

Enterprise SOA Strategy, Planning and Operations with Agile Techniques, Virtualization and Cloud Computing

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Enterprise Transition driven by Technology

- The current environment – Build it Better, cheaper, faster
- Organizations need to constantly innovate to be competitive
- Shift from “command and control” to “facilitate and enable”
- Government needs to come up with innovative approaches to re-engineer business processes
- **To accomplish great things, we must not only act, but also dream; not only plan, but also believe -Anatole France**

The Transformation of Government

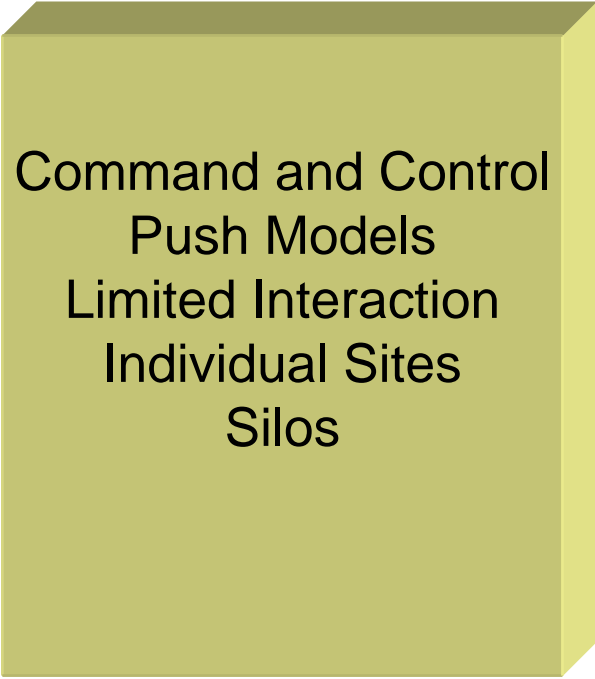
Technology Change Drives Government Forward!

Build Communities, Collaboration and Trust with Citizens and Users

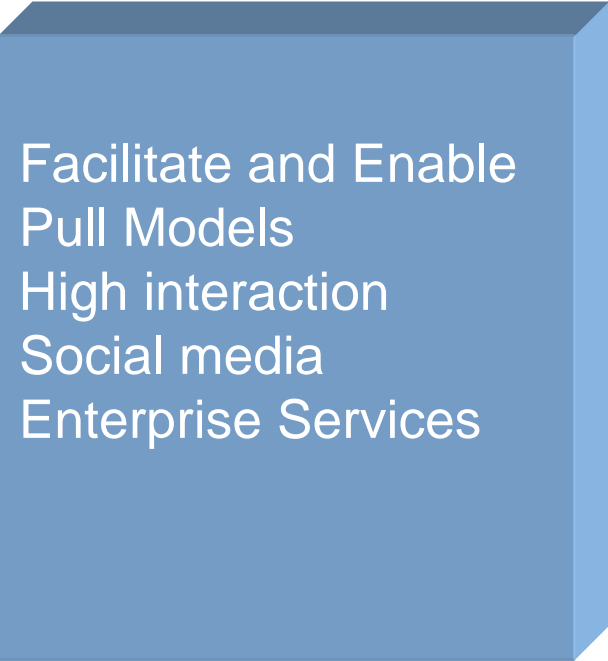
- Transparent
- Collaborative
- Online
- Interactive
- Responsive
- Leverage Wikis, Blogs, Social networks, Mashups, Video tools for jobs, campaigns, fund raising, education, marketing etc.
- Utilize SOA, Agile, Virtualization, Cloud Computing effectively for Web 2.0



The Transformation to Enterprise SOA and Web 2.0



Command and Control
Push Models
Limited Interaction
Individual Sites
Silos



Facilitate and Enable
Pull Models
High interaction
Social media
Enterprise Services

Enterprise Service Oriented Architecture

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

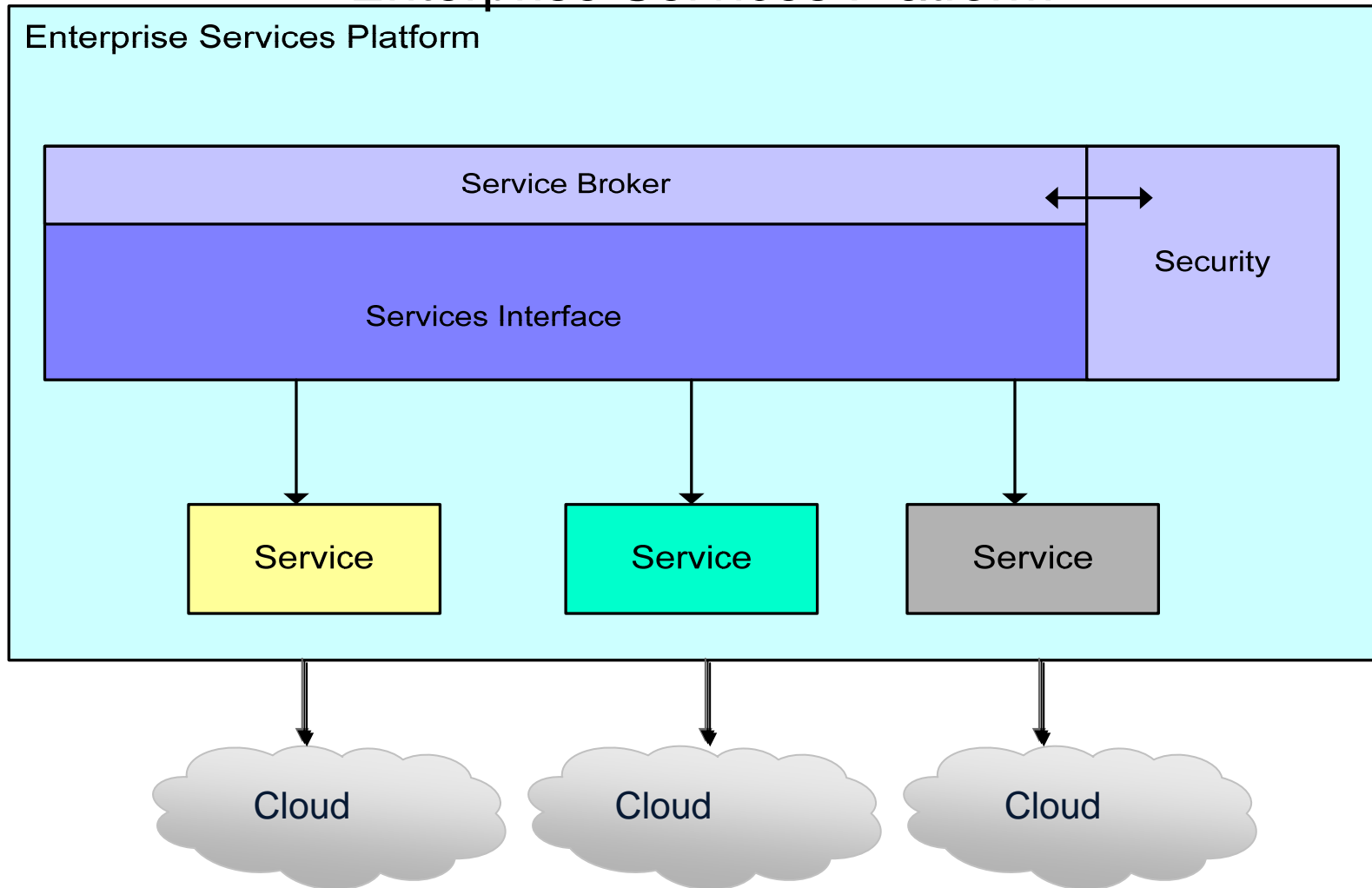
Enterprise Service Oriented Architecture

