

Practitioner's Guide: Best Practices in Enterprisewide SOA Initiatives

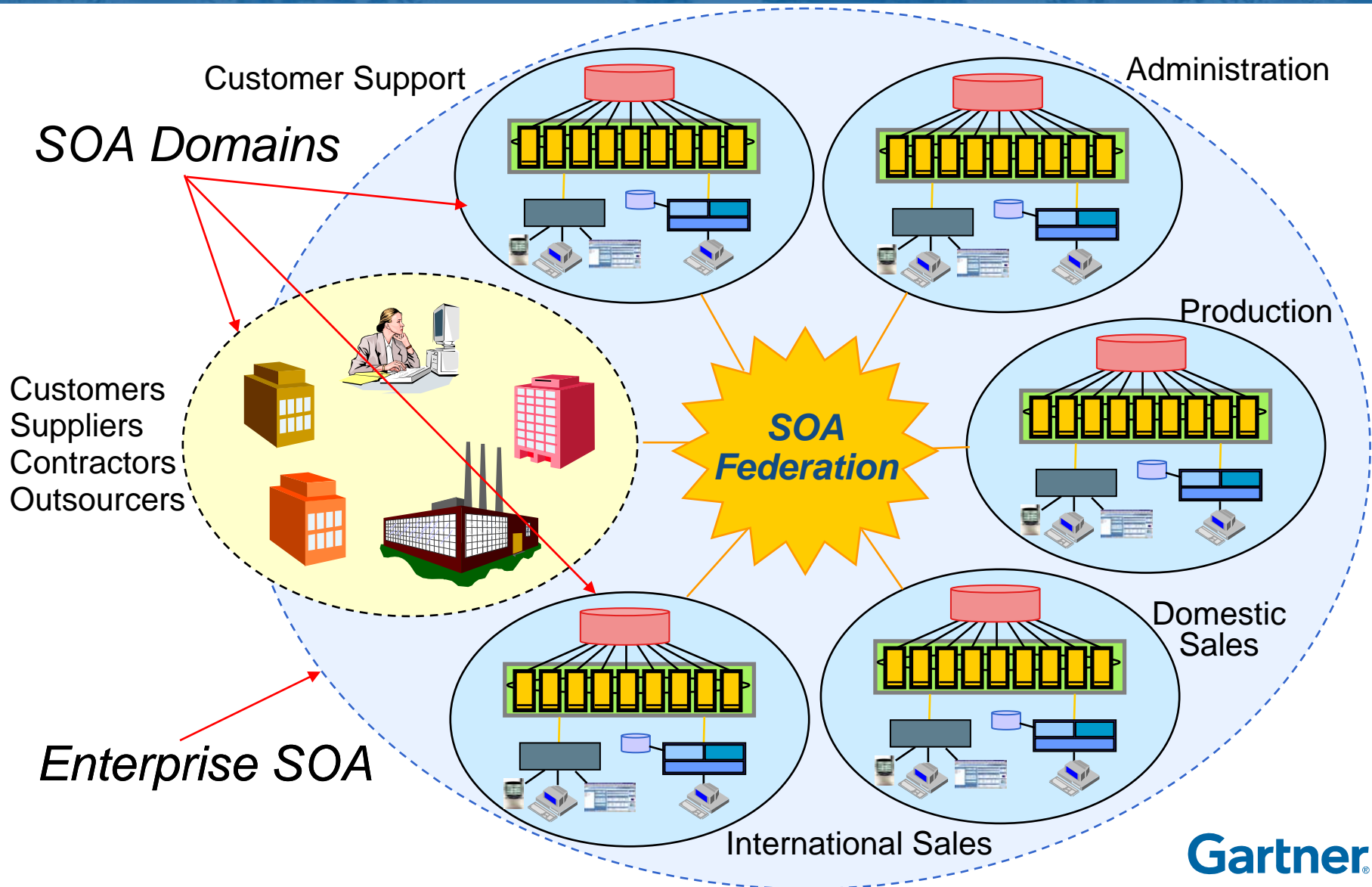
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Enterprisewide SOA Is Multiowned and Federated

