

Government's Adoption of SOA and SOA Examples

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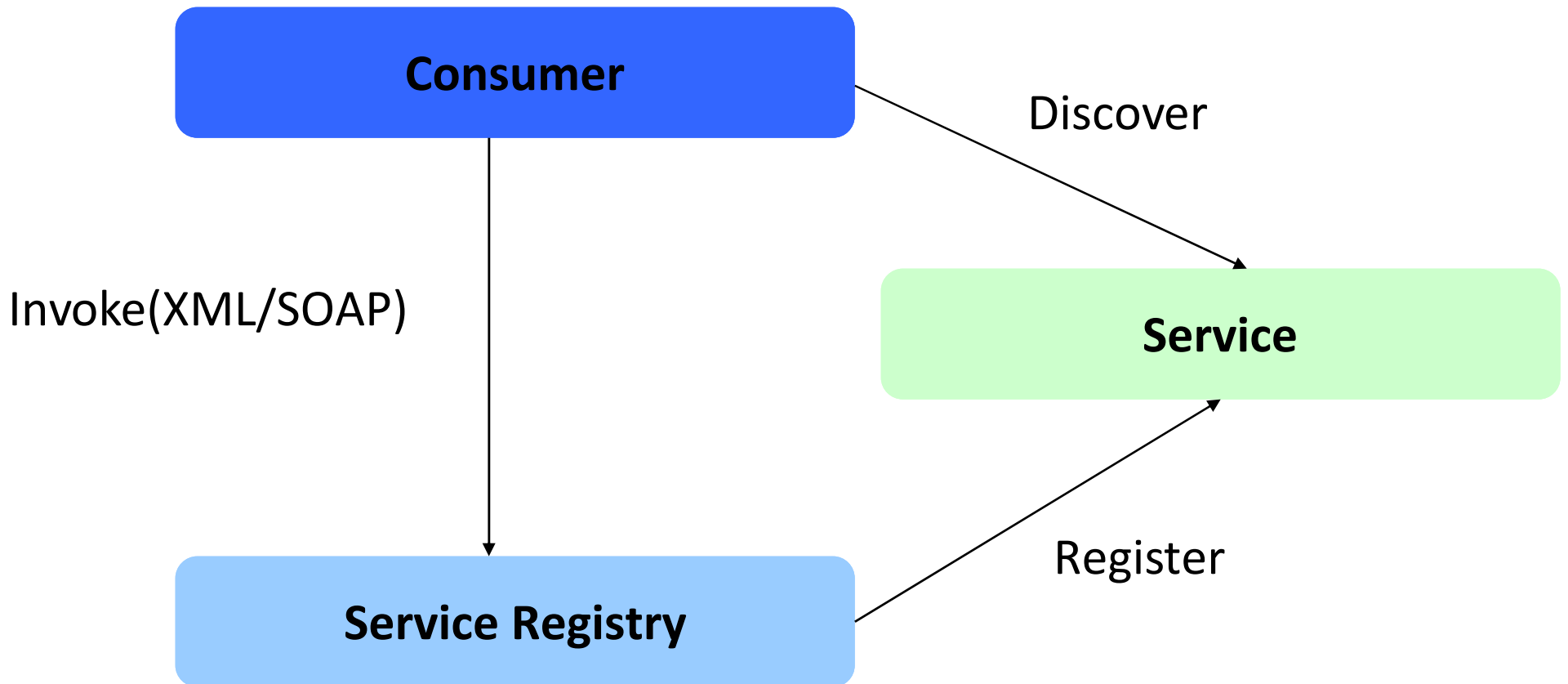
Service Oriented Architecture Adoption

- Enterprise SOA is a business centric approach for a flexible, open IT architecture and for developing enterprise level service based solutions
- Enterprise SOA results in higher efficiency and reduced cost due to a higher degree of modularity and decoupling
- SOA adoption promotes reuse, agility, adaptability, manageability, increases productivity

Service Oriented Architecture

- SOA is the **FOUNDATION** for effective facilitation between producers and consumers
- SOA utilizes open standards to develop encapsulated building blocks and to standardize the interactions between the services
- Services are loosely coupled and modular elements that promote reuse, interoperability and easier integration

