

Application Platforms for SOA and Beyond

Massimo Pezzini

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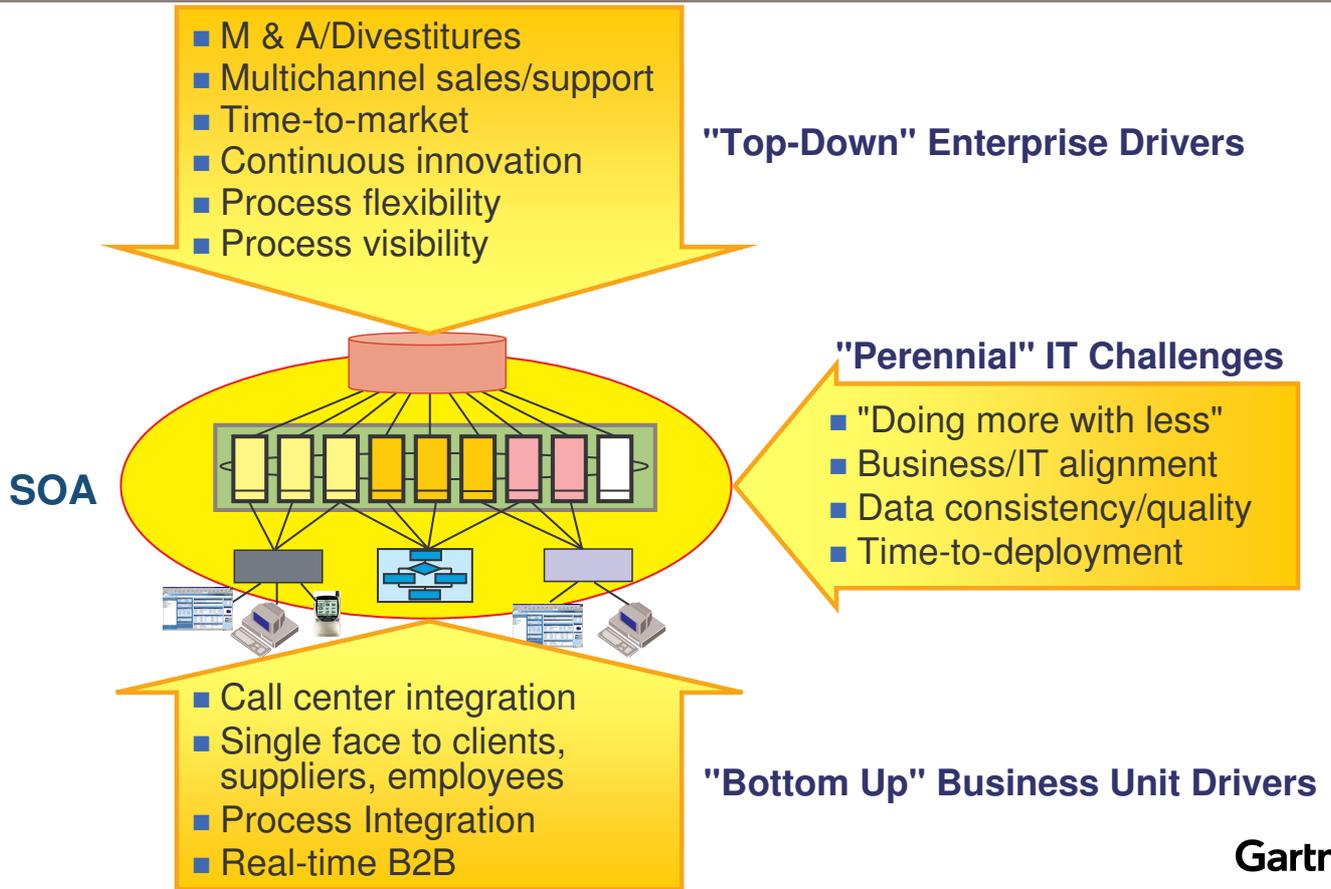
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Key Trends in Application Platforms

- Support of SOA — the most demanded feature
- Platform for SOA is not a product; products are building blocks of the platform for SOA
- Suites have replaced monolithic platforms
- Microkernel architecture expands SOA to the inside of platforms
- Open source influences vendor strategies, pricing, architecture of platforms
- Basic J2EE near commodity
- Java and .NET remain the two dominating alternatives
- Innovation in programming models: Grid, XML, Complex Events, Scripting