- SOA utilizes open standards to develop encapsulated building blocks
- SOA standardizes the interactions between the services
- Services are loosely coupled and modular elements
- Services promote reuse and interoperability

Enterprise SOA Benefits

- The development of an Enterprise Architecture Strategy and effective mapping of business processes to services using Agile, Virtualization and Cloud Computing facilitates the following:
 - Cost savings
 - Increased flexibility for redesign
 - Reuse of business functionality
 - Reduction of complexity, technology independence
 - More efficient development

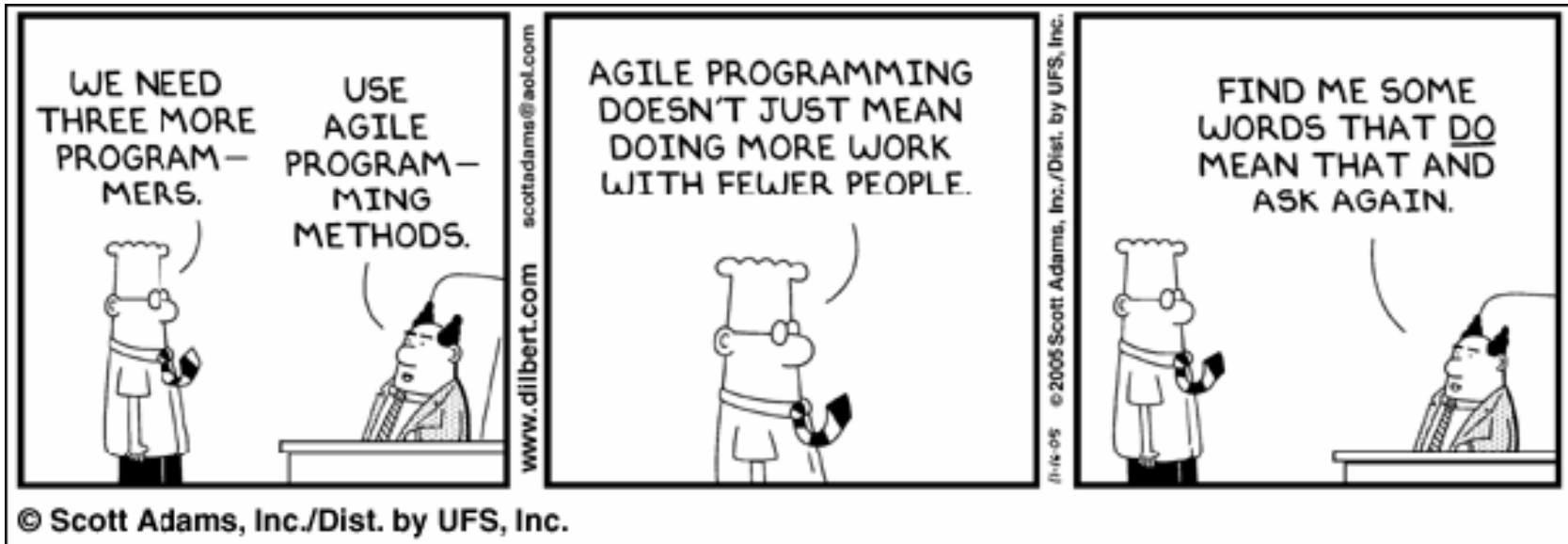
Enterprise Services Platform



SOA Evolution to Agile, Virtualization and Cloud Computing



Agile Myths



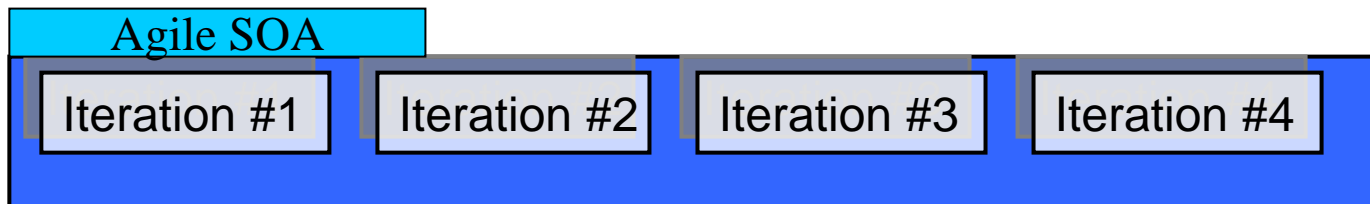
Agile Techniques

- Agile – The ability to respond quickly to change leads to
 - Better return on investment
 - Better quality products
 - Enhanced productivity
 - Better team collaboration
- The implementation of Agile techniques results in greater effectiveness of handling changes in many areas such as:
Requirements, Priorities, Technology,
Tools, Resources