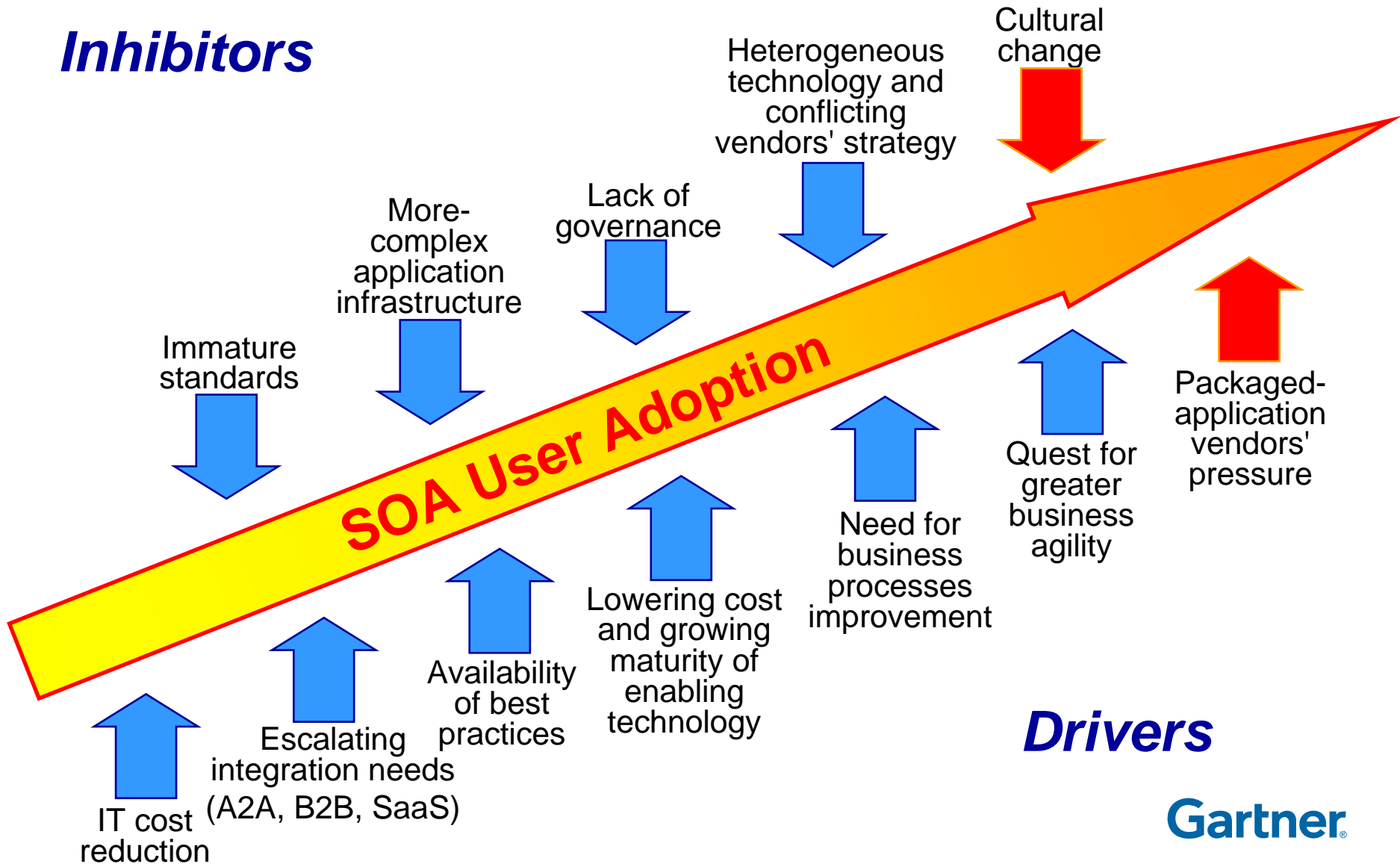


Key Issues

1. What will be the technical and business drivers for strategic SOA adoption?
2. How will organizations incrementally approach large-scale SOA initiatives?
3. What are the key hurdles on the way to enterprisewide SOA, and how can organizations get over them?

Irresistible Forces Push Organizations Toward SOA Adoption

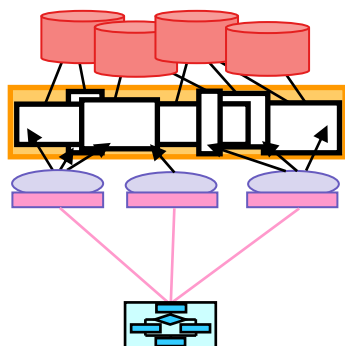
Inhibitors



Drivers

Adopting SOA-Enabled Packaged Business Applications

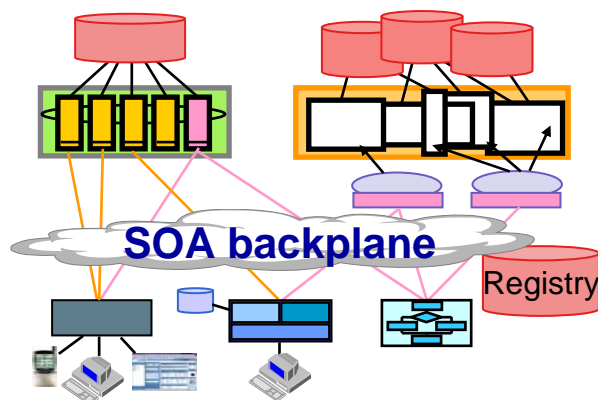
Wrapped SOA



2007

- Pre-SOA packages/modules
- Vendor-provided standardized service-wrapped interfaces
- Packaged and custom processes and composite applications
- Minimalist SOA backplane
- Informal registry and governance

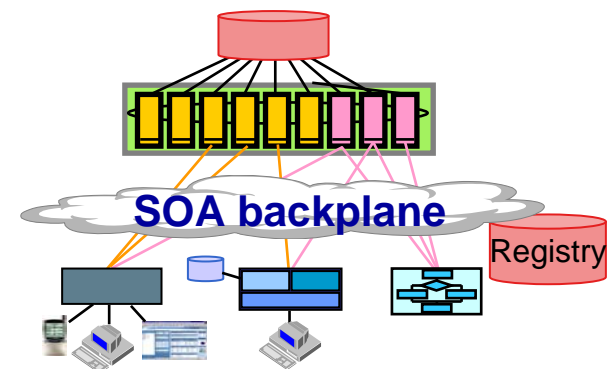
Hybrid SOA



2008-2012

- Coexistence of full-SOA and pre-SOA packages/modules
- Coexistence of vendor-provided standardized native and wrapped interfaces
- Packaged and custom processes and composite applications
- Full SOA backplane
- Formal registry and governance

Full SOA



Post-2012

- Full SOA packages/modules
- Vendor-standardized native interfaces
- Packaged and custom processes and composite applications
- Full SOA backplane
- Formal registry and governance

Where Will Users Source Their Business Services?