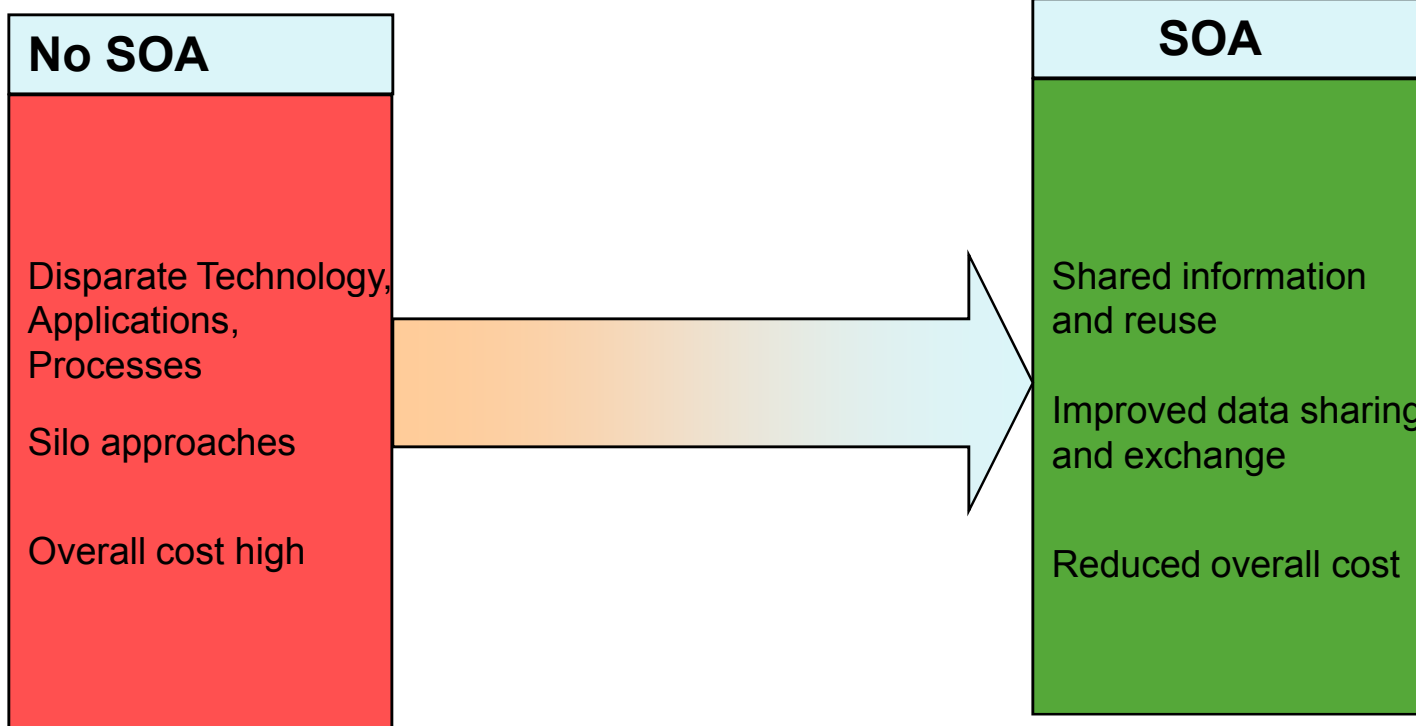
Service Oriented Architecture



SOA Adoption Benefits

- The adoption of SOA in Government and the development of an Enterprise Architecture Strategy, Vision, Roadmap and effective alignment of business processes with services facilitates the following:
 - Cost savings
 - Increased flexibility for redesign
 - Reuse of business functionality
 - Reduction of complexity, technology independence
 - More efficient development

Government's SOA Adoption



SOA Adoption Strategy

- Develop executive support for SOA initiatives
- Develop a phased approach for SOA adoption
- Establish working groups for planning and implementation
- Communicate the benefits and successes throughout the organization
- Demonstrate the value of SOA initiatives

SOA Adoption

- Enterprise Architecture and SOA must be aligned to the multiyear strategic plans
- Synchronize the 50,000 foot to the 1000 foot
- Conduct “Come to SOA” meetings
- Focus on business process alignment with services
- Effectively Model, Develop, Deploy, Monitor, and Update