Agile SOA

The objective is to rapidly adapt to changes in a cost effective manner. Key elements for service development are:

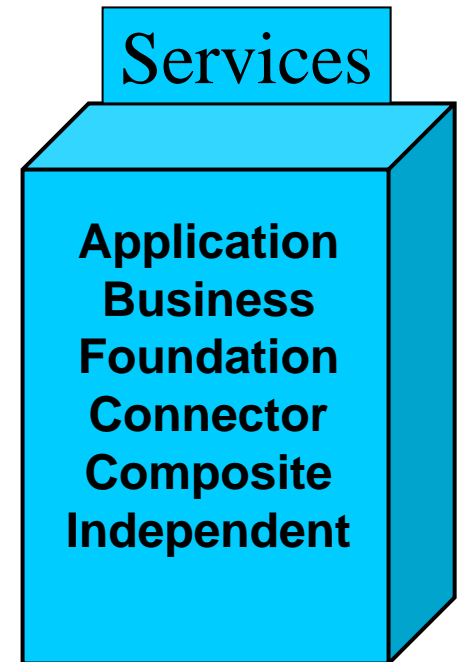
- Plan for each iteration as a comprehensive unit
- Identify and develop services iteratively
- Perform frequent and distinct service definition and integration
- Perform incremental service delivery



Agile Service Framework

Service Categorization

- Application – Functional
- Business – Functional logic
- Foundation – Basic services
- Connector – Link services
- Composite – Aggregate services
- Independent – Free standing



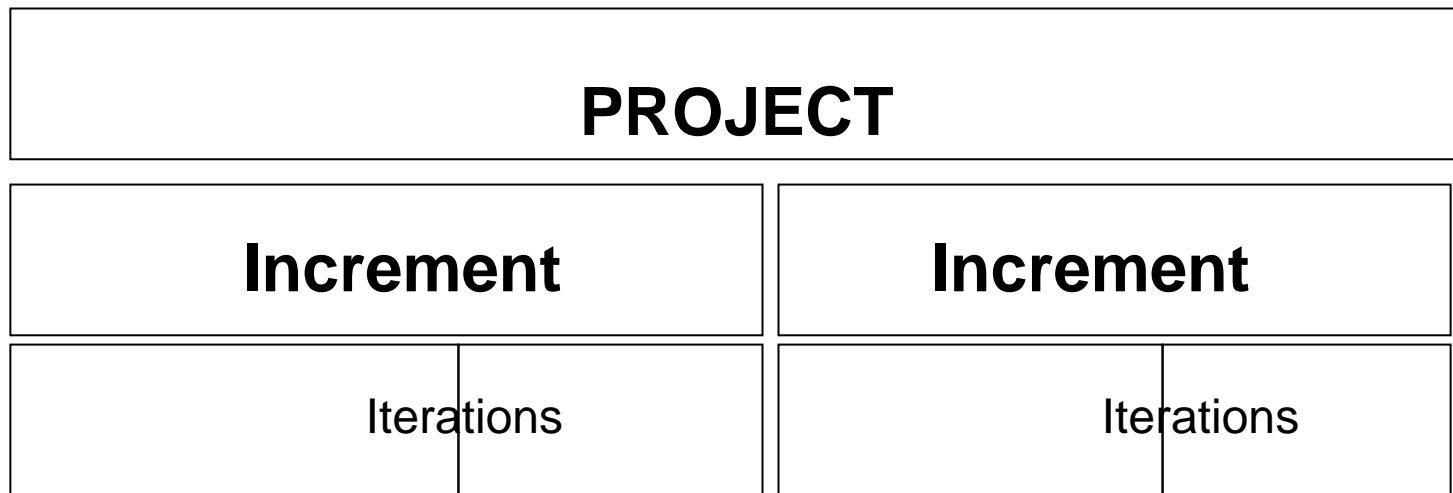
Agile SOA Process

- Service requirements and analysis occur in parallel with service development
- SOA requirements do not have to be fully developed initially
- Develop potential services and refine the services during the SOA process
- Minimize iterations and incremental development for core and foundation services
- Develop plans for iterations and incremental development