Business Impact of Services

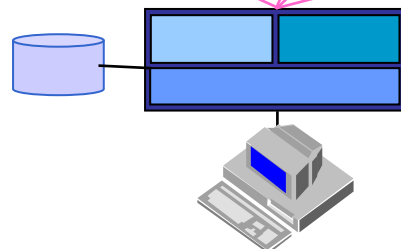
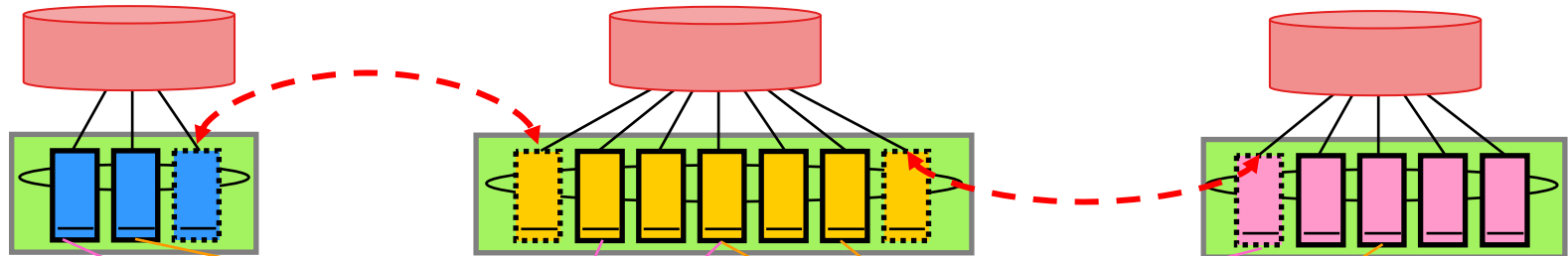
TCO

Differentiation

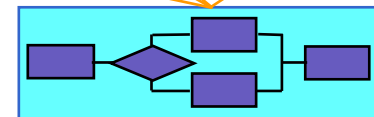
On-Demand Services (SaaS)

Purchased Services (Packaged Applications)

Custom Services (Built/Wrapped)



Composite Application/Mashup (Packaged/Custom)



Composite Process (Packaged/Custom)

Bottom Line

What will be the technical and business drivers for strategic SOA adoption?

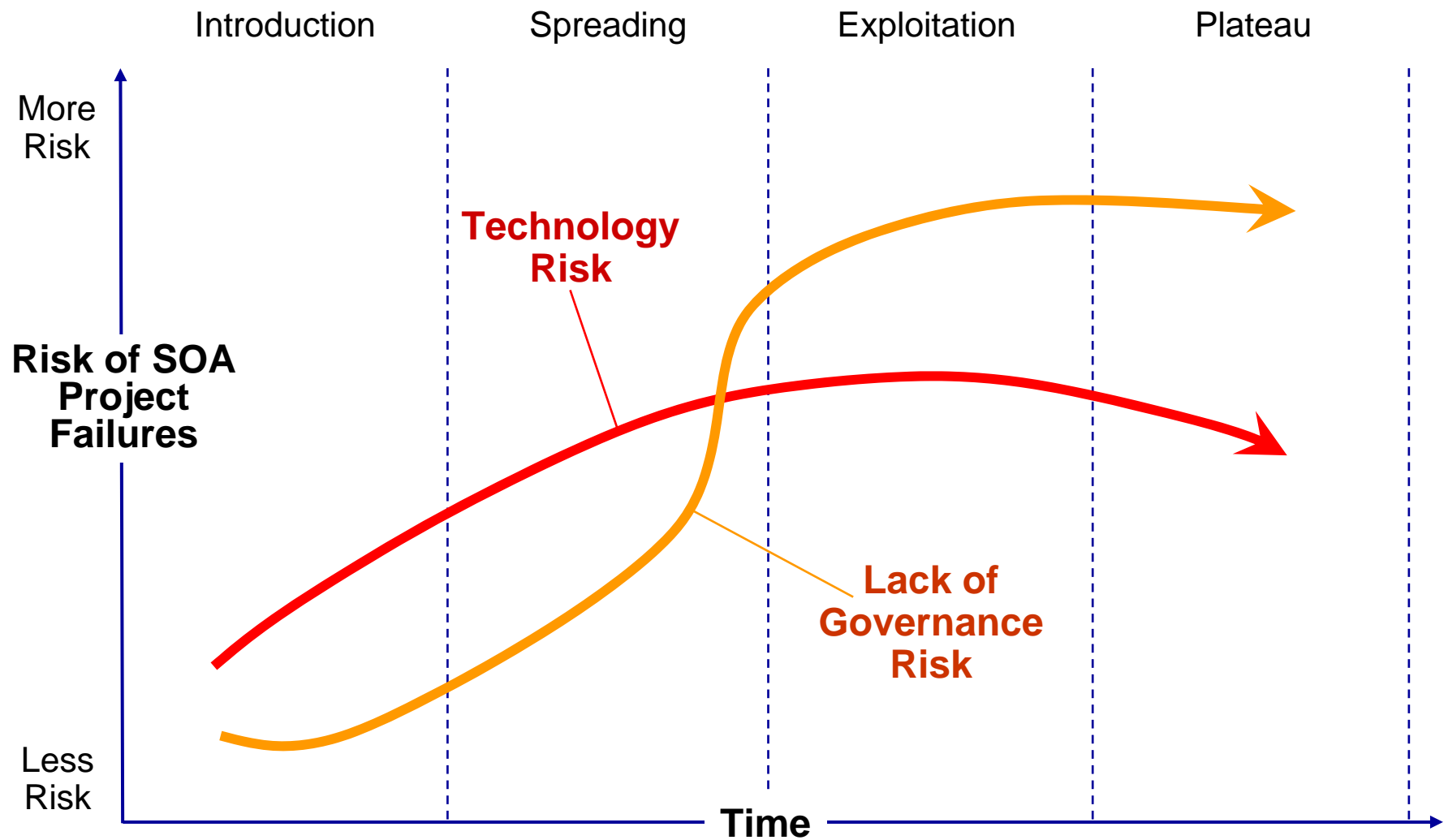
- ✓ SOA hasn't been ordered by the doctor: You can live without it.
 - SOA adoption should be justified by balancing (certain) costs and (potential) benefits.
- ✓ However, most organizations will be forced to SOA by their packaged-application vendors.
 - Investigate the SOA strategy of your packaged-application vendors and plan for a gradual adoption.
- ✓ SOA services and applications will be multisourced. SaaS and SOA go hand in hand.
 - If you're planning for SaaS, you need to plan for SOA as well (and possibly vice versa).