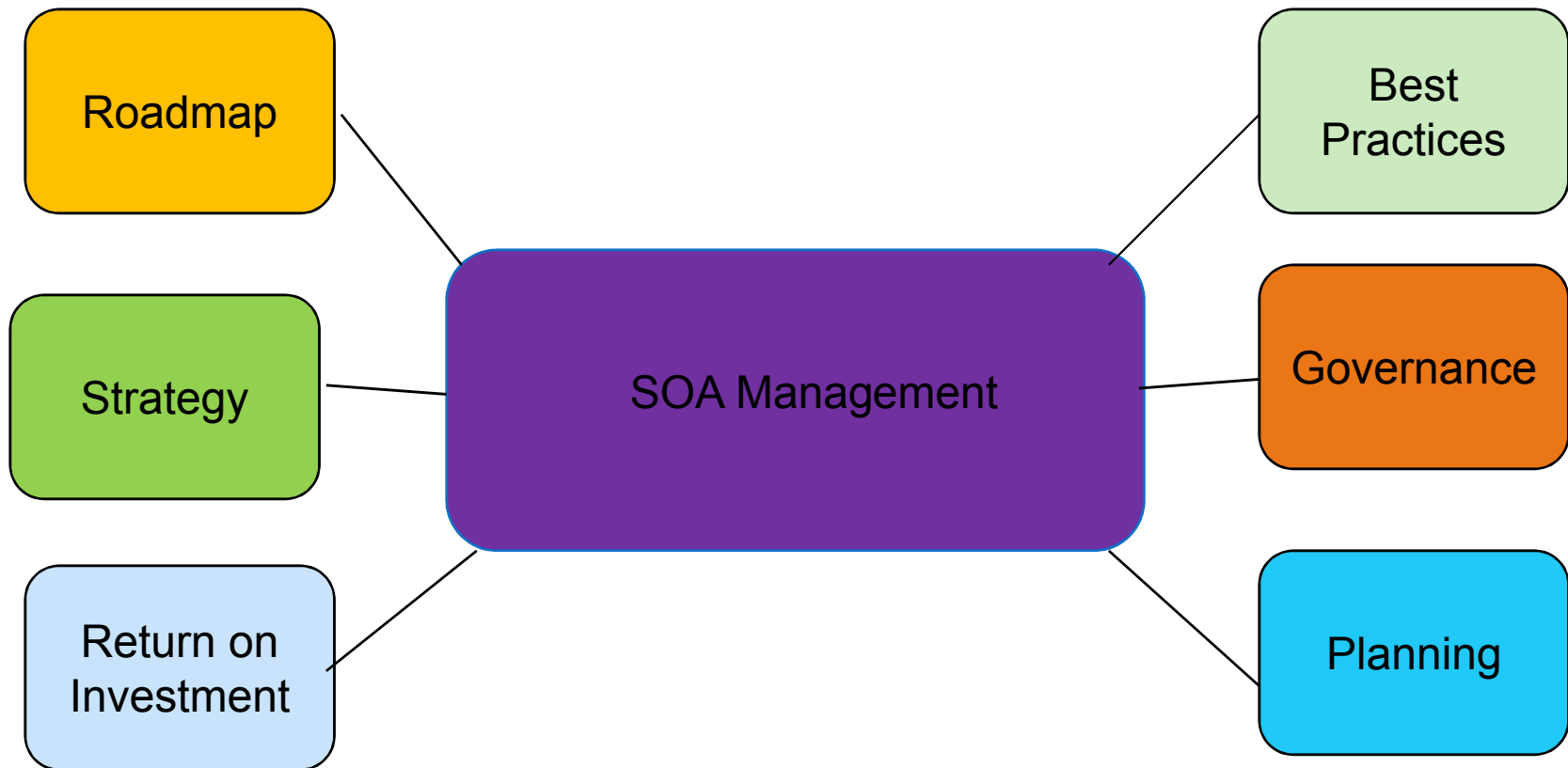
The 10 minute SOA Presentation

- The Business Case for SOA
 - Cost savings
 - Cost avoidance
 - Business Benefits
- Alignment of the SOA Strategy with the Business strategy
- SOA Strategy, Vision and the short term RESULTS

Government SOA Adoption

- SOA works well in large organizations to promote:
 - Better integration and componentization
 - Reduce duplication and promote reuse
 - Standards compliance
- The challenges of SOA adoption are (approx 25% failure rate):
 - Ownership battles
 - Lack of knowledge, skills, technology, resources
 - Quantified Return on Investment

SOA Management

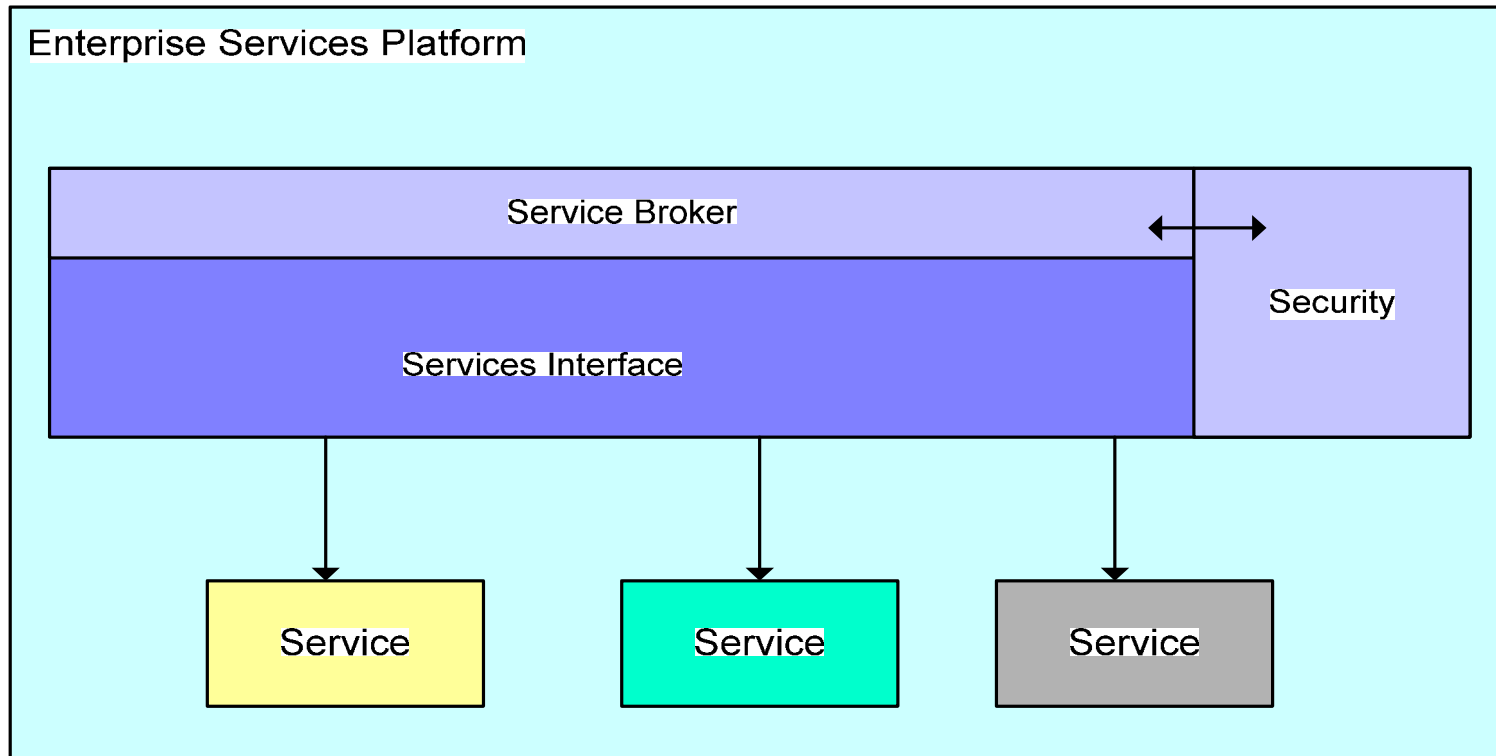


SOA Governance

The following aspects need to be addressed:

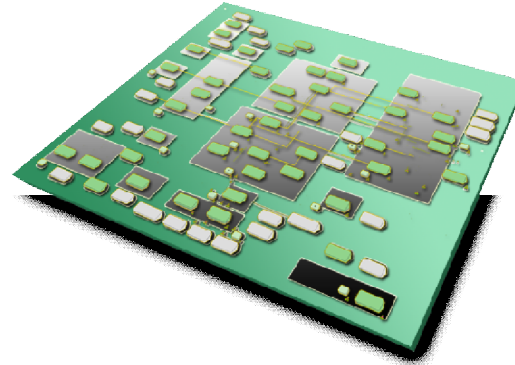
- Change Management
- Configuration and release management
- Contract Management
- Service Monitoring
- Incident Management
- Best practices for service development

Enterprise SOA Platform



Enterprise Service Platform

- The functions of a Enterprise Service platform are to implement:
 - Service Control
 - Service Infrastructure
 - Service Composition
 - Service Delivery
 - Service Access
 - Service Measurement



Enterprise SOA Strategy

As part of the Enterprise SOA strategy:

- Establish SOA Governance, Methodology for SOA services and related practices
- Collaborate extensively with Business Owners, Business Analysts, SOA Architects
- Develop candidate architectures and reference models
- Develop services in a step by step manner, develop Service Level Agreements and measure the return

Enterprise SOA Strategy

- Establish a Vision that aligns Business with IT
- Define the SOA Roadmap and Plans
- Define the organization structure
- Conduct detailed analysis of the business domain, functions, processes, interactions, events
- Define the SOA Architecture and Technology
- Develop services, aggregation of services
- Measure results as a result of SOA

