

Application Platforms for SOA and Beyond

Massimo Pezzini

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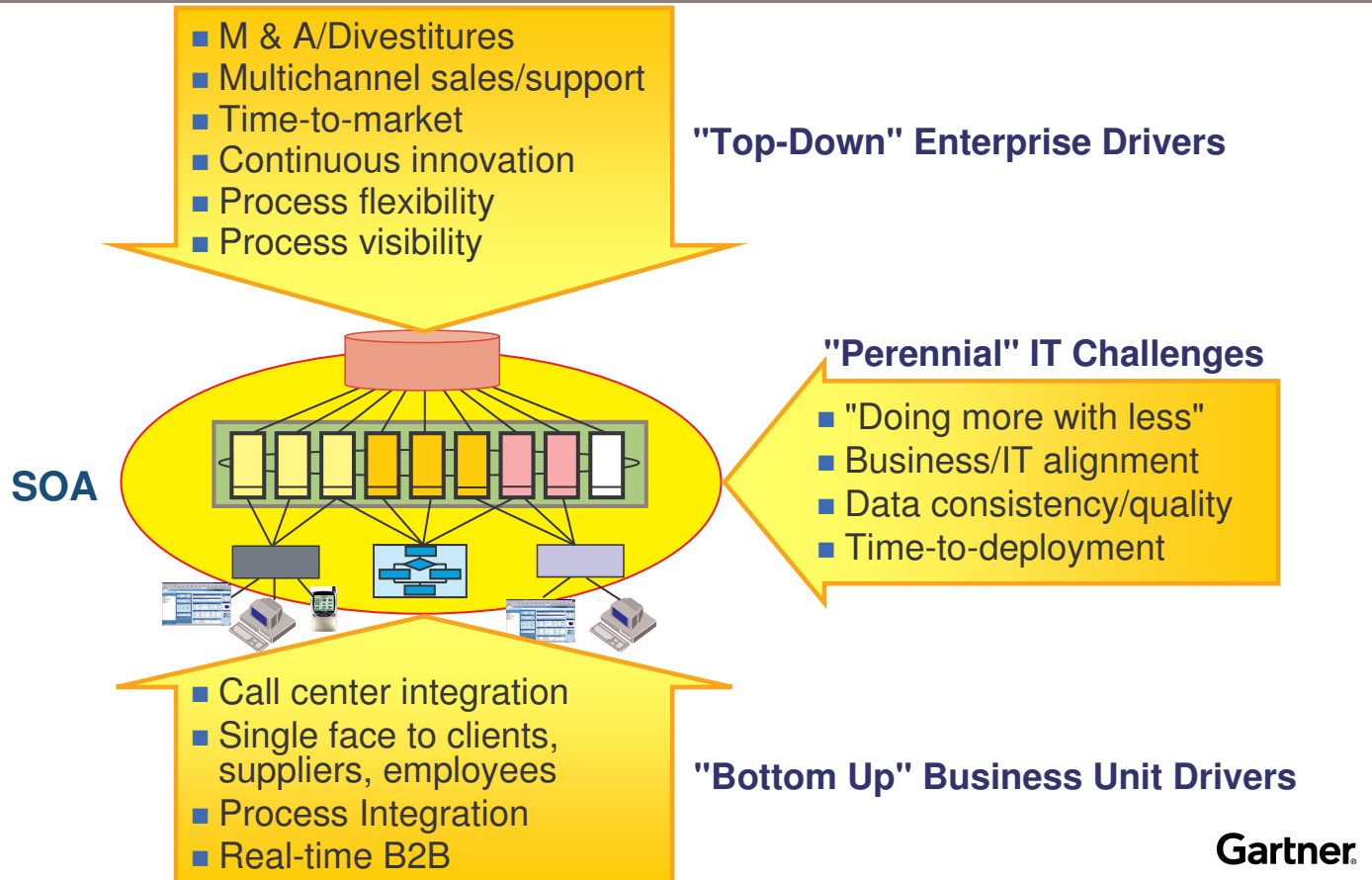
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Key Trends in Application Platforms