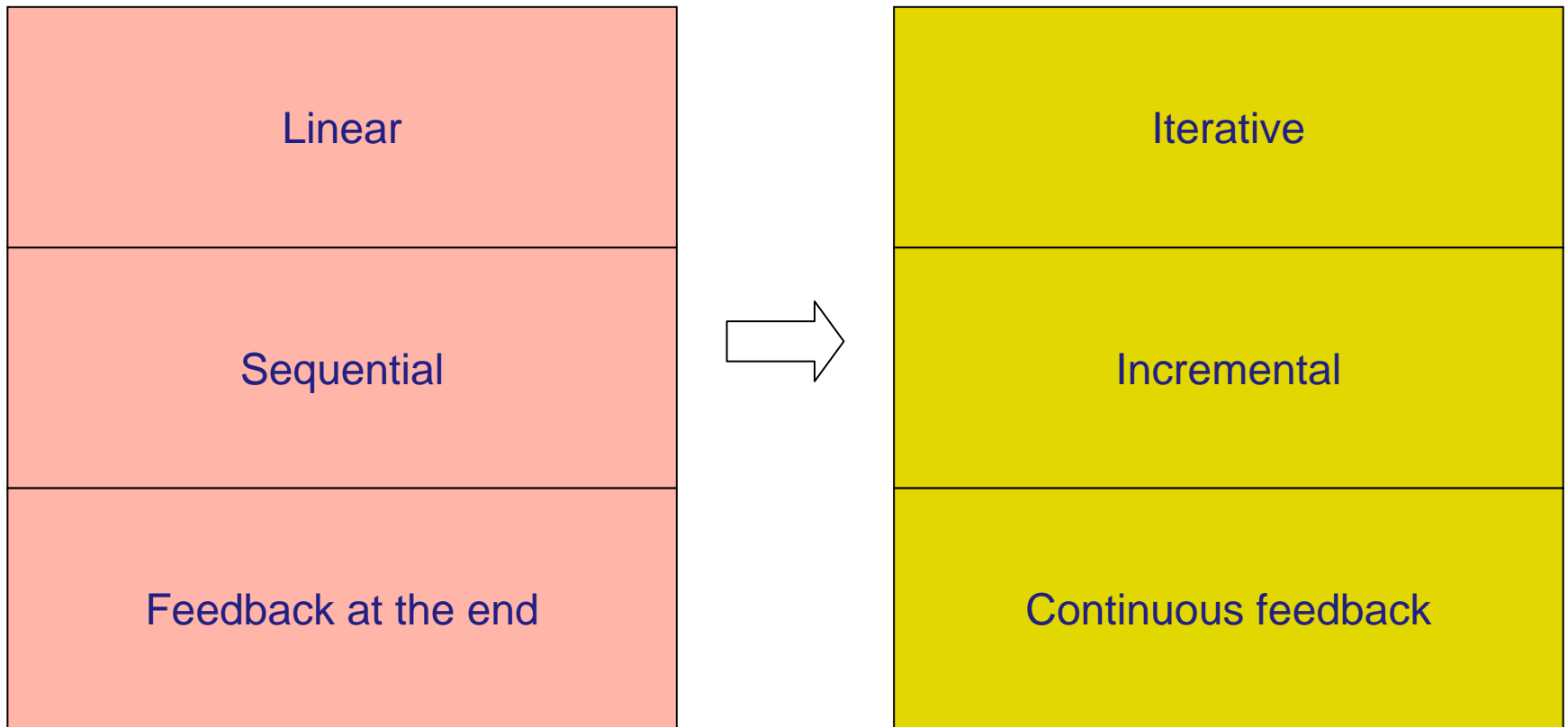
Agile Service Management

Agile Service Management can be based on the following:

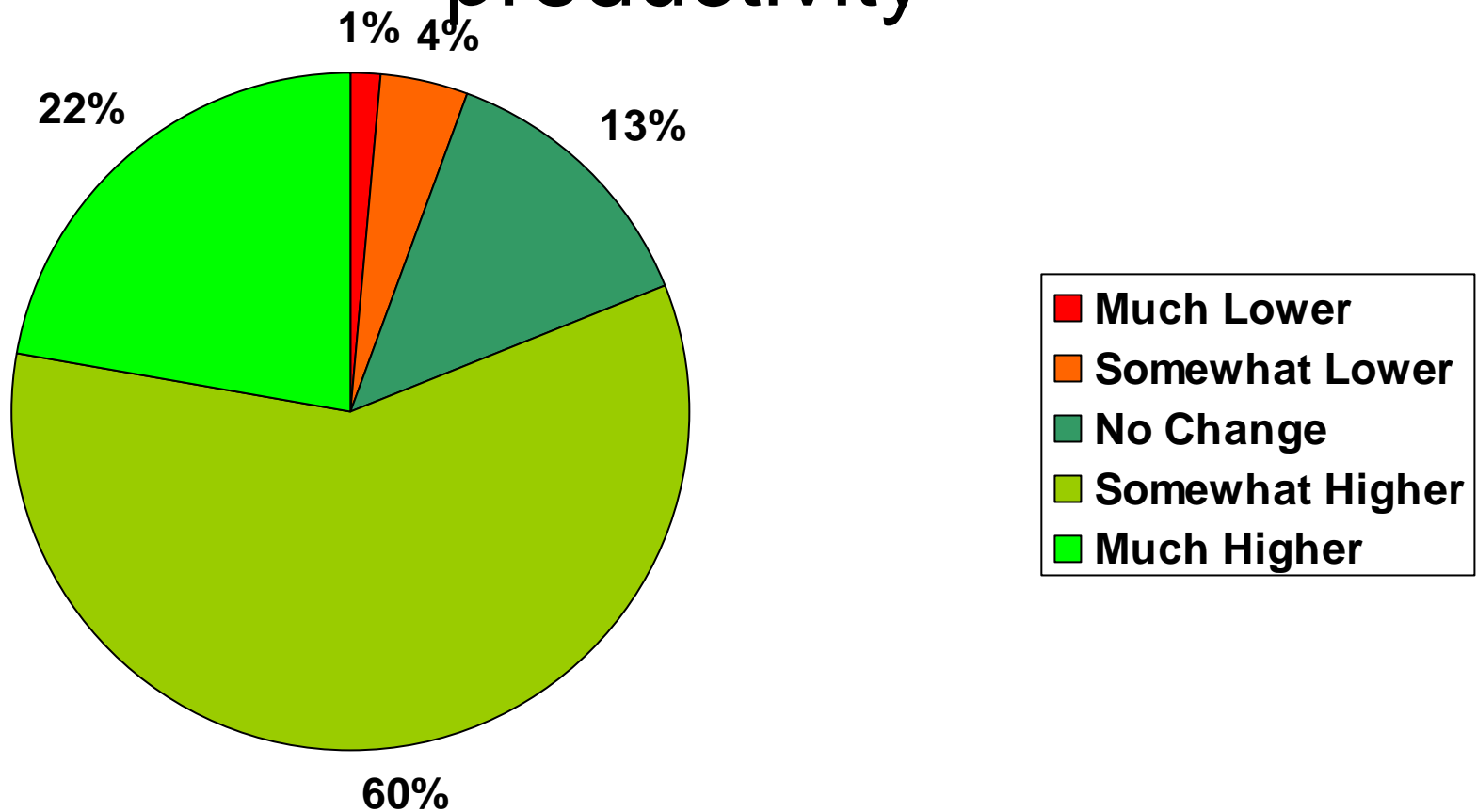
- Evolutionary, Time based
- Incremental Change, collaboration
- Process adaptability