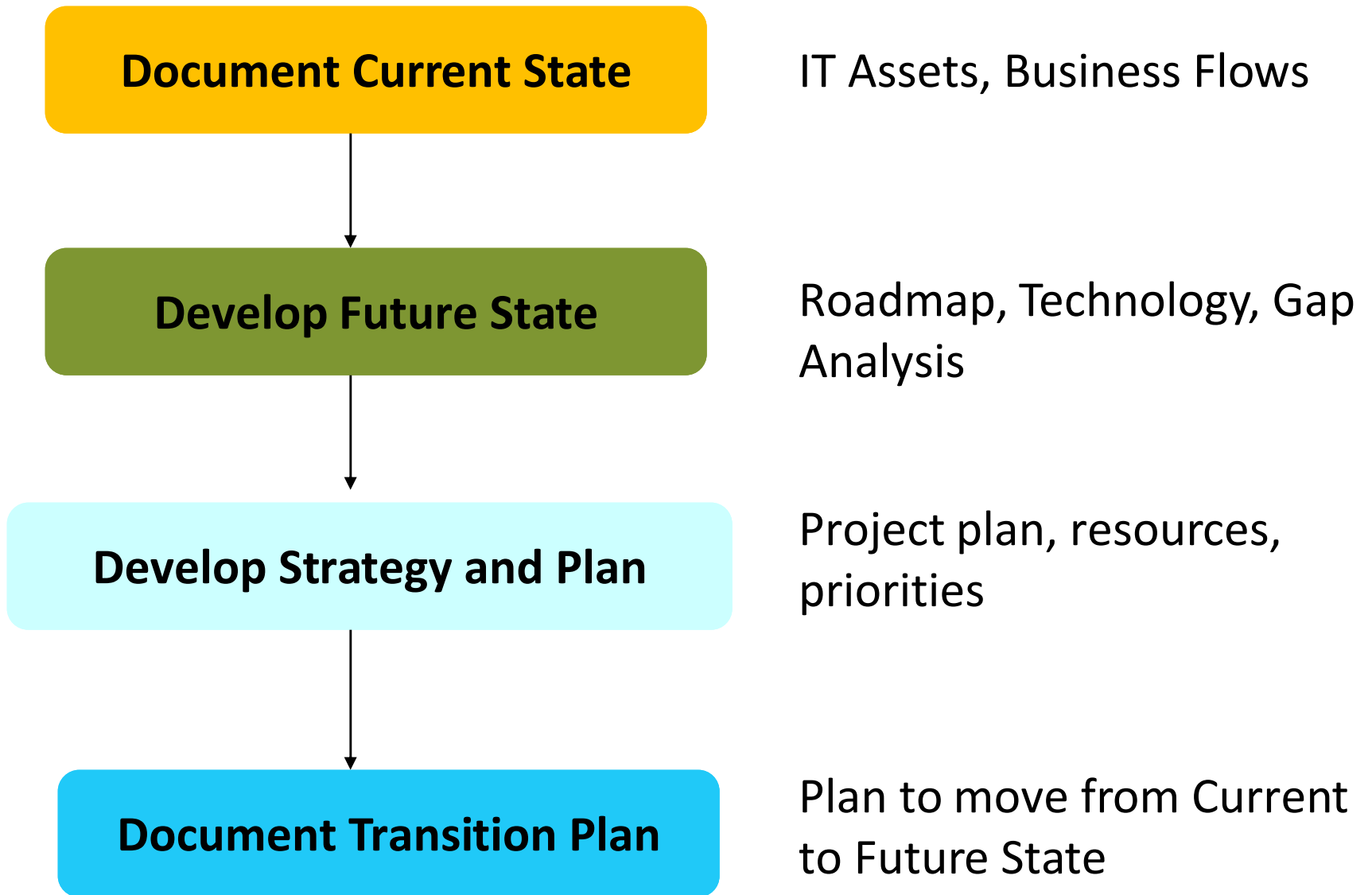
Enterprise SOA Planning

- Review current business processes, architecture
- Define future state and identify gaps
- Identify and classify services
- Develop Governance model, Benefits, ROI
- Develop detailed plan, task and cost estimates
- Develop Transition plan and communicate to the stakeholders

Let's do SOA

- SOA is becoming part of the mainstream efforts in the Government
- Identify the Gaps between the As-Is and To-Be Architecture
- Develop the plan based on cost estimates, risks, analysis
- Evaluate the complexity and risk involved
- Propose services and service interactions at a high level

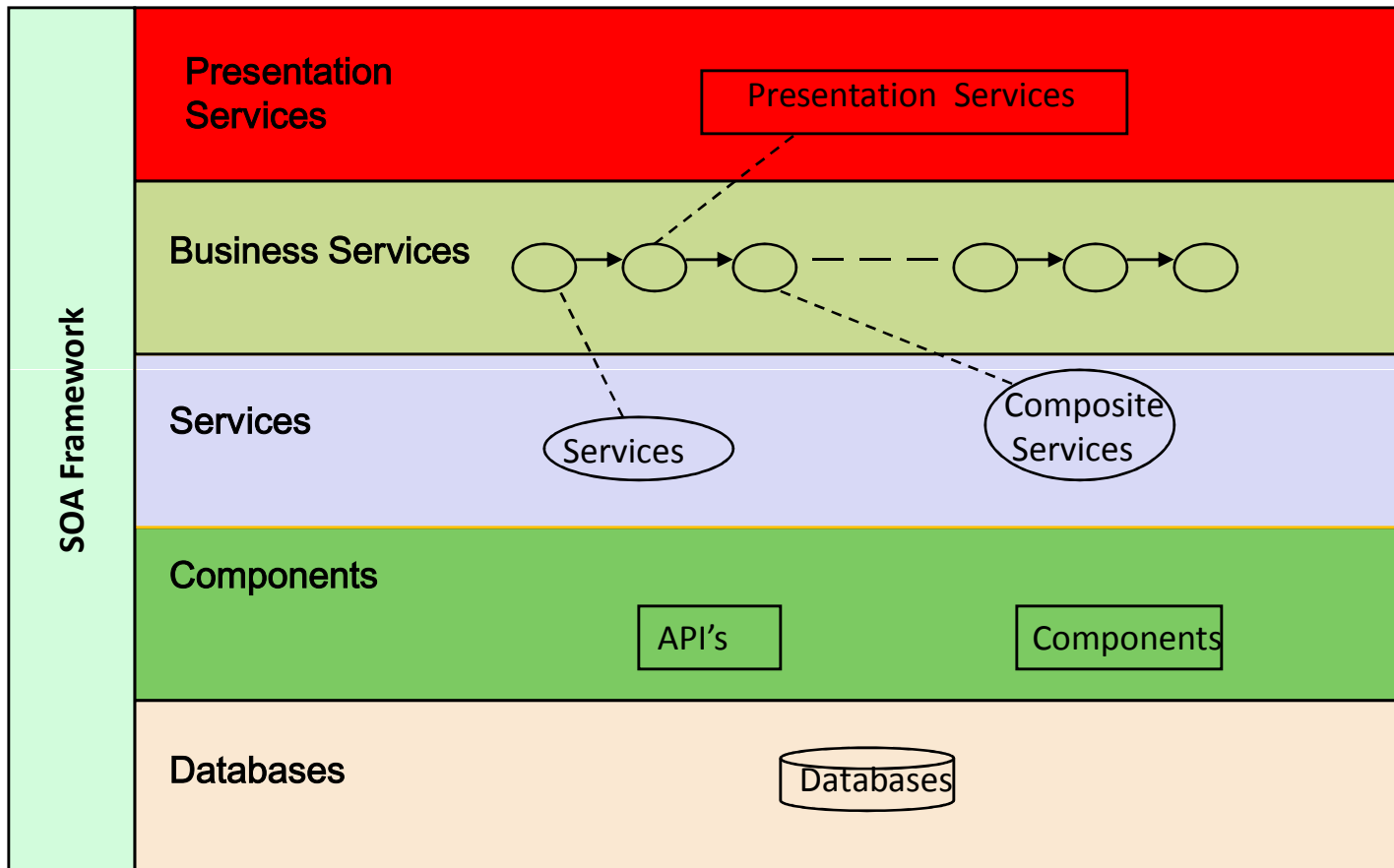
Enterprise Service Oriented Architecture Process