Stages of SOA Adoption

	Stage 1 Introduction	Stage 2 Spreading	Stage 3 Exploitation	Stage 4 Plateau
Business Goals	Address Specific Pain (for example, Customer Portal)	Process Integration (for example, B2B)	Process Flexibility (for example, Time to Market)	Continuous Adaptation and Evolution
IT Goals	Proof of Concept	Establish Technology Platform	Leverage Services Sharing	Enterprise SOA Infrastructure
Scope	Single Application	Multiple Applications (Single BU)	Multiple Applications (Across BUs)	Virtual Enterprise
No. of Published Services*	<25	<100	<500	>500
No. of Service Consumers*	<5	<25	<50	>50
No. of Service Calls/Day*	<10,000	<100,000	<1,000,000	>1,000,000
No. of Service Developers*	<10	<20	<100	>100
Enabling Technology (cumulative)	Application Server, Portal, Adapters	ESB, WSM Integration Suite, B2B	SOA Reg/Rep BPM Policy Management	Enterprise SOA Backplane

**These figures represent typical scenarios, but they may vary considerably, depending on the specific organization's requirements.*

Why SOA Initiatives Fail: Technology or Governance?



Bottom Line

How will organizations incrementally approach large-scale SOA initiatives?

- ✓ **Enterprisewide SOA is a long journey.**
 - Plan for multiyear incremental implementation steps, but look for short- and medium-term payback.
- ✓ **At each step, additional technology and organizational capabilities must be put in place.**
 - See "Toolkit: Planning for Service-Oriented Architecture With the Gartner SOA Adoption Model," G00143726.
- ✓ **SOA success is a 50-50 business between technology and governance (and good old management).**
 - Bad technology choices can kill even the best-run SOA initiative.
 - Focus on governance from Day 1, but initially avoid "too much" governance.