- 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

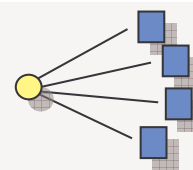
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Why Service-Oriented Architecture (SOA): Business Drivers Prevail Over IT Drivers

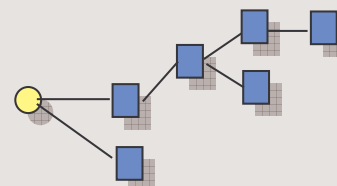


Platform for SOA Must Scale From Simple to Complex

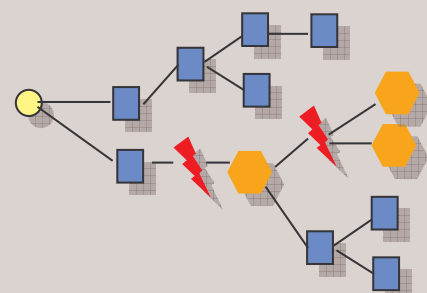
2005 ■ 3T client/server; portal-driven, small number of services, legacy wrapping, fan



2008 ■ Large number of services; composition, nesting, transactions and micro-flows



2011 ■ Events and services, long-running business processes



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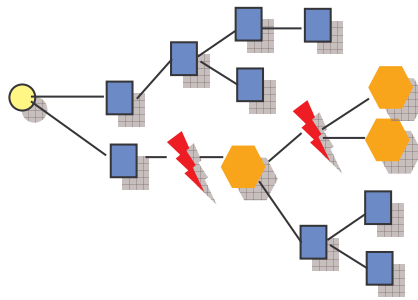
Platform for SOA Must Support Multichannel, Multiprotocol, Metadata-Based Infrastructure