SOA Technology Execution

- Create a SOA roadmap and detailed plans
- Incorporate the SOA strategy in transition planning
- Define mechanisms for discovering services
- Categorize Services:
 - Business Services
 - Business level
 - Application Services
 - Application level
 - Data Services
 - Data level
 - Infrastructure Services
 - Security
 - Identity management
 - Persistence
- Develop services with the proper granularity
- Manage and monitor service usage, performance, reliability

SOA Execution Framework



Examples of services

- Infrastructure – Logging, Auditing, Notifications, Search, Data
- Security – Authentication, Authorization, Single sign on,
- Enterprise Infrastructure – Collaboration, Search, Directory services
- Portal – Reporting, Personalization
- Data – Analytics, validation

SOA Examples

- Web based payments
 - Built scalable SOA architecture to adapt better to process driven changes
 - Integrated diverse systems such as customer database, payments database based on J2EE and Web Services
- Consolidation of Applications:
 - Built a SOA based architecture to consolidate web based applications
 - Integrated applications that were silos for form processing

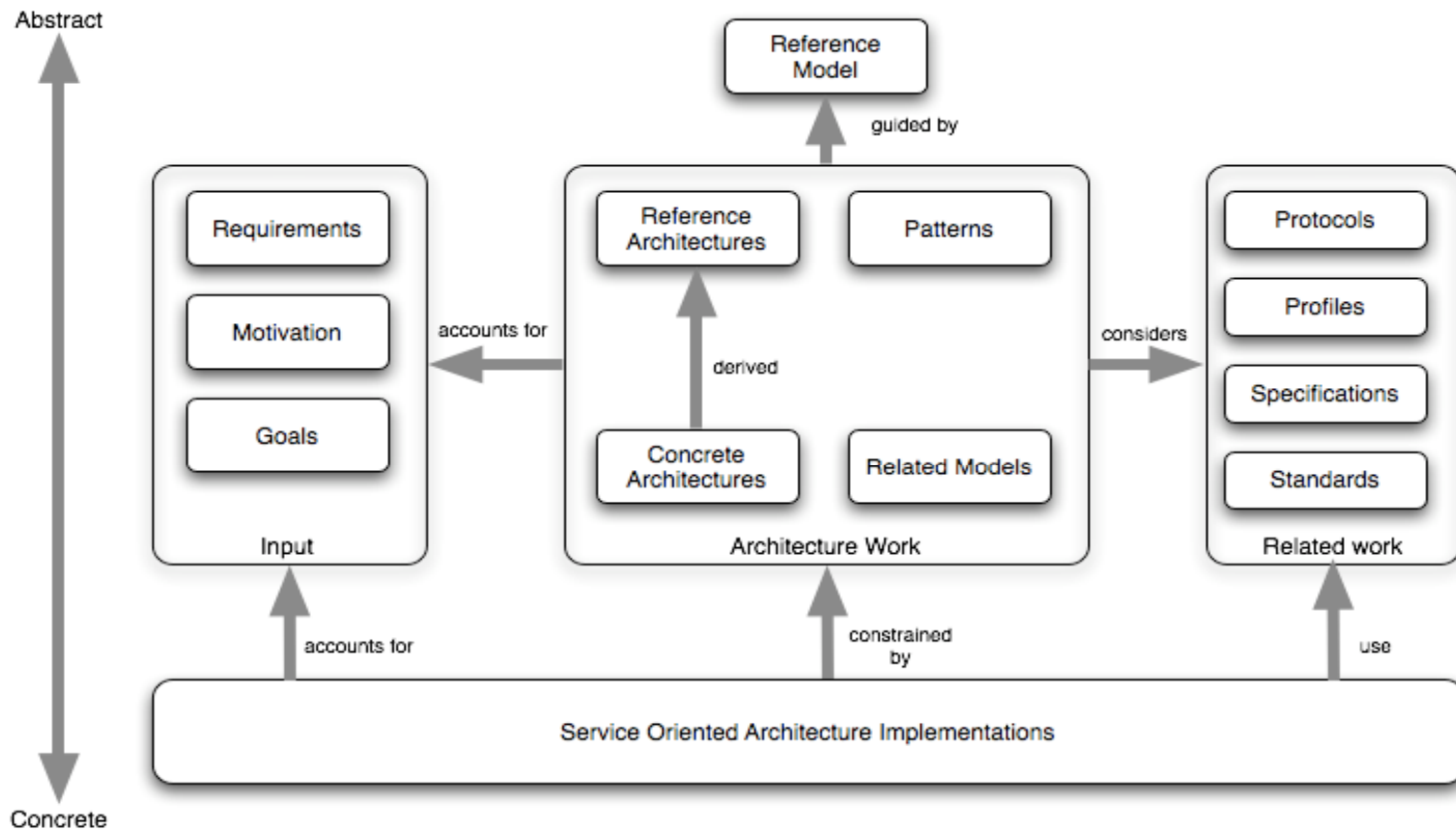
SOA Examples

- Web based claims
 - Built a scalable SOA architecture for users to file claims
 - Integrated diverse systems such as customer database, claims history, eligibility etc based on J2EE and Web Services
- Web based Reporting:
 - SOA based architecture for reporting
 - Canned and adhoc reports