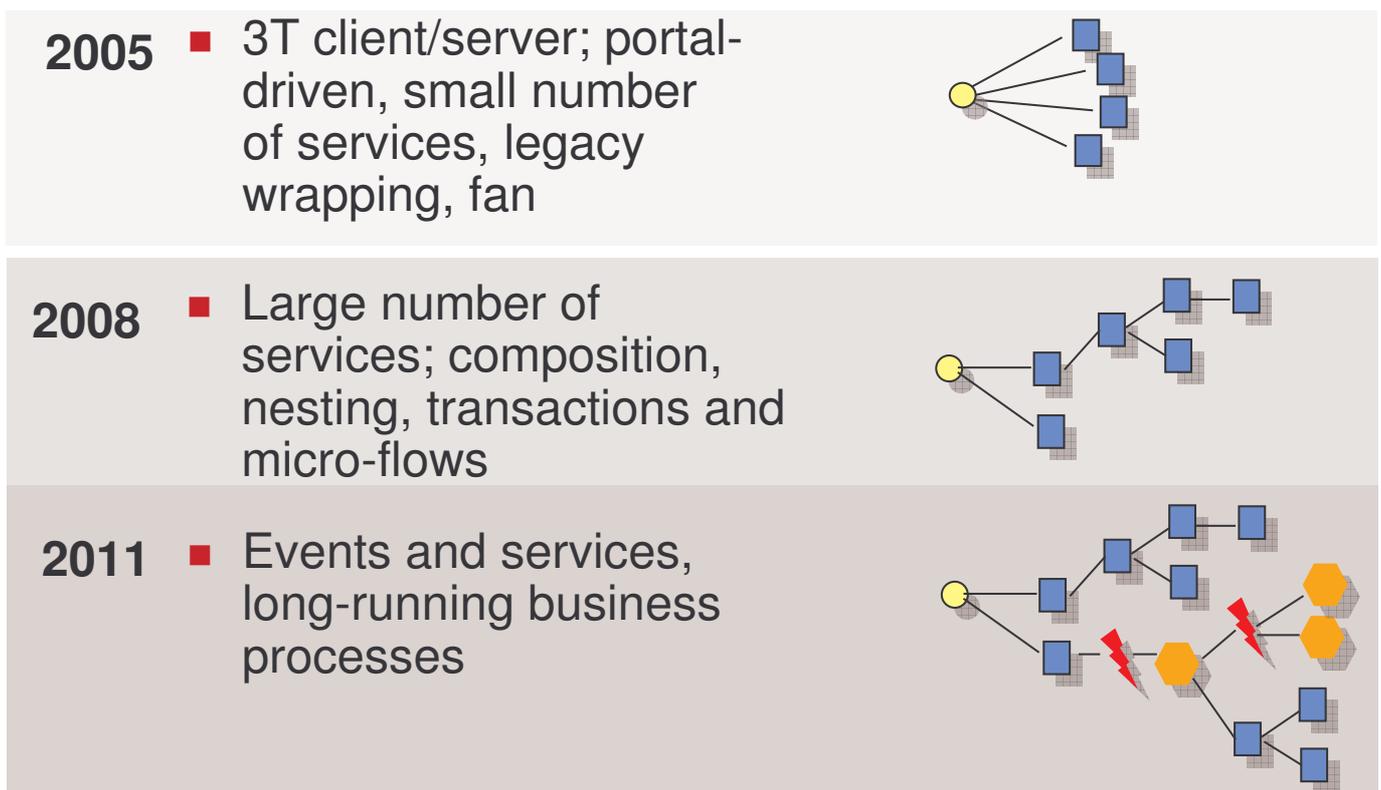
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Why Service-Oriented Architecture (SOA): Business Drivers Prevail Over IT Drivers



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Platform for SOA Must Scale From Simple to Complex



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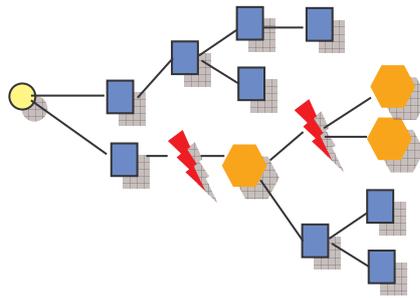
Platform for SOA Must Support Multichannel, Multiprotocol, Metadata-Based Infrastructure

Diverse Clients



- Other Services
- Intelligent Clients
- Event Handlers
- Batch Processes
- Browsers
- Specialized Devices
- Portals
- Integration Brokers
- BPM Managers
- DBMS

Diverse Routes



- X-enterprise (B2B)
- X-application
- X-firewall
- X-Grid
- X-Machine
- X-memory
- In-memory