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

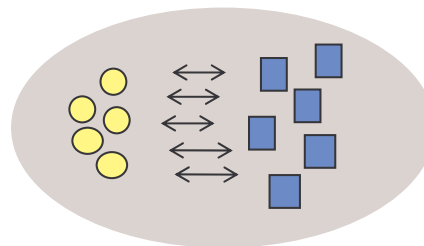
From Development to SOA



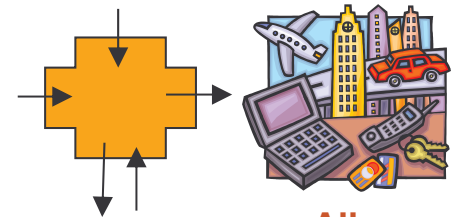
From Integration to SOA


One-Project Objectives


Application Development



SOA



Application Integration

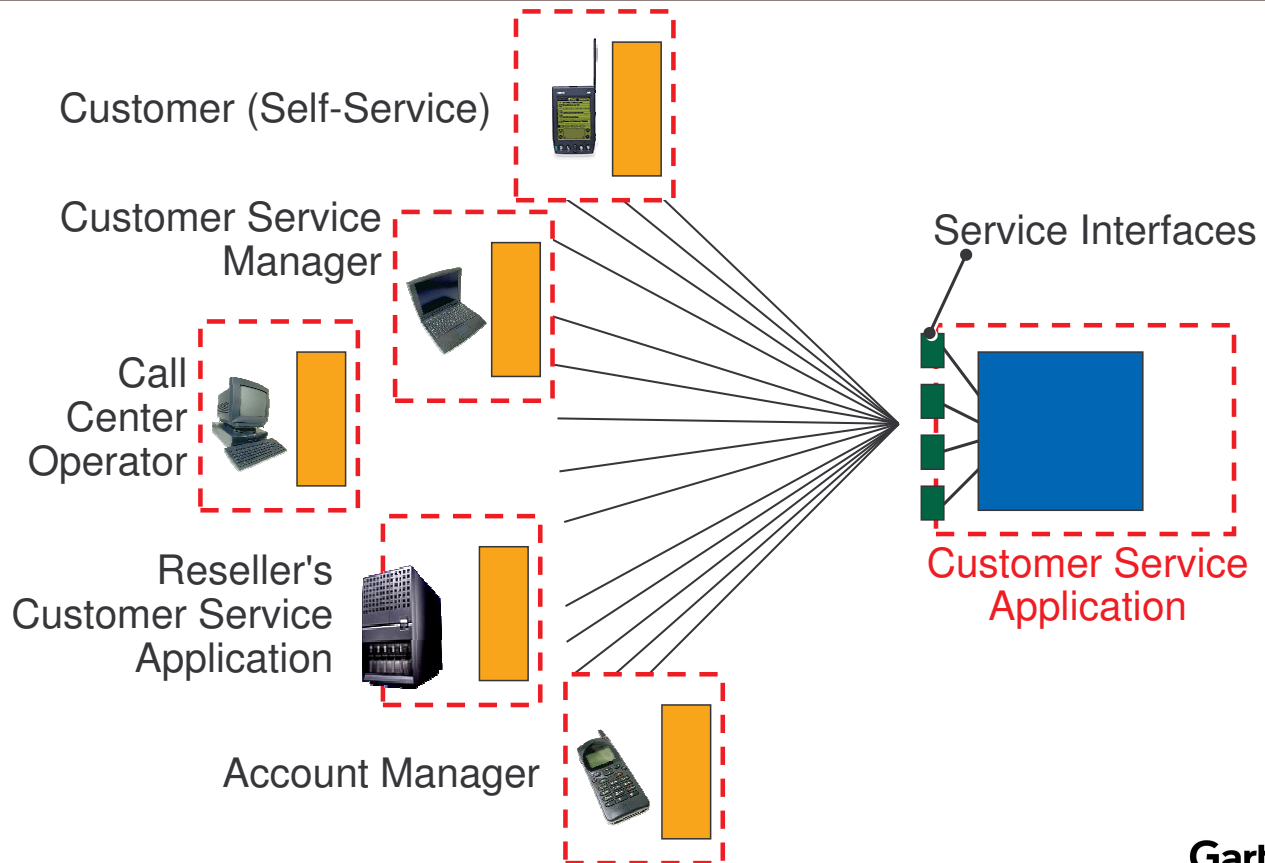
All-Enterprise Objectives

- 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

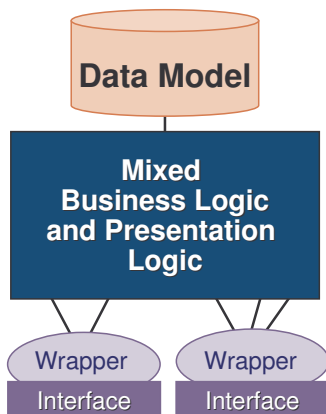


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SOA-Enabling Established Applications

Wrapping

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



Pros:

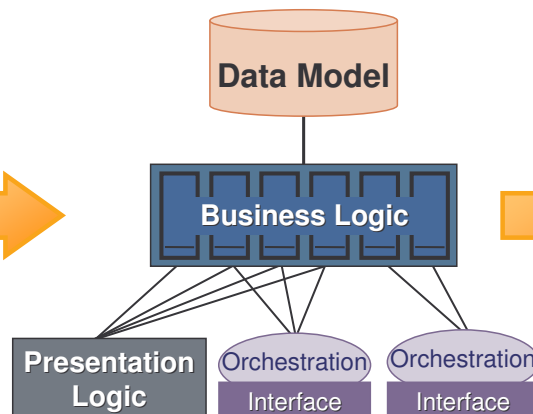
- Noninvasiveness
- Low cost/Fast

Cons:

- Suboptimal granularity
- Hard to maintain

Re-engineering

Business logic is modularized and separated from presentation



Pros:

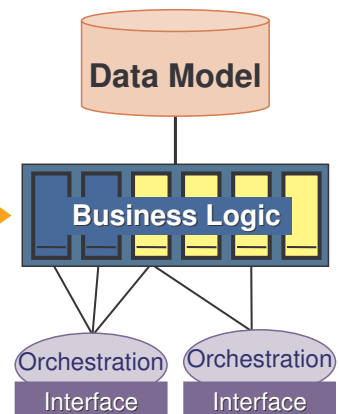
- Easier to maintain
- Better performance/scalability

Cons:

- Invasive/high cost
- Granularity might be suboptimal

Replacement

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



Pros:

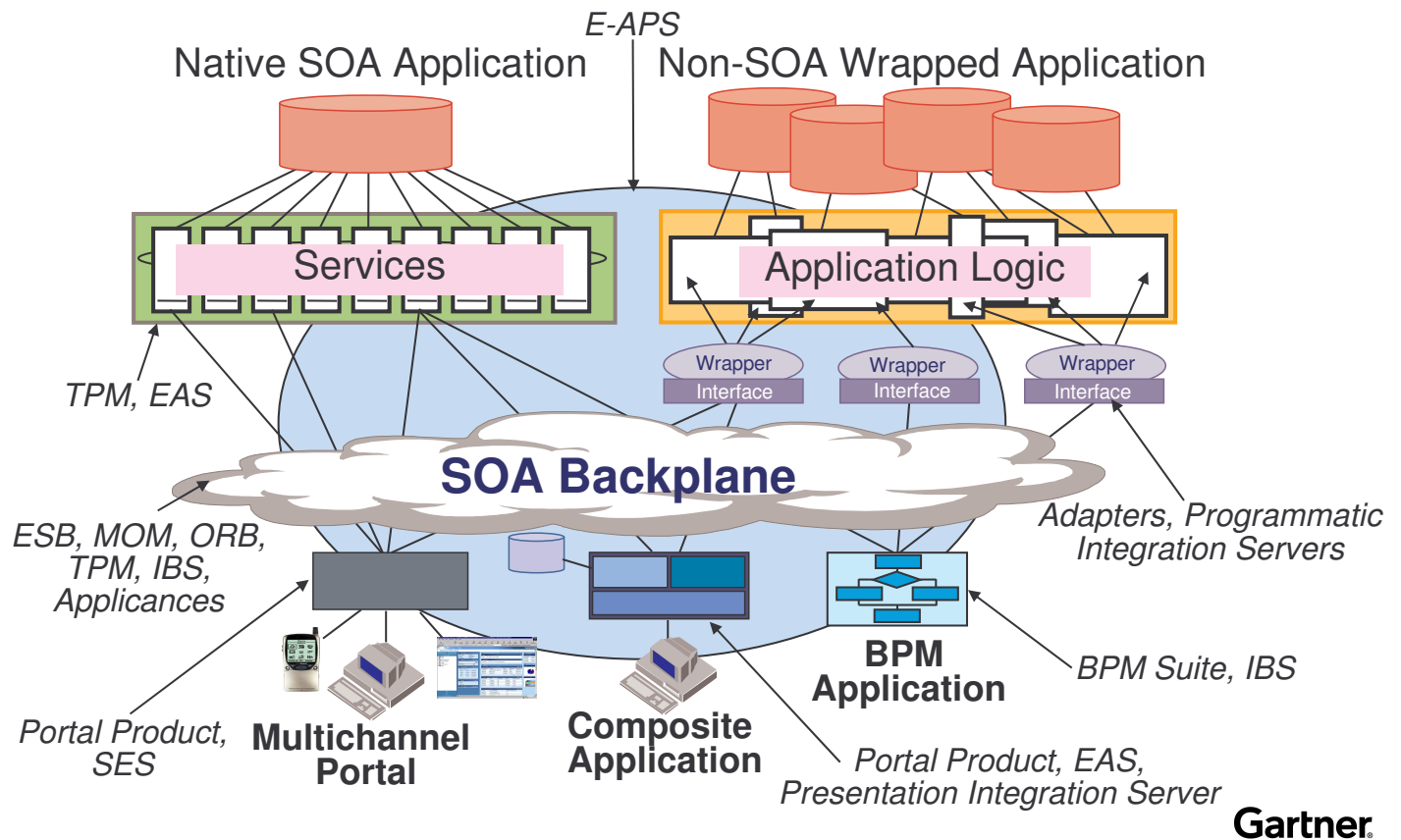
- Optimal granularity/reuse
- Enables technology change