The Evolution to Agile



Agile approaches affecting productivity

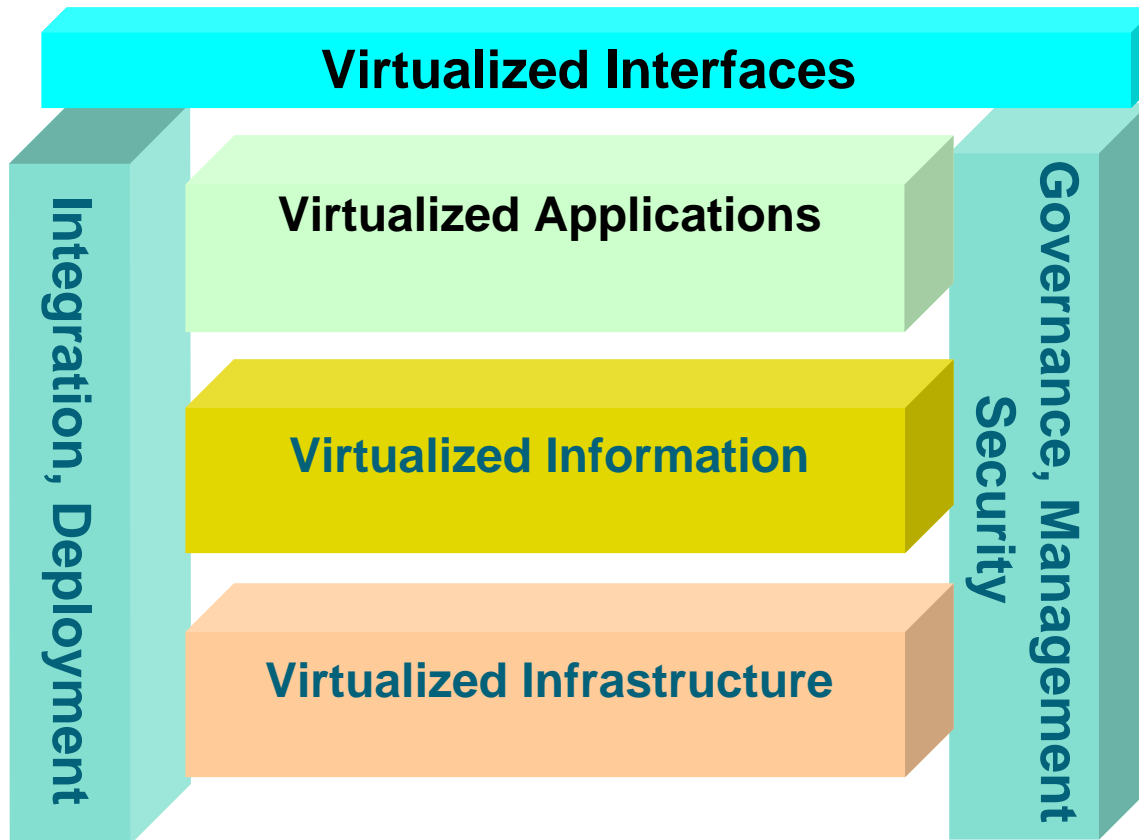


Results from Scott Ambler's Agile Adoption Survey

Virtualization

- Virtualization is an abstraction layer that decouples a consumer from the provider of resources.
 - Hardware Virtualization
 - Virtual Endpoints
 - Virtualized Services
- Virtualization can result in :
 - Improved workload management
 - Infrastructure cost savings
 - Effective utilization of resources
 - Better support for consolidation and optimization
 - Better Manageability, Operations and Security
- Virtualization enables shifting of workloads based on policies
- Virtualization complements SOA which abstracts functionality into “services”

Virtualization

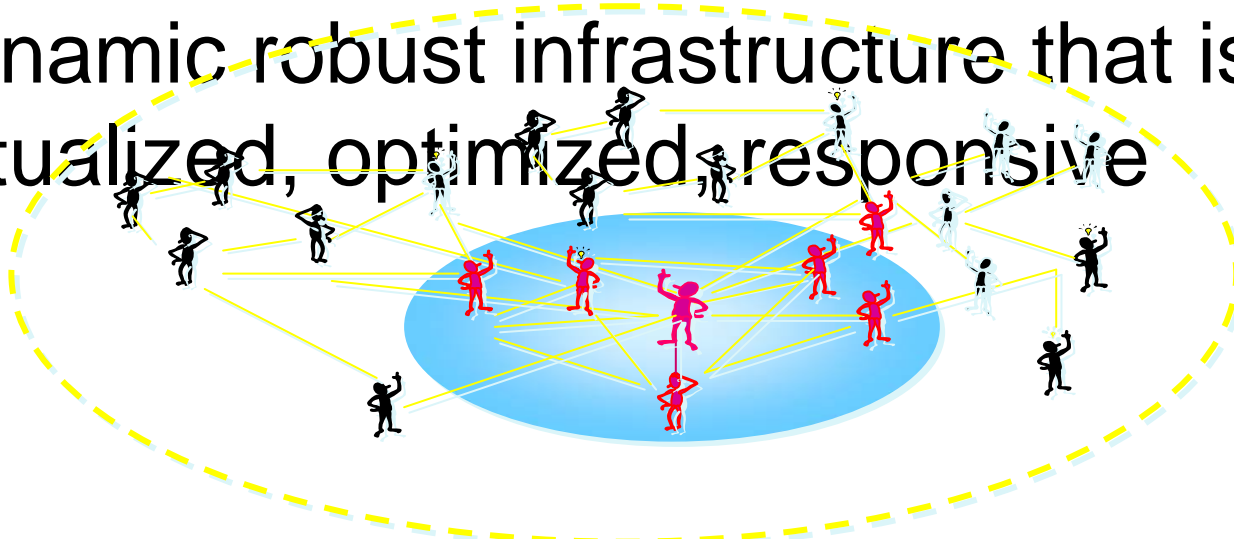


Service Oriented Virtualization

- Service Oriented Virtualization can
 - Decouple the dependency on deployed services and implementation layers to realize lower cost and agile implementation
 - Publish and subsequently utilize virtual services on demand
 - Facilitate Agile development, testing collaboration resulting in cost savings

SOA, SOI and Virtualization

- SOA – Application functionality is developed into a service component layer
- Virtualization – Abstract storage and systems into a service layer
- SOI – Service Oriented Infrastructure
Dynamic robust infrastructure that is virtualized, optimized, responsive