Diverse Services

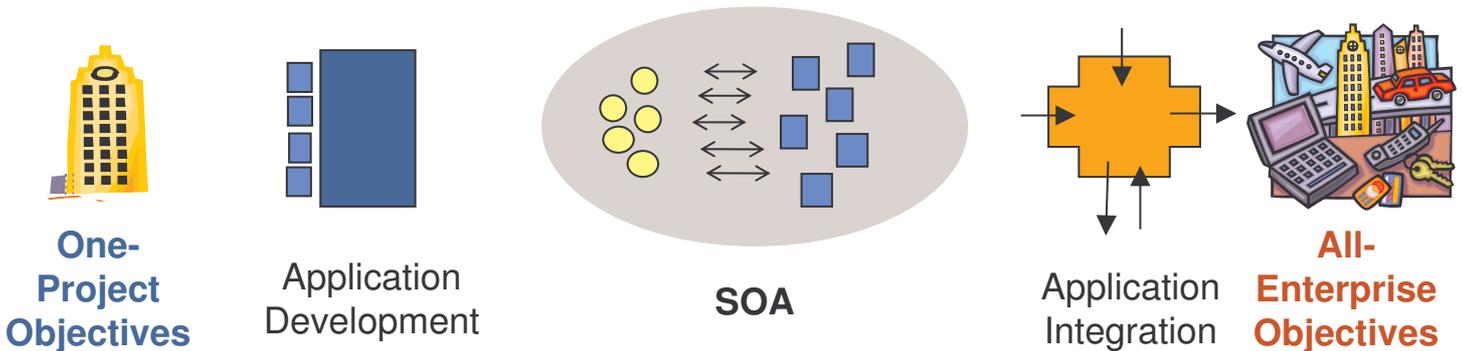


- Purpose
- Contract
- Behavior
- Integrity Level
- Security Level
- Priority Level
- Availability Level
- Resource Consumption
- Popularity/Impact
- History/Versions

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Platform for SOA Looks Different Depending on What You Are Doing

From Development to SOA From Integration to SOA

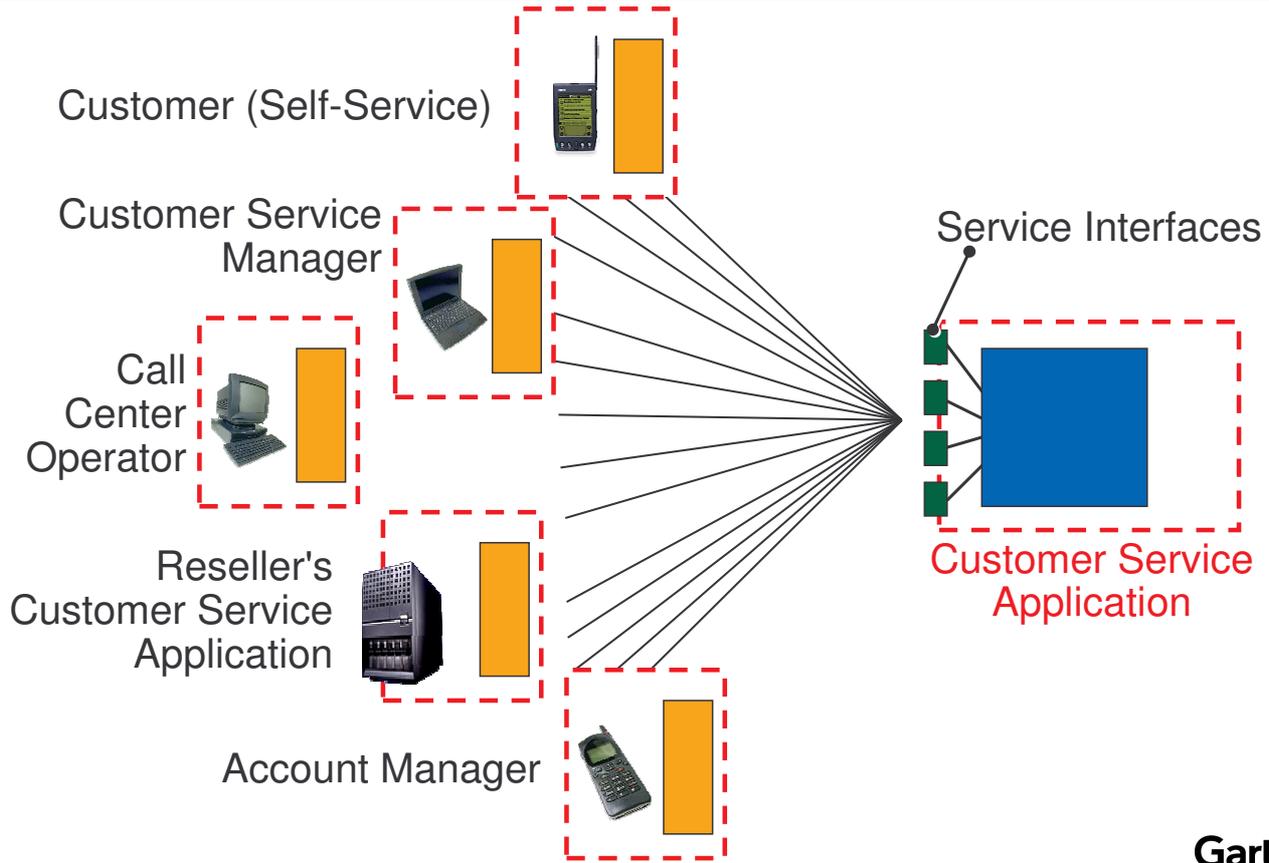


- Composite applications
- Multichannel applications
- Web application services
- Incremental engineering

