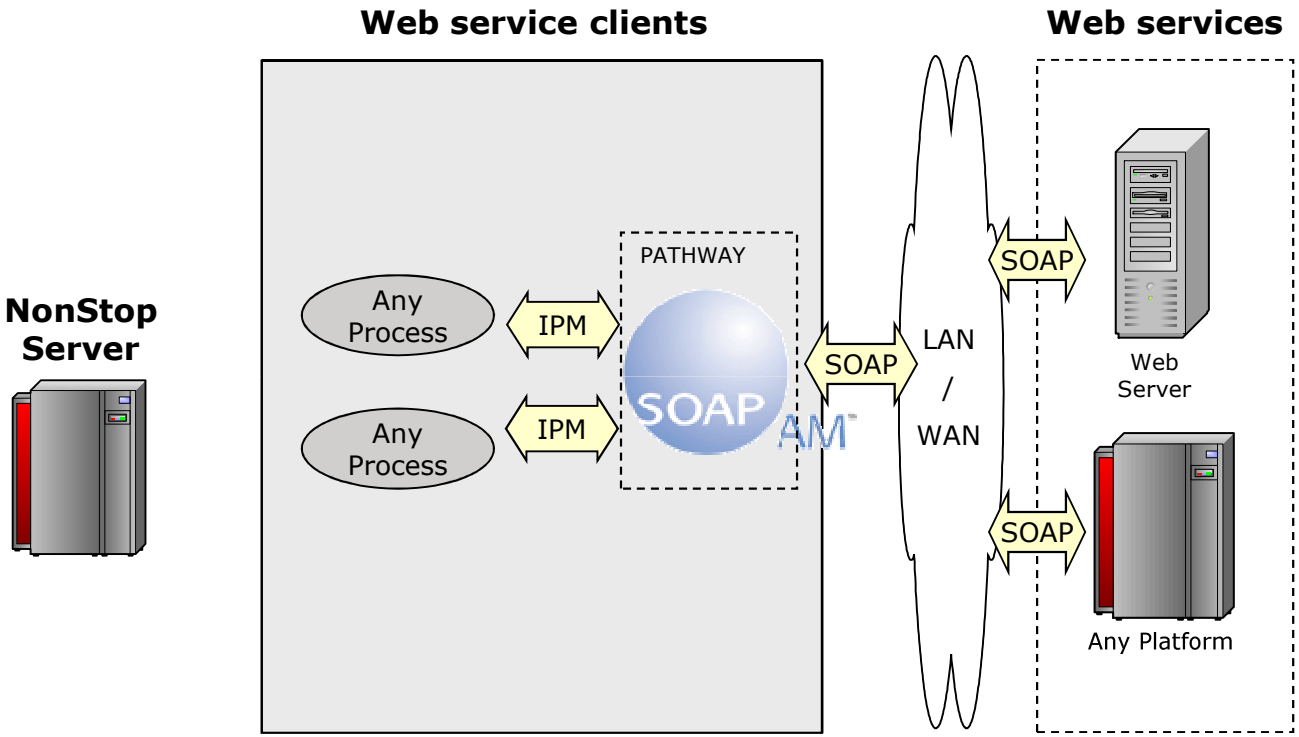
Beyond Web Enabling

- Combine existing functions to create new business solutions
- Integrate Web services into existing applications
- Increase your service offerings
- Improve efficiency
- Automate business processes