The Seven Golden Rules for the Perfect First SOA Project

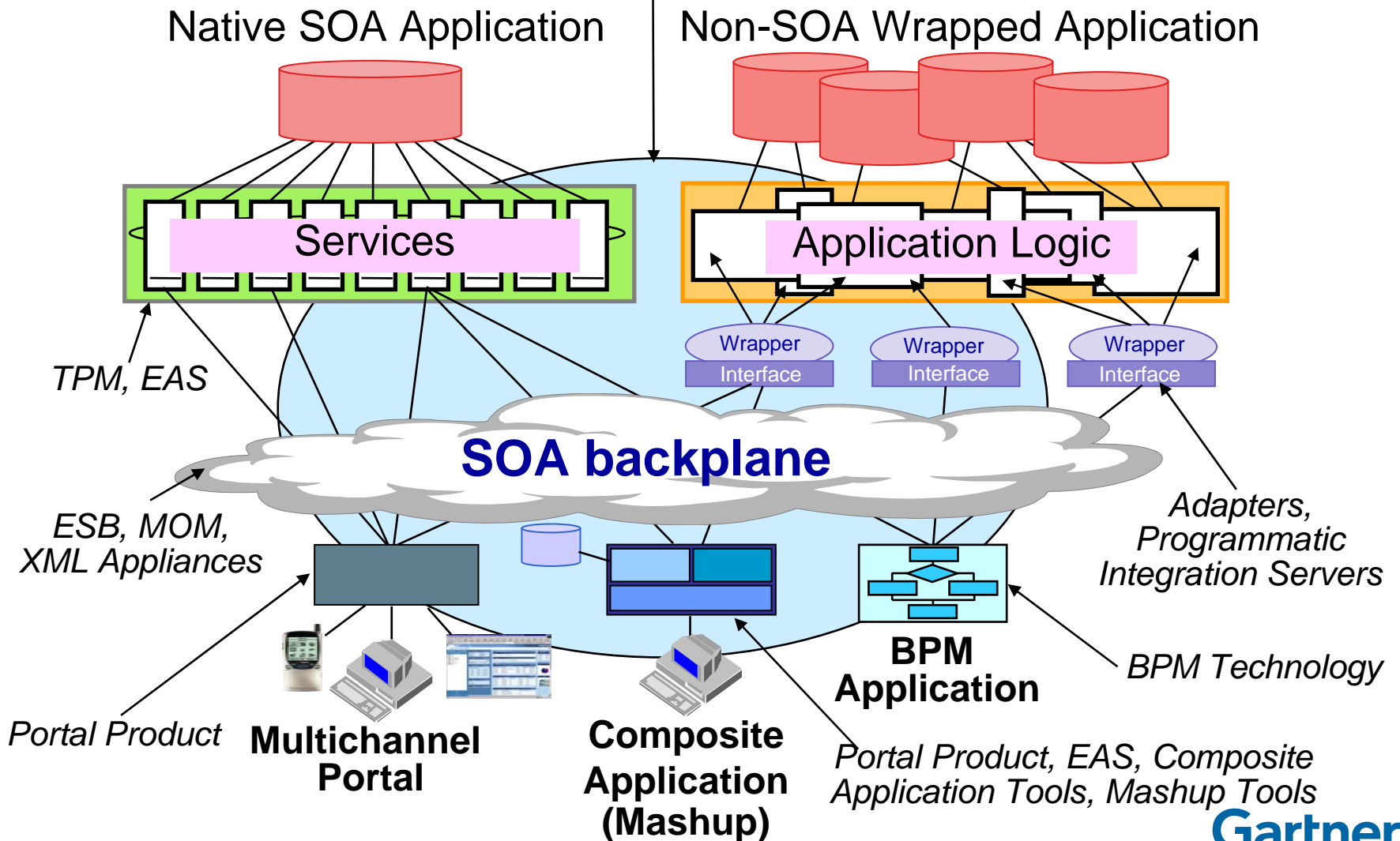
Introduction

- 1. Set Goals and Collect Business-IT Requirements**
- 2. Segregation of Duties**
 - ✓ Application design teams:
 - Service consumers
 - Service implementations
 - ✓ Infrastructure Design Team (the future SOA COE)
- 3. Joint Design/Independent Implementations**
 - ✓ Services jointly designed by application teams
 - ✓ Technically validated by the infrastructure team
- 4. Deliver Infrastructure (SOA Backplane) *First***
 - ✓ Design, implementation, testing
 - ✓ Validation against an agreed proof of concept
- 5. Deliver Services *Before* Consumer Applications**
 - ✓ Plan for services to be available and tested before relevant consumers
- 6. Test, Test and Test Again**
 - ✓ Plan for at least 25% of development effort on integration testing
- 7. Log, Log and Log Again**
 - ✓ Multiple turn-on/off logs