- Enterprise Nervous System
- Virtual enterprise
- Semantic network

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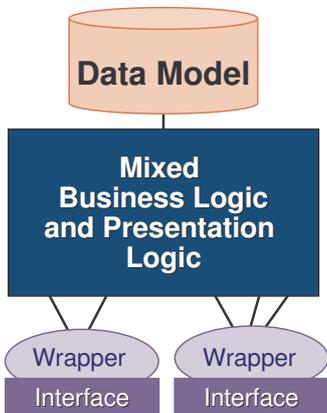
Modern Applications are Multi-channel and Service Oriented



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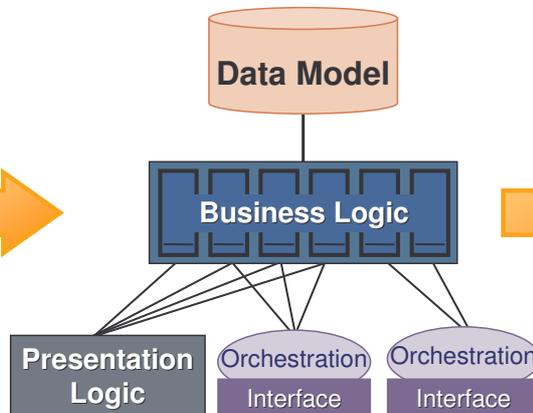
SOA-Enabling Established Applications

Wrapping
Use of screen-scraping to package "pseudo-services"



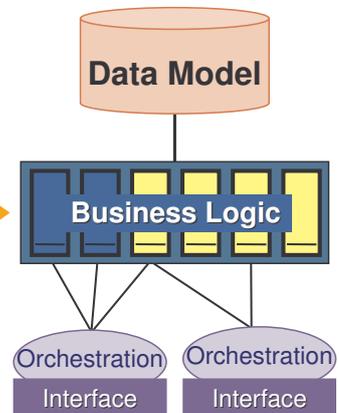
- Pros:**
- Noninvasiveness
 - Low cost/Fast
- Cons:**
- Suboptimal granularity
 - Hard to maintain

Re-engineering
Business logic is modularized and separated from presentation



- Pros:**
- Easier to maintain
 - Better performance/scalability
- Cons:**
- Invasive/high cost
 - Granularity might be suboptimal