Cons:

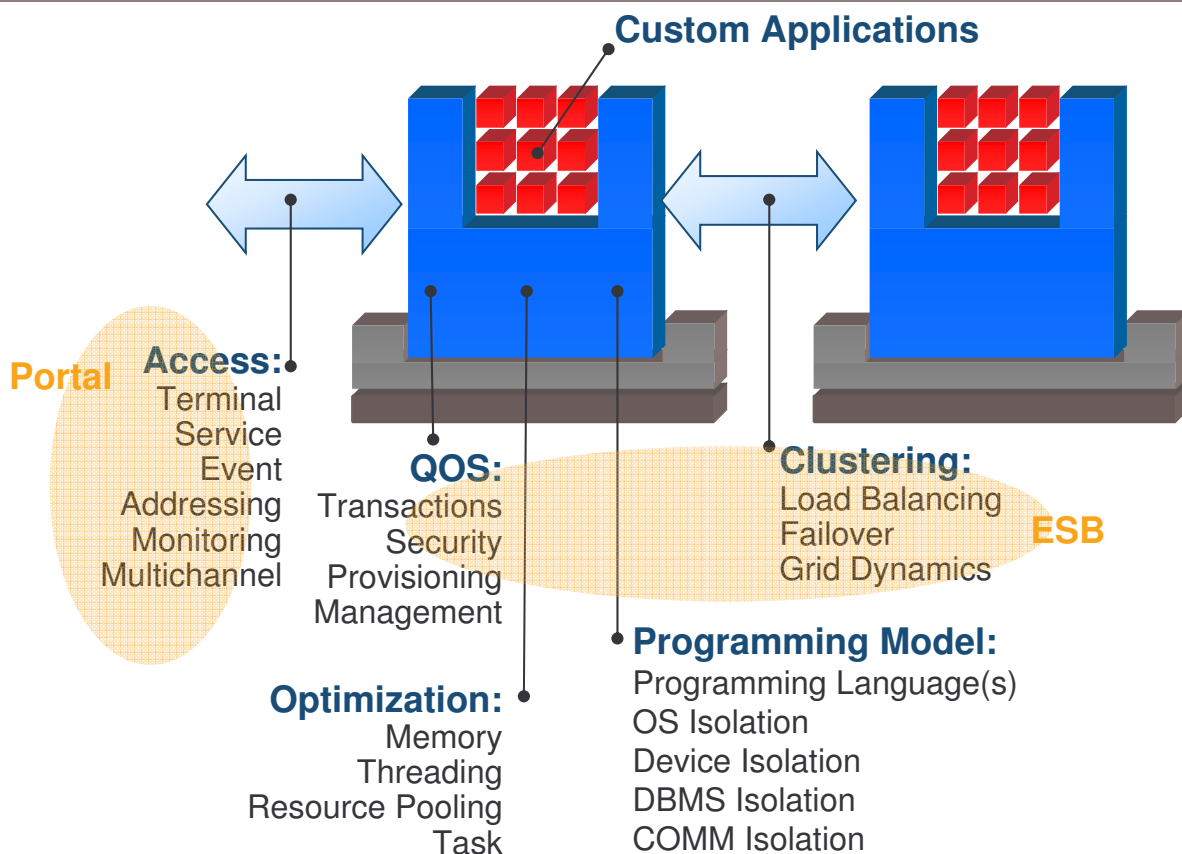
- Risk is higher
- High cost

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