Service-Oriented Architecture Entails Tackling Multiple Technology Challenges

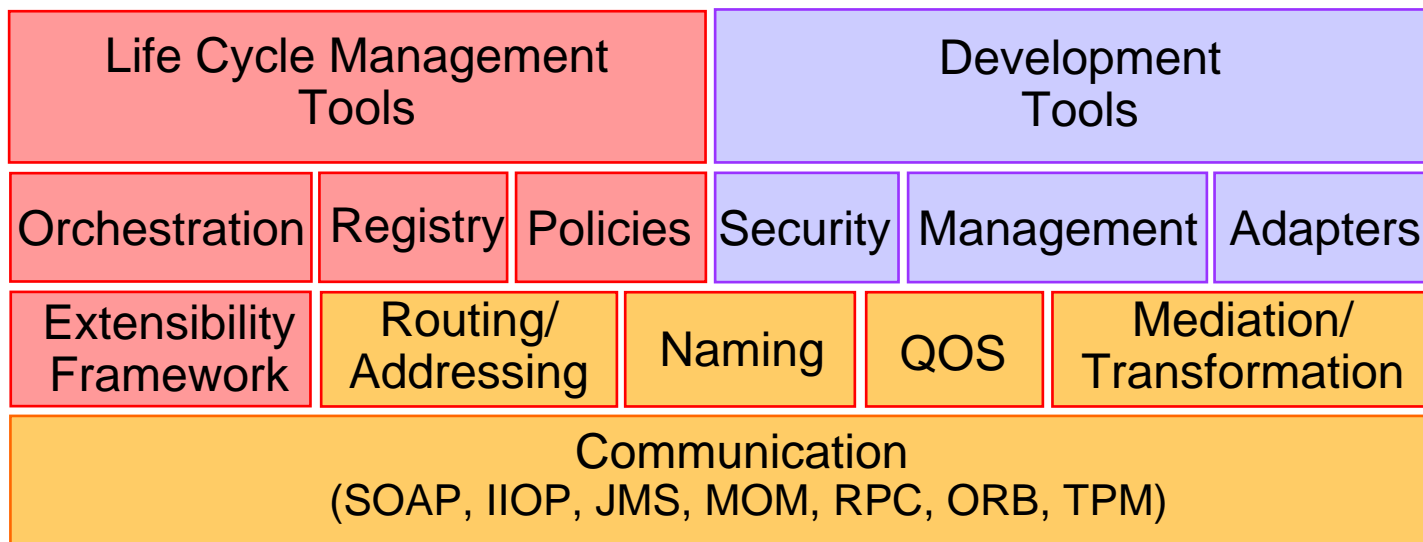
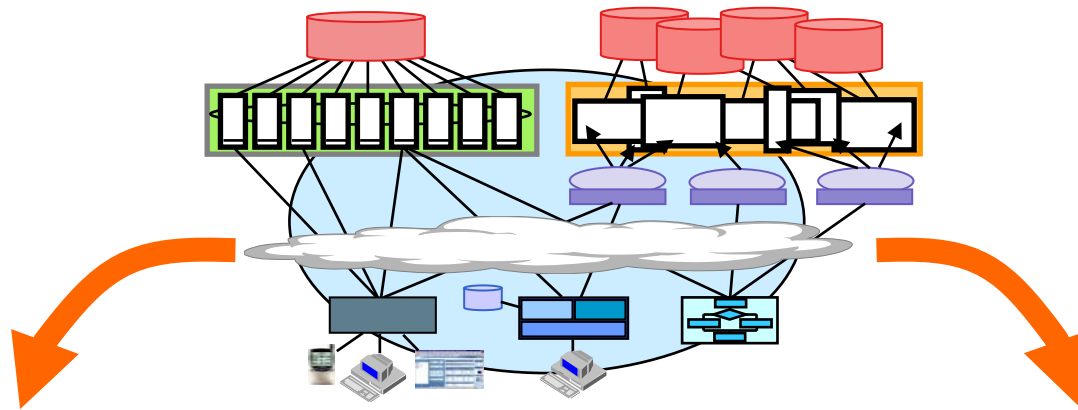
Introduction