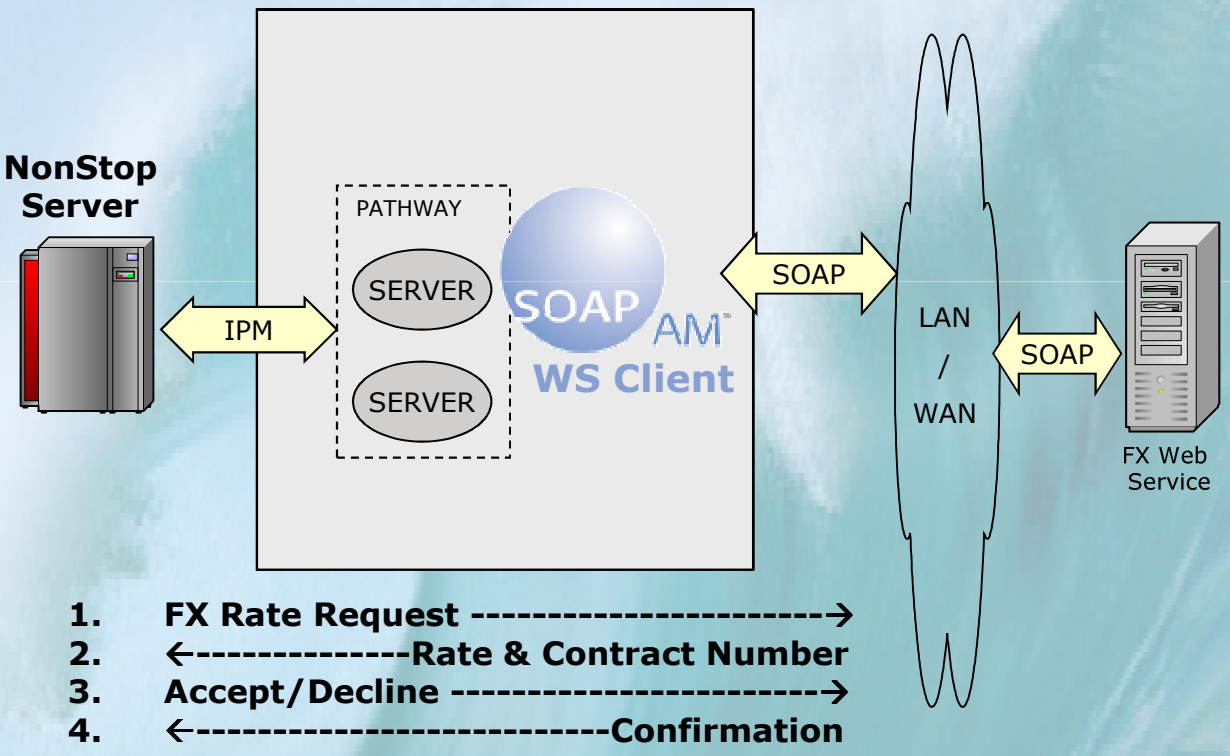
SOAP/AM
Web Service Client

- Access Web services on any platform from your NSK application
- Hides the complexity of TCP/IP, HTTP, XML, SOAP and SSL/TLS protocols

SOAP/AM Web Service Client



Web Service Based Foreign Exchange



1. **FX Rate Request ---------->**
2. **<----------Rate & Contract Number**
3. **Accept/Decline ---------->**
4. **<----------Confirmation**

Using SOAP/AM to Decouple Pathway Servers from Client UI

- Support the SOAP standard over HTTP/S protocol
  - Includes SSL
- Provide a design-time Wizard to easily expose Pathway servers as Web services
  - Automatically generates WSDL from DDL
- The SOAP/AM Admin. GUI makes this simple
  - No coding is required
  - No change to the existing Pathway server is required
- SOAP/AM products run as persistent processes for efficiency, scalability and availability
- SOAP/AM utilizes TMF for transaction data integrity

Steps to SOA Enable Existing Pathway Servers

1) Point the Wizard to the DDL Dictionary and select [click] the desired requests and replies
2) Identify the Pathway serverclass(es) Service(s)
3) Generate the WSDL for the service
4) Test the SOA-enabled Pathway service
5) Create the service consumer WS-Client
6) Invoke the Pathway service from the service consumer (client)

Flexible

- Interoperable with Web service implementations on a wide variety of platforms
- Programming language independent
- Works with existing server applications

Secure

- SSL and TLS for secure https connections included at no extra cost
- Supports password protection and digest authentication
- Configurable permissions to execute/design/administer

Recipe for Success*

1. Strong Executive Level Sponsorship and SOA Evangelist
2. Educate the Business of the Value of SOA
3. Establish a Center of Excellence (CoE)
4. Start With Well-Defined Business Processes and Scale Up
5. Define Completeness of Work within Services
6. Quality Assurance Is Key
7. ROI Is Difficult to Achieve Initially and Is Realized Over Time
8. Deliver Substantial Business Value

* Eight Winning Characteristics of Successful SOA Implementations (compiled by CIO.com based on the winners of the SOA Consortium)

Conclusion

- Modernization is key
- Implement standards-compliant solutions
- Decouple services and clients
- Gain experience with POC
- Define success criteria
- Involve stakeholders
- Let us help you succeed!

Questions ?

Thank You !

For More Information:

- www.nuwave-tech.com/soapam
  - Free Trial
  - Recorded Webinars
  - Online Tools
  - Case Studies
- Info@nuwave-tech.com