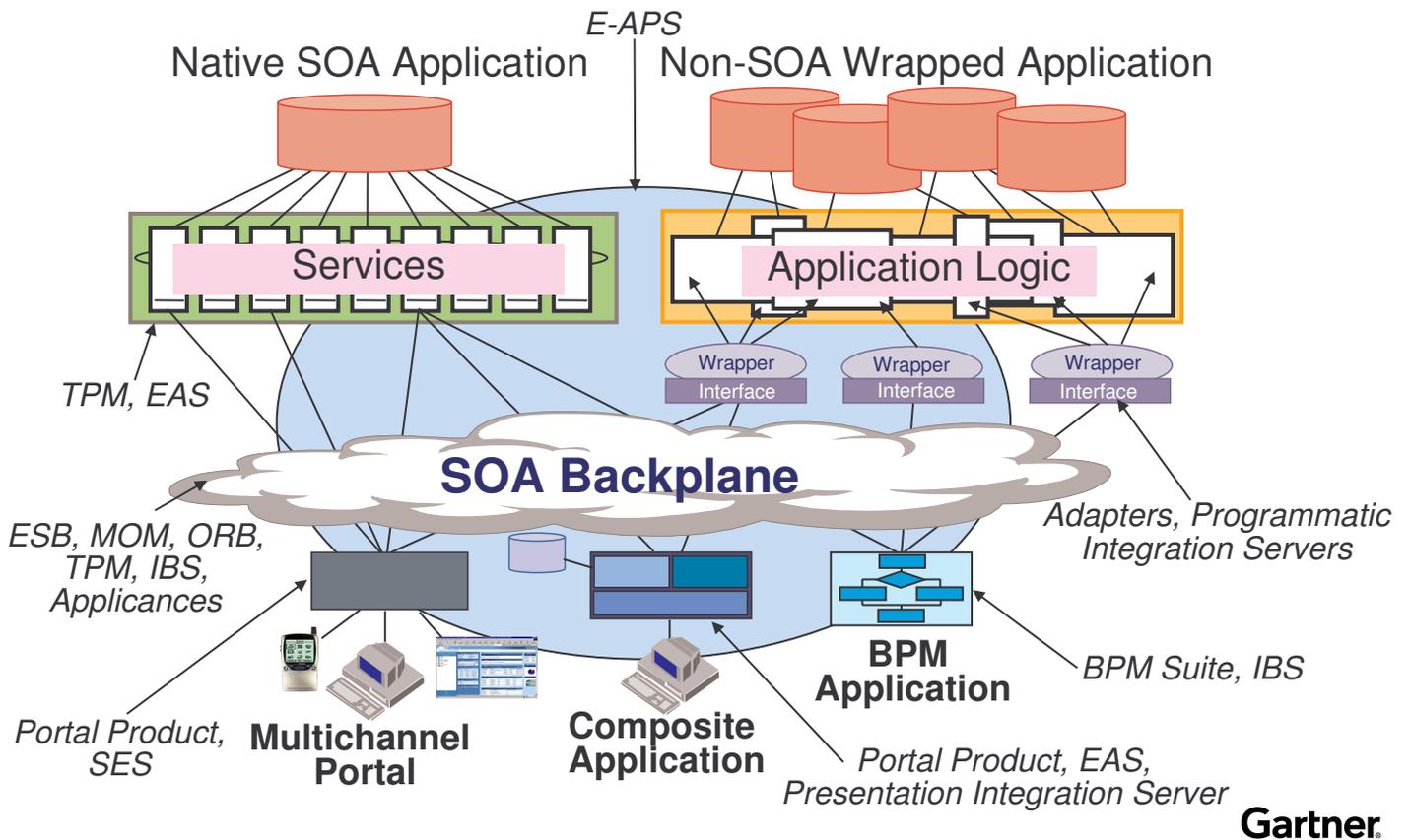
Replacement
Business logic of services is redesigned from scratch or replaces with packages.



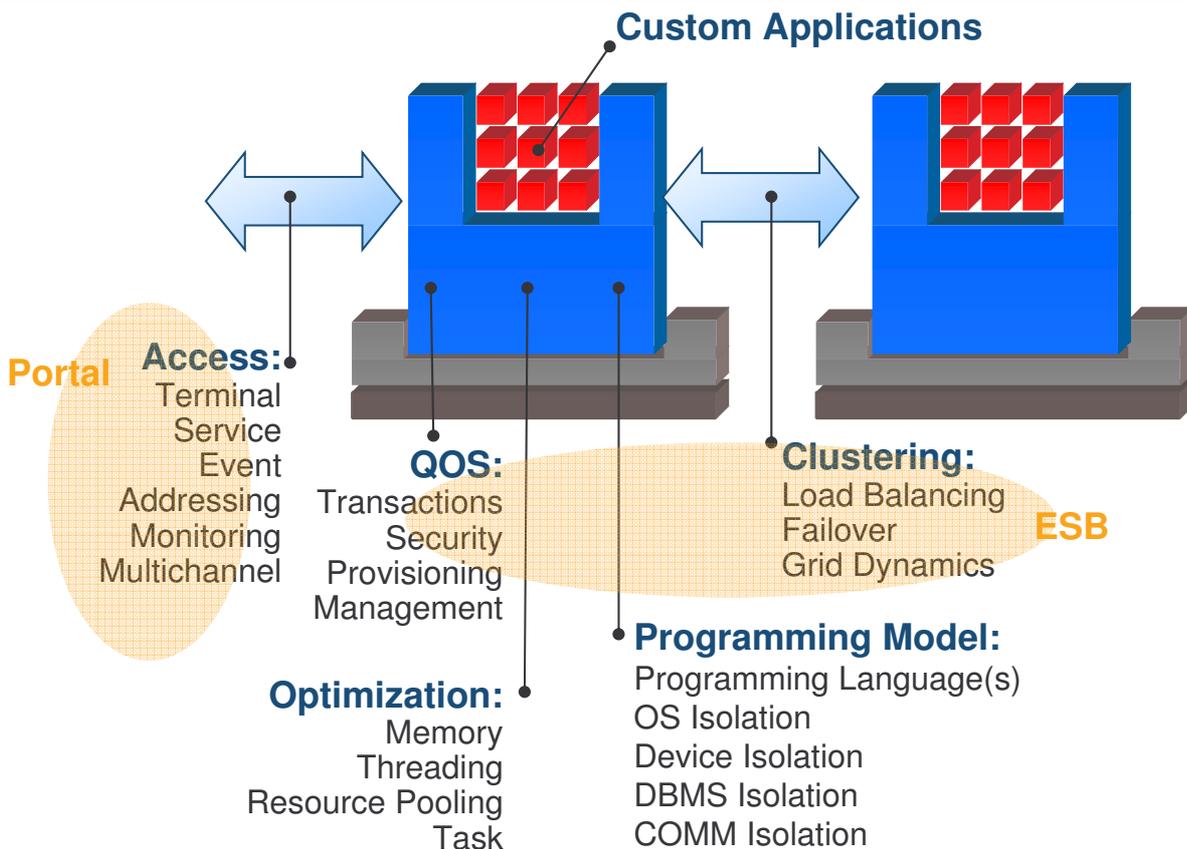
- Pros:**
- Optimal granularity/reuse
 - Enables technology change
- Cons:**
- Risk is higher
 - High cost