"All-in-One" Application Platform Suite

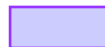


The SOA Backplane Unveiled: Web Services and More

Spreading



= Minimal Features



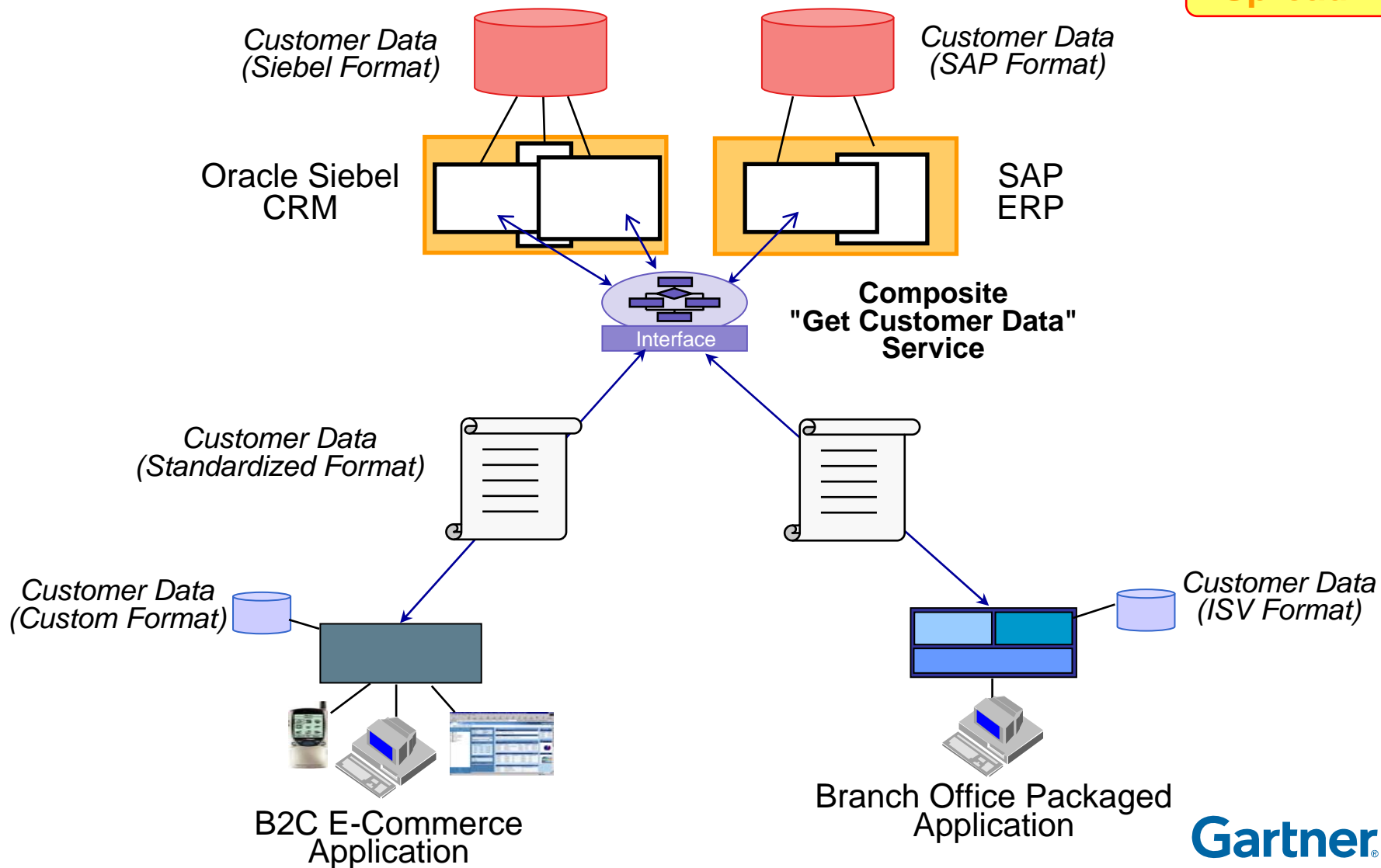
= Common Features



= Advanced Features

Standardized Business Objects Enable Interoperability and Reuse

Spreading



How Do You Know If You Are Doing It Right or Wrong?

Spreading

Goal/Focus	Examples of SOA Technical Metrics	Optimal Trend
Reuse	<ul style="list-style-type: none"> ■ <i>Number of Services Deployed</i> ■ <i>Number of Consumer Applications Deployed</i> ■ <i>Number of Services/No. of Consumers</i> ■ <i>Number of Services Shared by at Least Two Applications</i> ■ <i>Average Sharing Ratio</i> 	<ul style="list-style-type: none"> ↑ ↑ ↓ ↑ ↑
QOS	<ul style="list-style-type: none"> ■ <i>Volume of Service Requests</i> ■ <i>Number of Requests per Service</i> ■ <i>Service Request Response Time</i> 	<ul style="list-style-type: none"> ↑ ↑ ↔
Cost Reduction	<ul style="list-style-type: none"> ■ <i>Number of New Services Developed per Each New Consumer Application</i> ■ <i>Time to Deployment for New Consumer Applications</i> ■ <i>Cost of Application Maintenance</i> 	<ul style="list-style-type: none"> ↓ ↓ ↓

How Do You Enforce Sharing of Services?

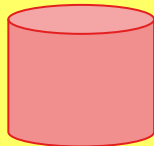
Exploitation



Service Definition Process



Standardized Business Objects



Service Registry and Life Cycle Management Tools



Reward Policies

Mainstream



***Shareable Services
"Chasing" Team***

Aggressive

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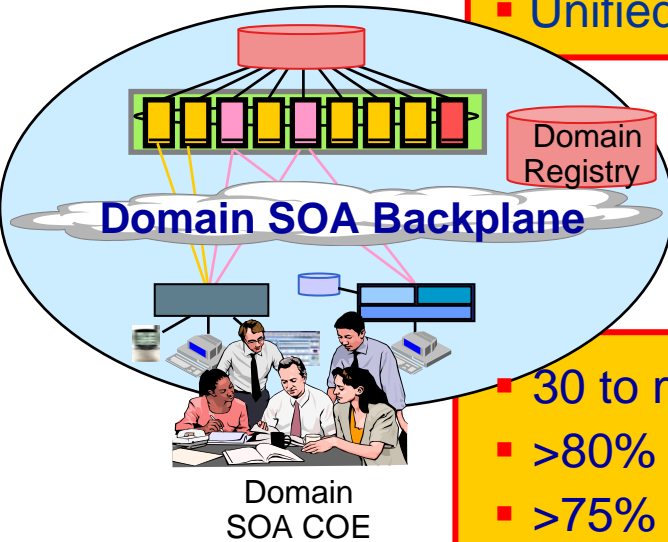
SOA Domain: The Key Conceptual Enabler for Federated SOA

Exploitation

Definition

- Related set of consumers and services
- Single business ownership and span of technical management
- Single SOA center of excellence
- Common set of governance processes
- Unified domain SOA backplane (at least logically)
- Unified domain service registry (at least logically)

SOA Domain



Typical Characteristics*

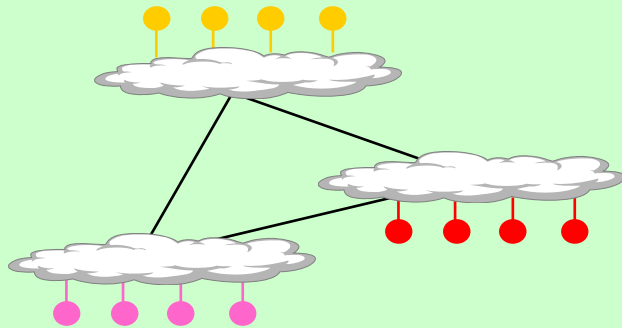
- 30 to more than 300 services (depending on domain scope)
- >80% of service invocations are intradomain
- >75% of service consumer apps call only intradomain services
- Up to 35% of domain services shared by multiple consumers
- Up to 75% of domain services needed by a new domain application are already available

*Figures are indicative of a mature domain in which most required consumer applications and service providers have already been implemented.