SOA, SOBA, BPM, BPEL

- SOA focuses on the composition of components, while BPM provides the capability to model the components
- BPEL provides the capability to compose the web services into new services
- Business process integration can be best achieved through SOA
- SOBAs are a composition of services that implements business processes

Standards - OASIS SOA RM



*OASIS SOA RM Standard
- published by OASIS*

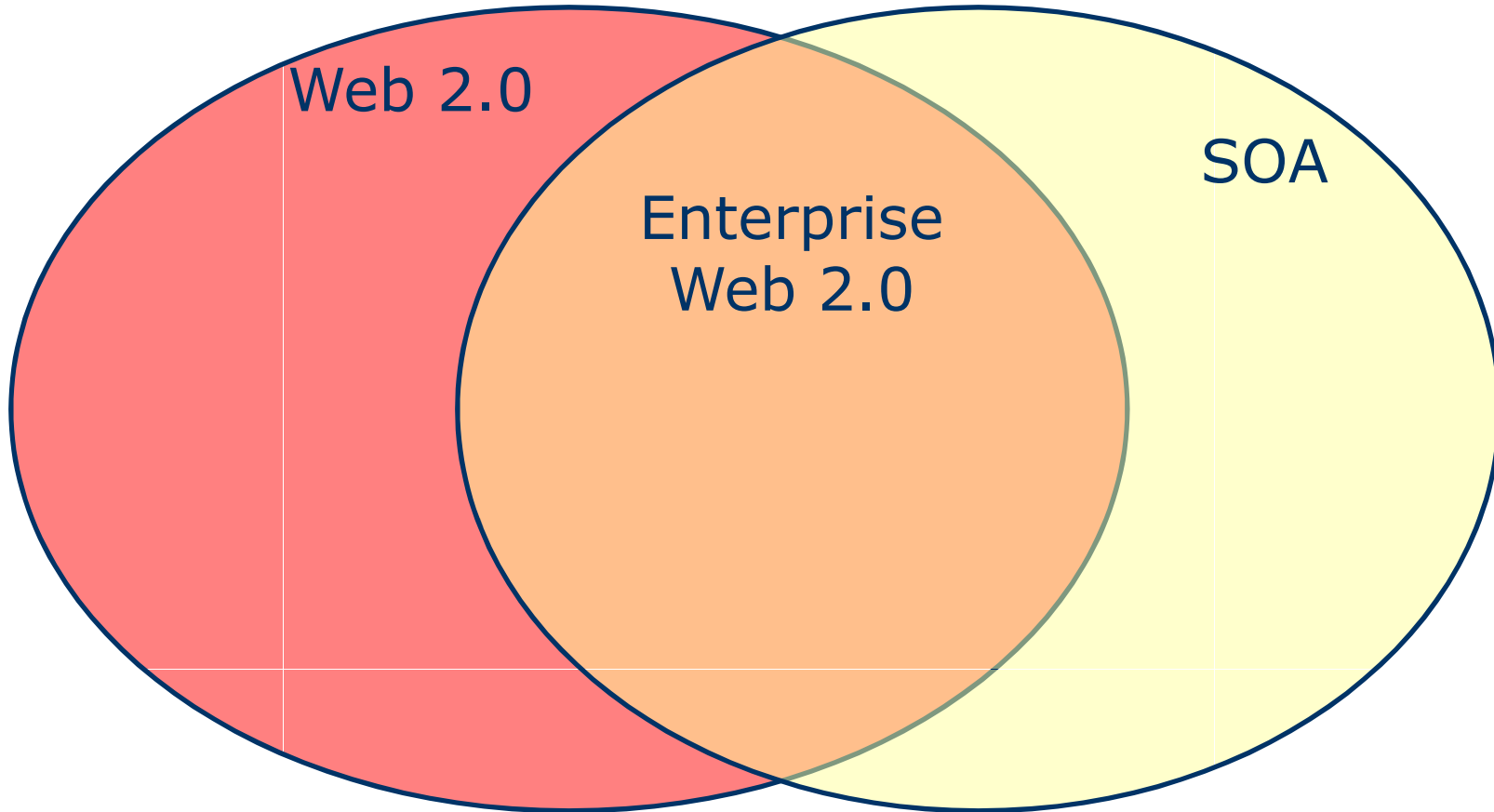
Enterprise Service Bus

- Enterprise Service Bus (ESB) is the backbone for SOA and provides a standards based, secure and reliable messaging mechanism
- The ESB provides interoperability through adapters and interfaces
- The ESB is configuration driven and provides Security, logging, auditing capabilities
- ESB functions include:
 - Message Transformation
 - Content Based Routing
 - Publish and Subscribe

Enterprise Service Bus

- The Enterprise Service Bus (ESB) provides a robust, scalable infrastructure that connects disparate applications, mediates their incompatibilities and orchestrates their interactions. The ESB also:
 - Streamlines the development of services
 - Promotes intelligent routing and real time monitoring
 - Supports security and exception handling
 - Supports multiple binding strategies