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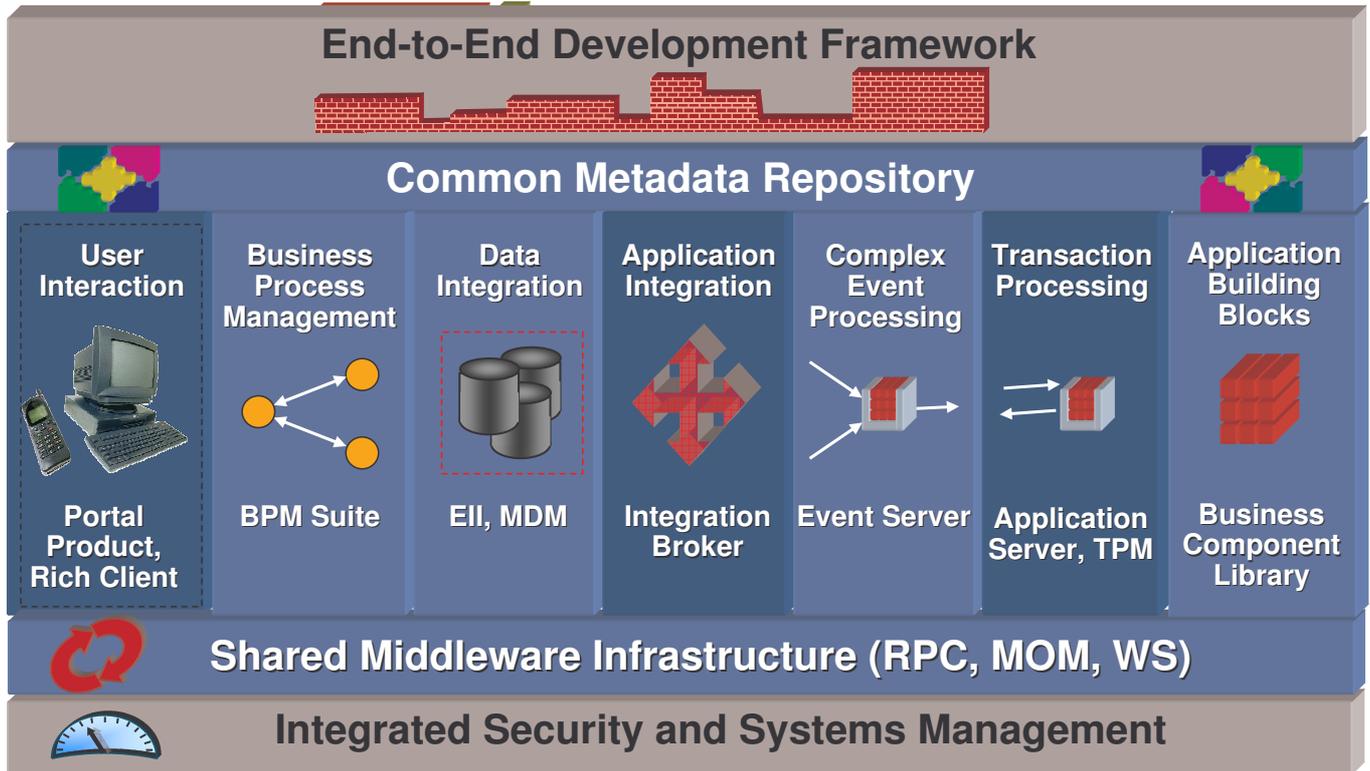
SOAP and WSDL Are Not Enough: Orient Yourself Through the Middleware Bazaar