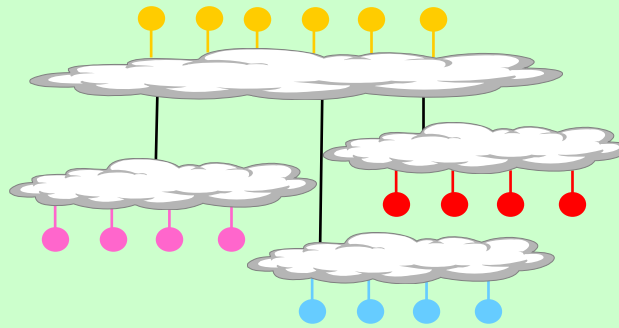
Federated SOA Backplane Topologies

Exploitation

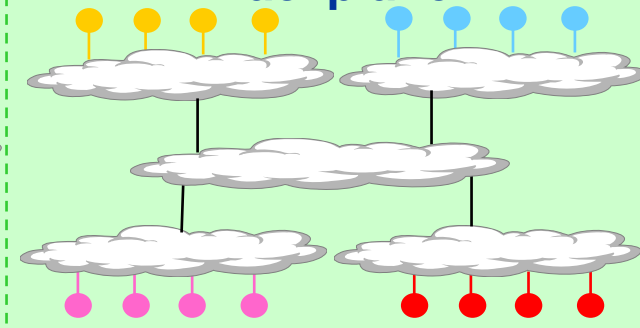
Point-to-Point



Uber-SOA Backplane



Intermediary SOA Backplane



Characteristics:

- SOA backplanes connect to each other via point-to-point links.
- Each link can be implemented using different protocols.

Pros:

- Simple to implement.
- Low cost.

Cons:

- Accountability/responsibility.
- Scalability.

Best when:

- Small number of SOA backplanes.
- Semiautonomous, peer domains.

Characteristics:

- One specific domain SOA backplane also acts as a central "broker" linking all the other backplanes.

Pros:

- Simple to implement.
- Well-defined responsibility.

Cons:

- Risk of uber-backplane overload.
- Security/privacy.

Best when:

- One large domain and multiple smaller domains.
- Hierarchical company organization.

Characteristics:

- Each SOA backplane links into a central, enterprisewide backplane supporting only interbackplane mediation (routing, transformation).

Pros:

- Well-defined responsibility.
- Noninvasiveness.

Cons:

- Higher costs.
- Single point of failure.

Best when:

- Large number of SOA backplanes.
- Semiautonomous, peer domains.

Coordinating Multiple SOA Centers of Excellence

Exploitation

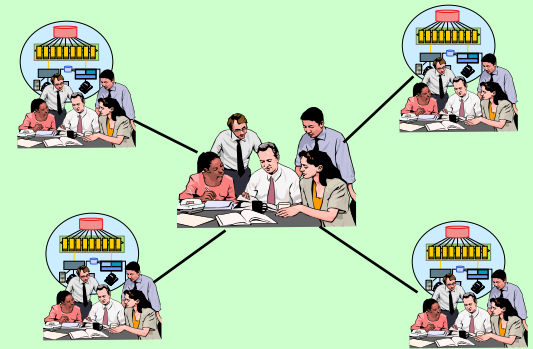
Virtual



Hierarchical (Uber-COE)



Mediator



Characteristics:

Each SOA COE is independent, but there is a form of coordination to agree on a common set of technologies, standards and governance processes.

Pros:

- Technically noninvasive.
- Minimal organizational impact.

Cons:

- Vaguely defined responsibilities.
- Lowest common denominator approach.

Best when:

- Small number of SOA COEs.
- Semiautonomous, peer domains.

Characteristics:

One domain SOA COE drives other COEs through recommendations for standards, technologies, products and governance and by providing support.

Pros:

- Well-defined responsibilities/roles.
- Minimizes technical and governance processes variations.

Cons:

- Risk of political resistance.
- Conflicting priorities for the uber-COE

Best when:

- One large domain and multiple small domains.
- Hierarchical company organization.

Characteristics:

A dedicated Enterprise SOA COE mediates between COEs by reconciling standards and by providing an interdomain SOA backplane.

Pros:

- Well-defined responsibilities/roles.
- Noninvasiveness.

Cons:

- Higher costs.
- Organizational complexity and inertia.

Best when:

- Several strong and established COEs.
- Semiautonomous, peer domains.

Bottom Line

Which are the key hurdles on the way to enterprisewide SOA, and how can organizations get over them?

- ✓ Even in SOA, "Well begun is half done."

Leverage the first project to lay down the foundation for the SOA backplane, SOA governance and SOA center of excellence.

- ✓ SOA doesn't happen by magic.

Use a sound combination of "stick" and "carrot" to achieve alignment with SOA goals and principles.

- ✓ Federation is the most-natural approach to systematic, enterprisewide SOA.

Proactively adopt a federated approach to diffuse SOA benefits across the entire enterprise.