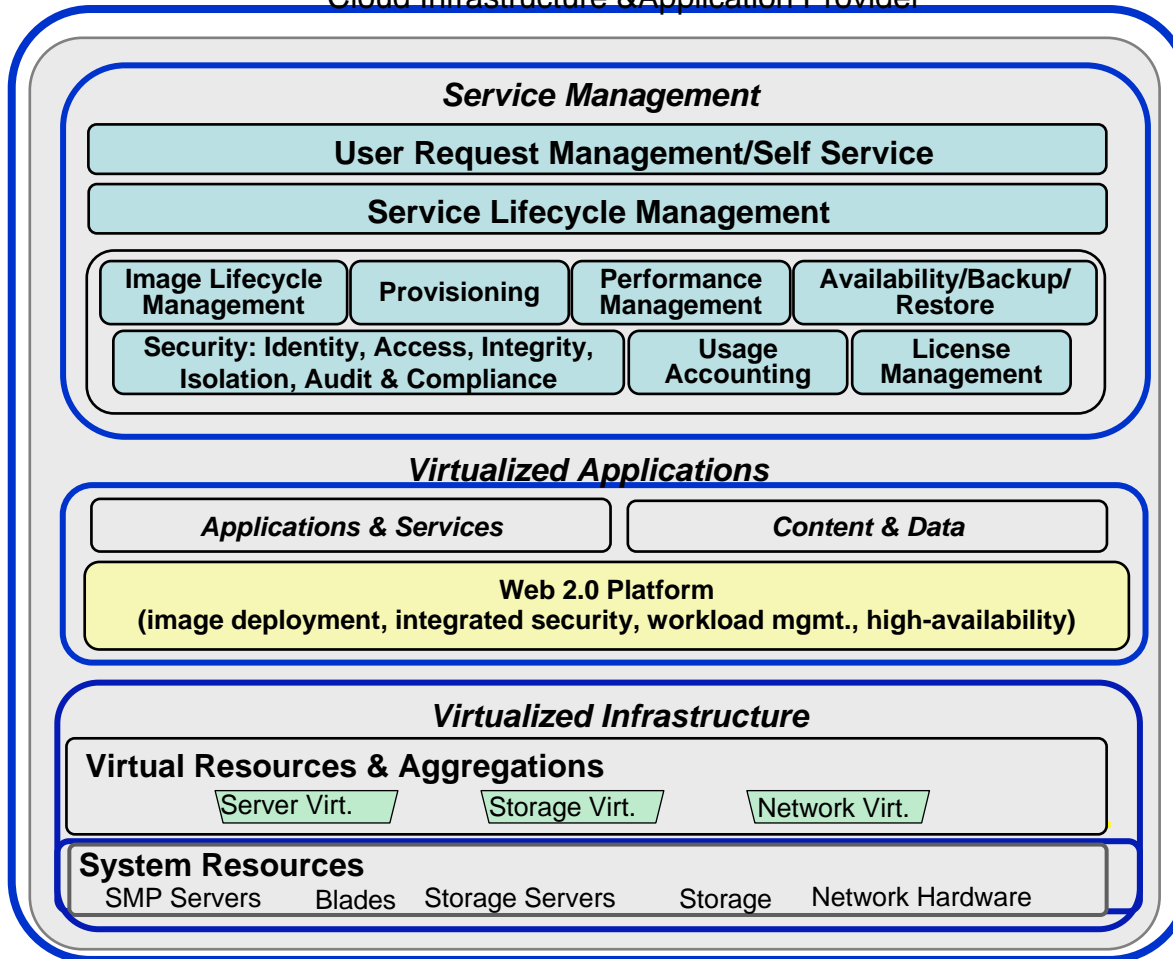


Cloud Computing

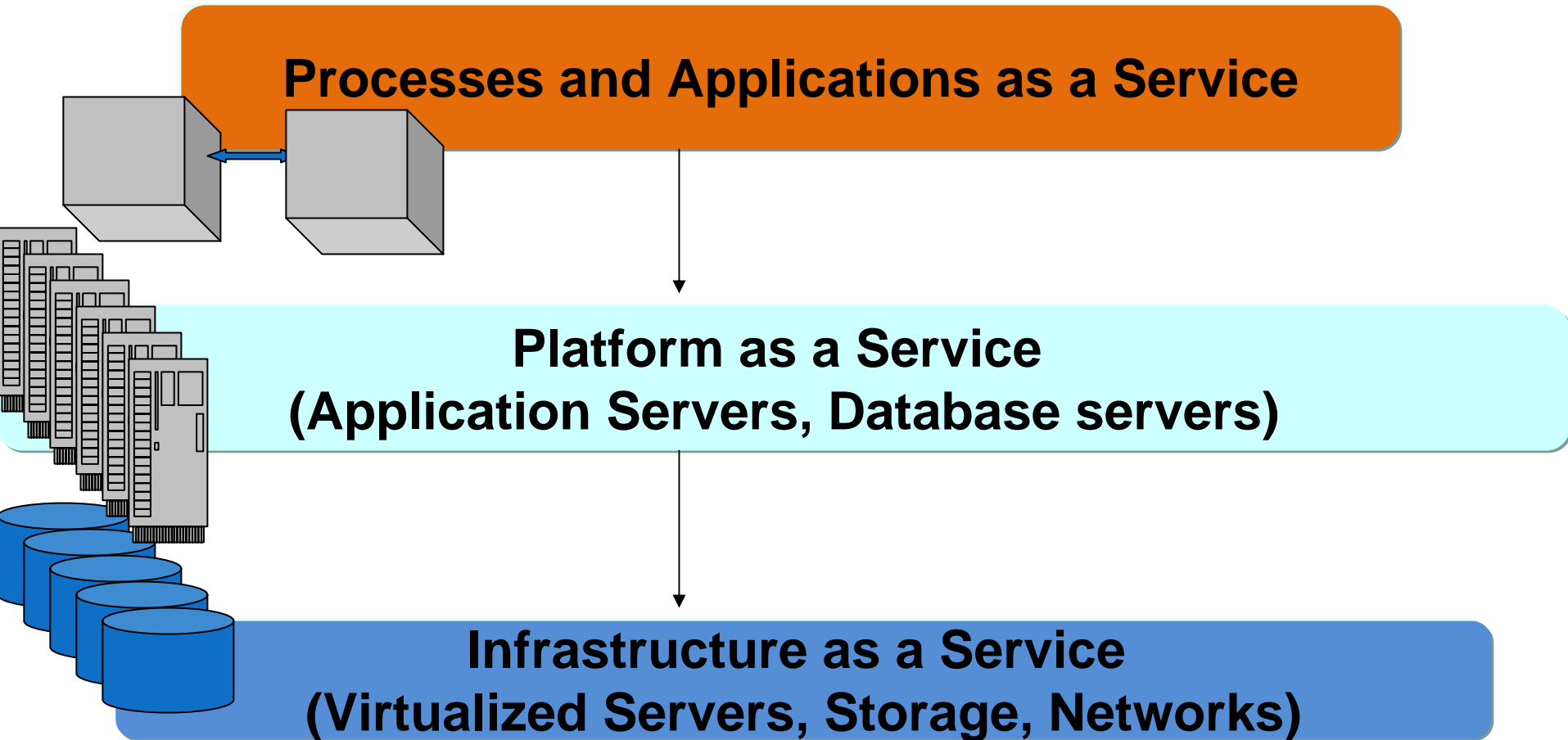
- Standardized, scalable, elastic capabilities delivered dynamically as services
- Information Technology capabilities are delivered as services
- Realization of SOA and Virtualization to develop a complete IT solution.
- Supported on dynamic infrastructure and can be on self managed platforms
- Cloud computing can result in
 - Reduced cost
 - Increased storage, automation
 - Enhanced mobility and flexibility