Fundamentals of an Application Server: Container and Programming Model



Platform for Advanced SOA Will Require Expertise in Many Technology Areas



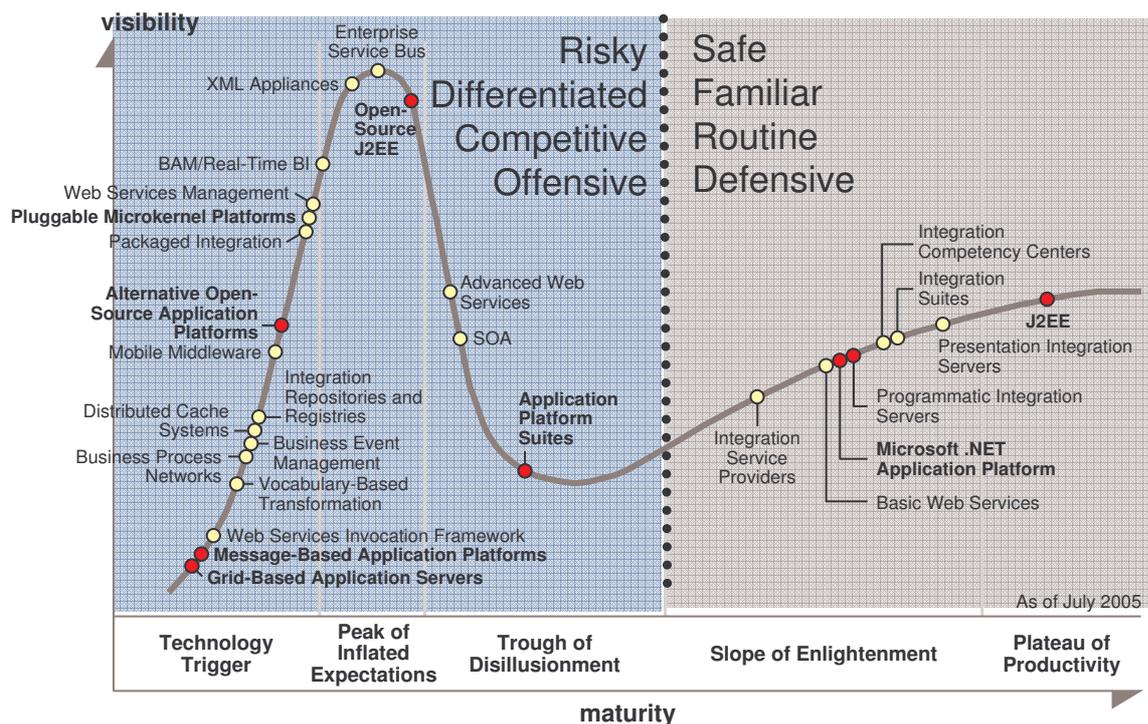
■ APS core

■ Advanced APS core

■ Extended APS

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The Platform Innovation Train Never Stops

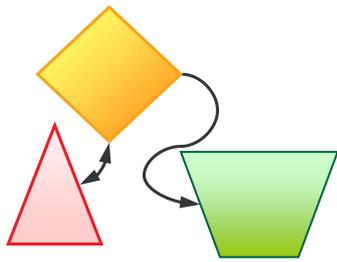


BAM business activity monitoring
BI business intelligence
J2EE Java 2 Platform, Enterprise Edition

SOA service-oriented architecture
XML Extensible Markup Language

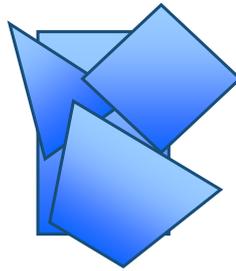
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Evolution of Software Platforms