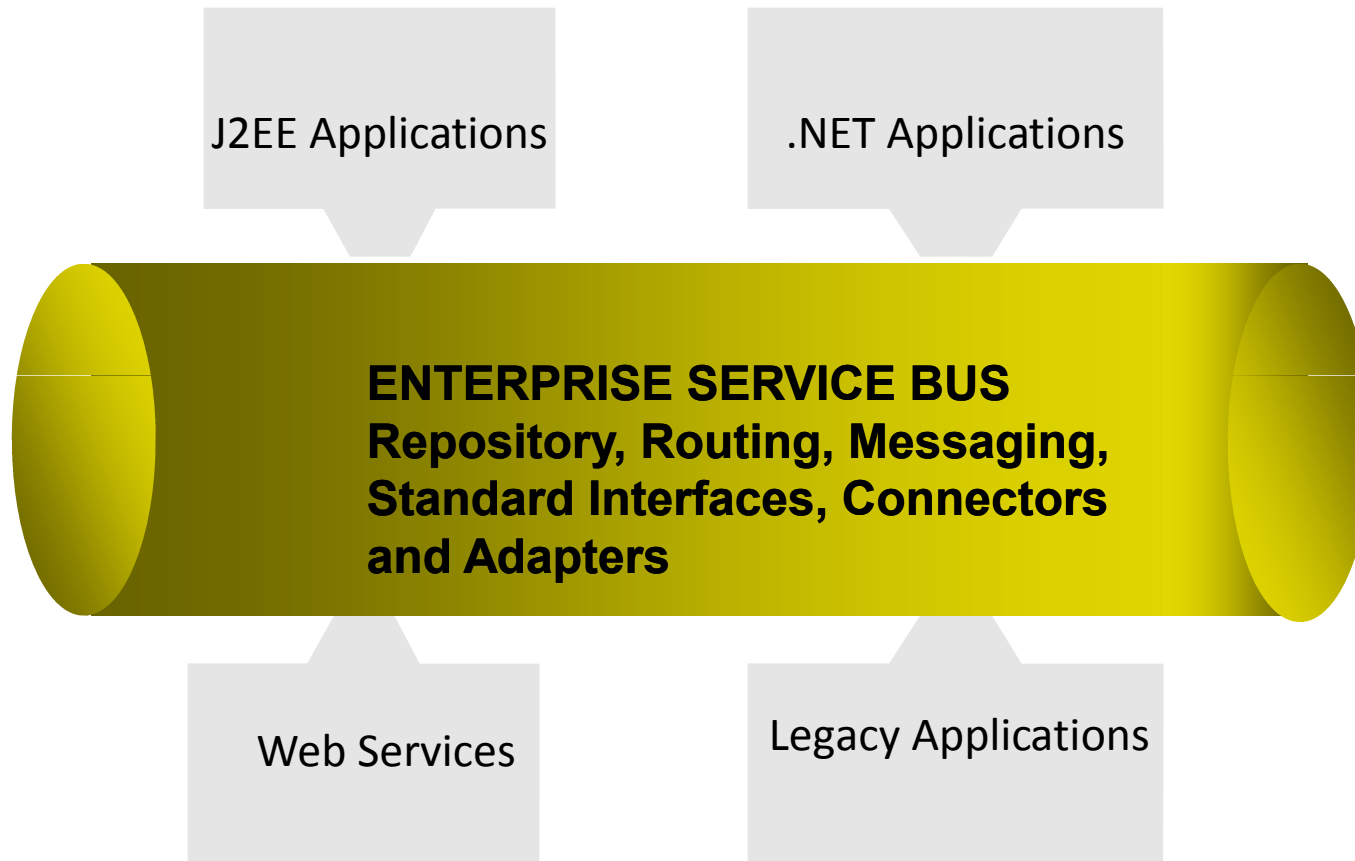
SOA v/s Web 2.0



The future of SOA in the Government

- Agile SOA to focus on the incremental and iterative process
 - Periodic and iterative delivery of deliverables
 - Accept changing requirements
 - Short delivery cycles
- Web 2.0 and SOA
 - Web 2.0 can be a realization of SOA business and composite applications

Enterprise Service Bus



Service Mediation and Orchestration

- Service mediation handles the interaction between the service provider and consumer
- Service composition combines fine grained services into coarse grained ones
- Service Orchestration coordinates individual services into a bigger units
- Service choreography specifies the interations between independent processes
- ESBs can support mediation and orchestration capabilities

SOA Execution

- Process and Governance – Policies, Interface management, Points of contact, SOA adoption across the enterprise
- Identify the existing Business Domain Model – Functions, Data, Systems
- Define the technology standards and use them across the organization – SOAP, XML, WSDL
- Define and identify services and relate to business processes based on data, latency
- Create a registry in the organization
- Security – WS Security, SAML etc

Government's Adoption of SOA and SOA Examples

Ajay Budhraj has over 18 years in Information Technology with experience in areas such as management, project management, enterprise architecture, system architecture, software engineering, training, methodologies, networks, databases etc. He has a Masters in Engineering (Computer Science) and also a Masters in Management. He is a Project Management Professional certified by the PMI and is also CICM, CSM, ECM (AIIM) Master and ITIL-F certified. Ajay has led large scale projects for big organizations and has extensive IT experience related to telecom, business, manufacturing, airlines, finance, government. He has delivered web based technology solutions and strategies for e-business platforms, portals, mobile e-business and content management. As Adjunct Faculty, he has taught courses for several universities and has presented papers at worldwide conferences.

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