Cloud computing

Cloud Infrastructure & Application Provider



Cloud Services



SOA and Cloud Computing

- SOA creates loosely coupled, modular, that can leverage virtualization
- Cloud computing platforms can provide support for the deployment of services
- SOA complements and enables Cloud Computing
- SOA and cloud computing support a loosely coupled enterprise application infrastructure to develop manageable and flexible solutions

SOA supports Agile, Virtualization, Cloud Computing

- Loose coupling for services supports Agile responsiveness to change
- Abstraction of service interface from implementation enables dynamic change of service providers
- SOA Architecture supports extensibility for future needs
- Services can leverage virtualization and with Cloud computing third party services can be accessed
- Reuse based on services leads to agility and cost savings
- Agile, Virtualization and Cloud computing support the building, deployment and delivery of dynamic services

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, Architects
- Develop candidate architectures and reference models
- Develop services in a step by step manner, develop Service Level Agreements and measure the return

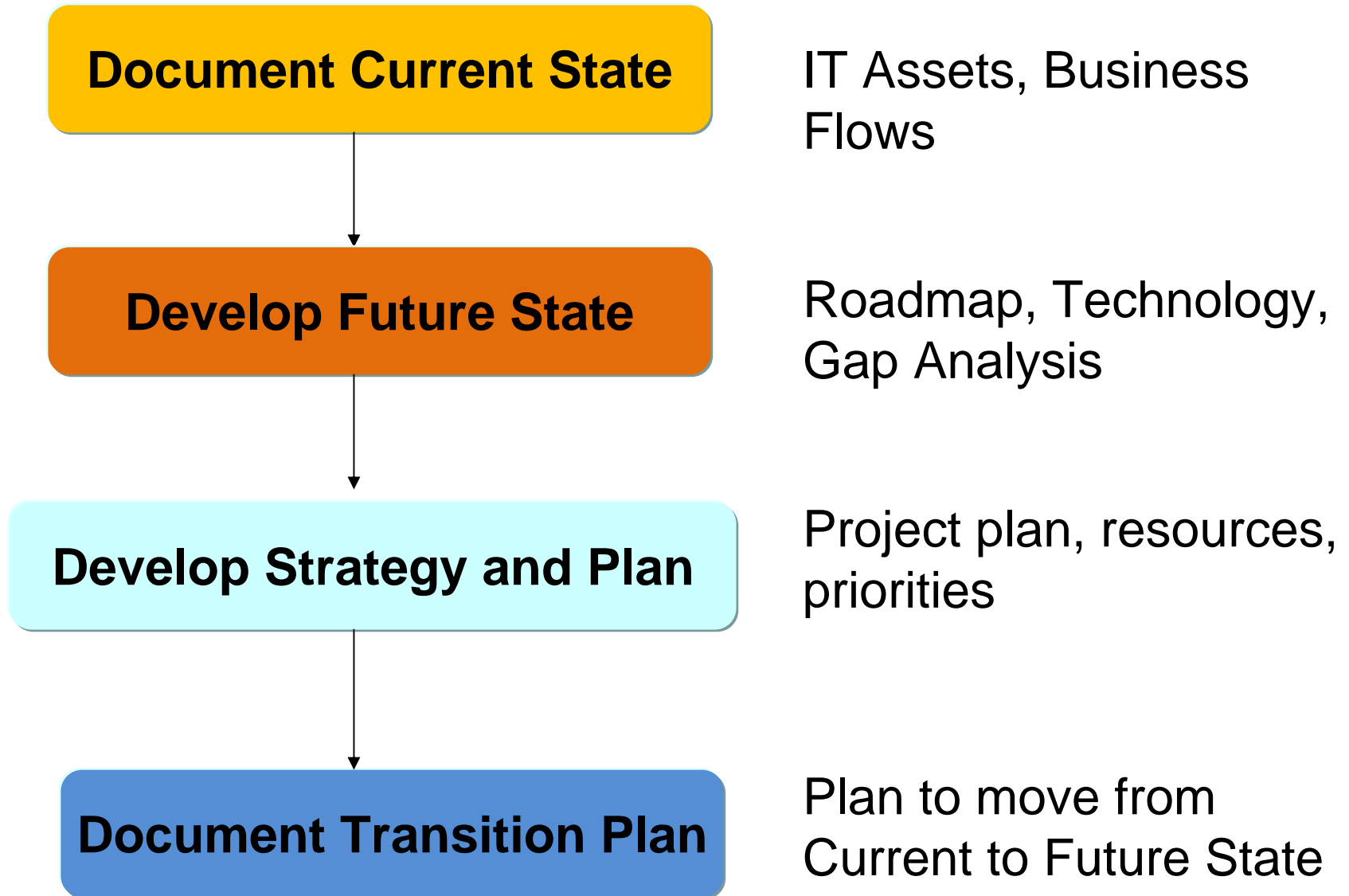
Enterprise SOA Strategy

- Establish a Vision that aligns Business with IT
- Define the SOA, Agile, Virtualization, Cloud Computing 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