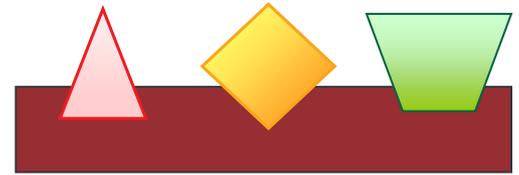
1990s

User
Assemblies



2000s

Vendor
Suites



2010s

Extensible
Suites

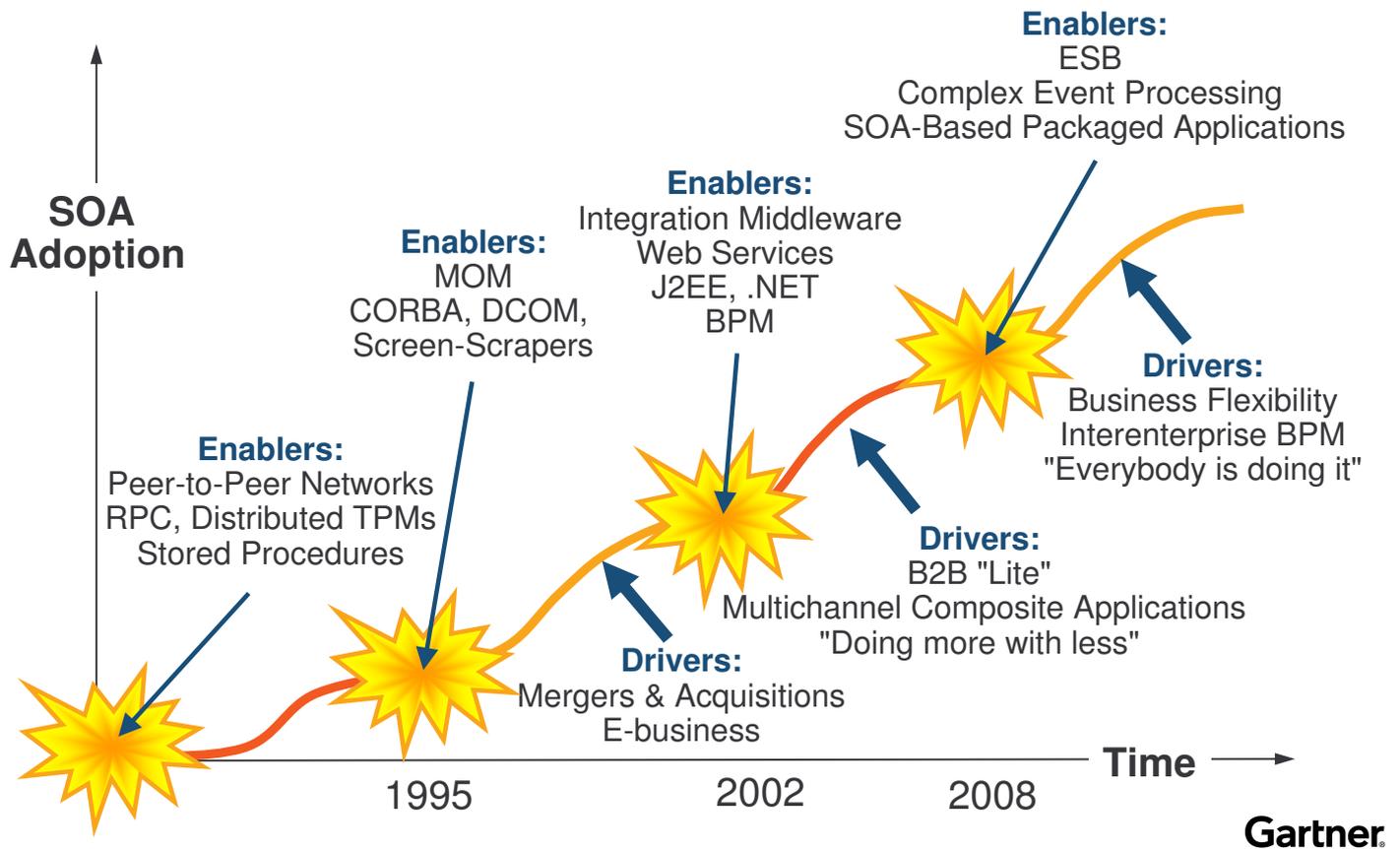
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Selecting Technology Is Not the First Step in the SOA Road Map

-  Select a project: a smaller project for the first SOA implementation, to use as a learning tool, proof of concept; more advanced projects later.
-  Form or expand a representative integration competency center
-  Identify externally notable services (business components)
-  Identify architecture pattern (client/server or event-driven)
-  Select the platform: development, integration and management technology. Look for sufficient support of multichannel, multiprotocol, metadata-based service infrastructure, productivity and QOS
-  Define service interfaces, event descriptors
-  Register and describe the services, events and their interfaces
-  Develop (or compose) service implementations and event handlers
-  Develop or update clients and event triggers
-  Test individual services, then whole processes, then whole applications
-  Deploy, monitor, diagnose, version control, manage — one service at a time, whole processes and whole applications

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Irresistible Forces Push SOA Into Mainstream Adoption



Living Happily Ever 'After SOA': The Problems You Will Discover Later

- The "Find and Change" Problem
 - Your SOA is as good as your metadata
- The Integrity Problem
 - The best-kept secret: data matters
- The Governance Problem
 - Who owns a transaction that spans the world?
- The Services as "IT Citizens" Problem
 - Coexist with other software architectures (events, monolithic, batch, P2P)
- The People Problem
 - Integration Competency Center is essential

Recommendations

- ✓ Endorse SOA to be able to respond to business and IT challenges.
- ✓ SOA is a journey — plan for multiyear, incremental implementation steps, but look for short- and medium-term payback.
- ✓ SOA is not only about Web services — build knowledge about middleware and application integration technologies as well.
- ✓ Invest multiprotocol integration infrastructure, such as an enterprise service bus
- ✓ Invest in an integration competency center as the core coordination body for SOA initiatives
- ✓ While planning for SOA, build an understanding about events — they are the two sides of the same coin.

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