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

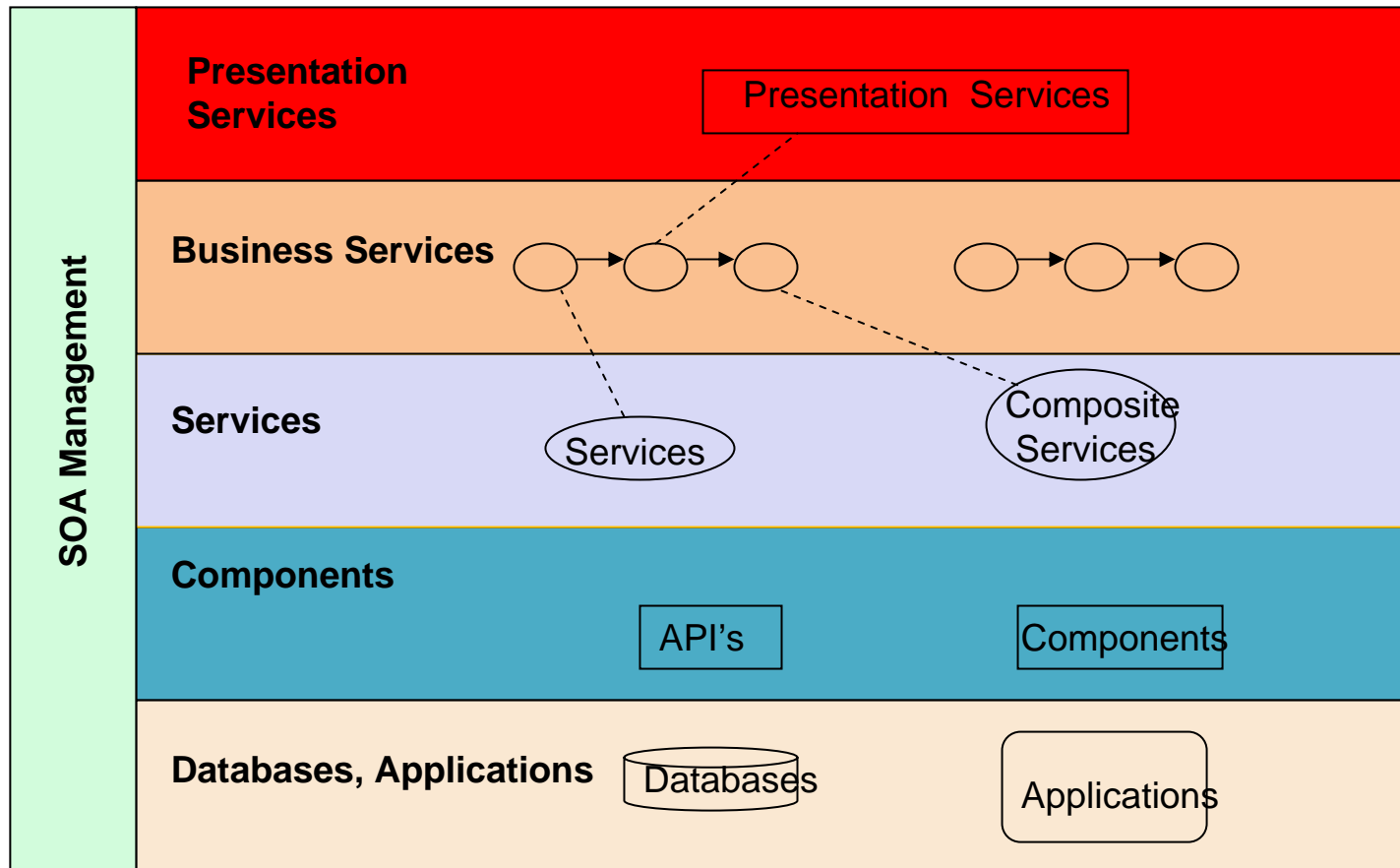
Enterprise Service Oriented Architecture Process



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 Service, Application Services, Infrastructure Services
- Develop Agile services with the proper granularity
- Manage and monitor service usage, performance, reliability
- Abstract cross cutting functionality such as infrastructure functions
- Create a Service registry and publish the services to this registry
- Comply with industry standards – SOAP, XML, WSDL, WS-Security, BPEL
- Leverage process and methodology to build SOA solutions and utilize SOA Implementation frameworks and Service Mediation and Orchestration
- Leverage Enterprise Service Bus for a standards based, secure, reliable messaging mechanism
- Deploy services using virtualization, cloud computing as needed

SOA Execution Framework



SOA, Agile, Virtualization, Cloud Computing Challenges and Risks

- Budget, Resources, and Buy in
- Organizational change - Power struggles, conflicts, lack of information sharing
- Heterogeneous and dispersed systems
- Lack of competencies for management and technology
- Change and Transition to Agile techniques
- Lack of appropriate Hardware and software resources
- Data transfer and Security issues

AJ's SOA Mantras

- Develop SOA Strategy, Roadmap, Plans, Architecture
- Focus on Process and Governance – policies, interface management, adoption across the Enterprise
- Review and assess core business processes and develop service layers
- Develop a strong platform that supports Service Management, Security, Identity Management etc using standards
- Develop services based on latency, data and create registries
- Develop roadmap and plans for Virtualization and Cloud computing as required resulting in better provisioning, enhanced productivity and strengthening of business continuity
- Develop SOA best practices and blueprints
- Provide Strong Leadership and Training for SOA Projects

Enterprise SOA Strategy, Planning and Operations with Agile Techniques, Virtualization and Cloud Computing

Ajay Budhraja has over 19 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, SOA, RUP 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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FOR QUESTIONS on AGILE, Web 2.0, VIRTUALIZATION, CLOUD COMPUTING, TECH EVENTS etc PLEASE EMAIL AJBUDREGISTER@YAHOO.COM

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