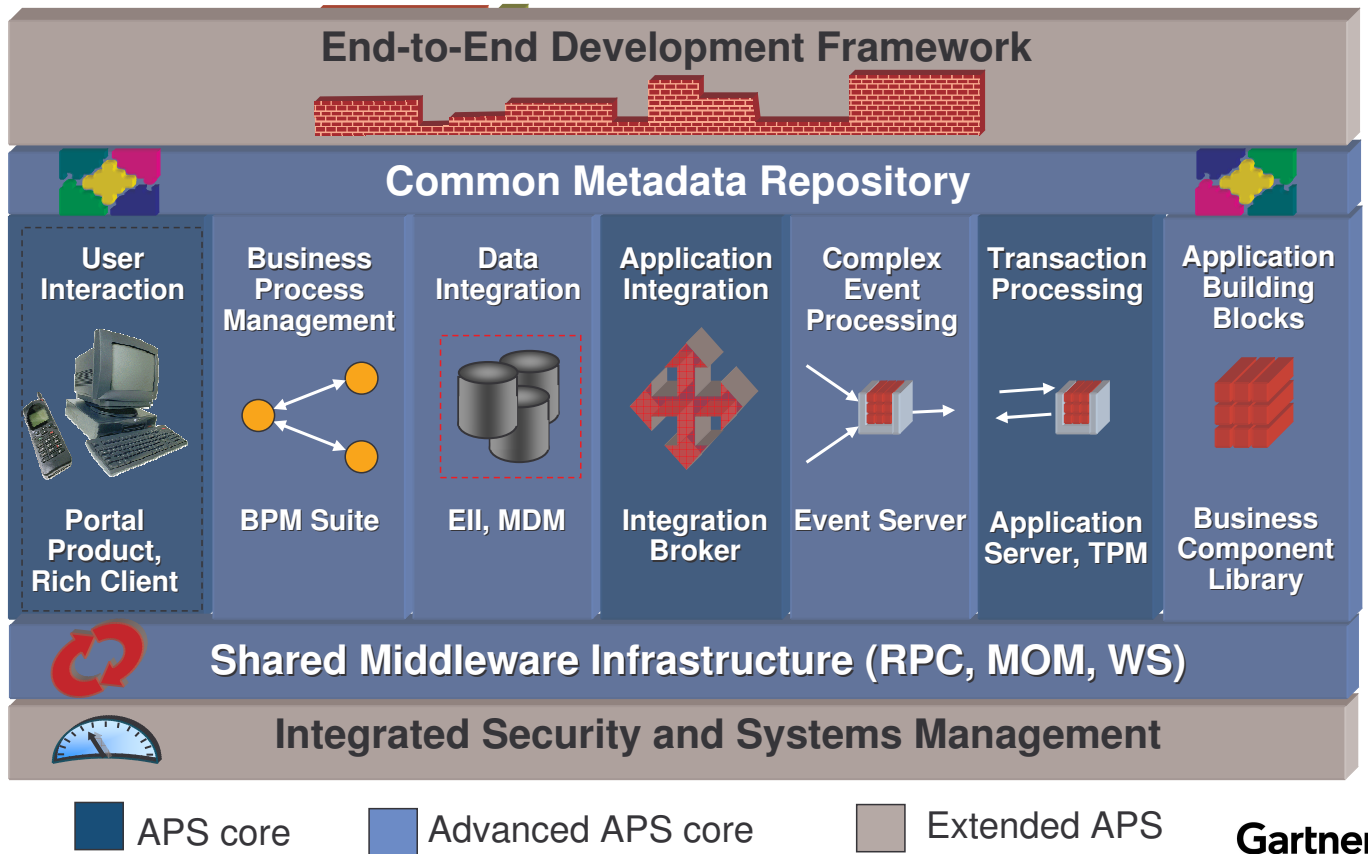
SOAP and WSDL Are Not Enough: Orient Yourself Through the Middleware Bazaar



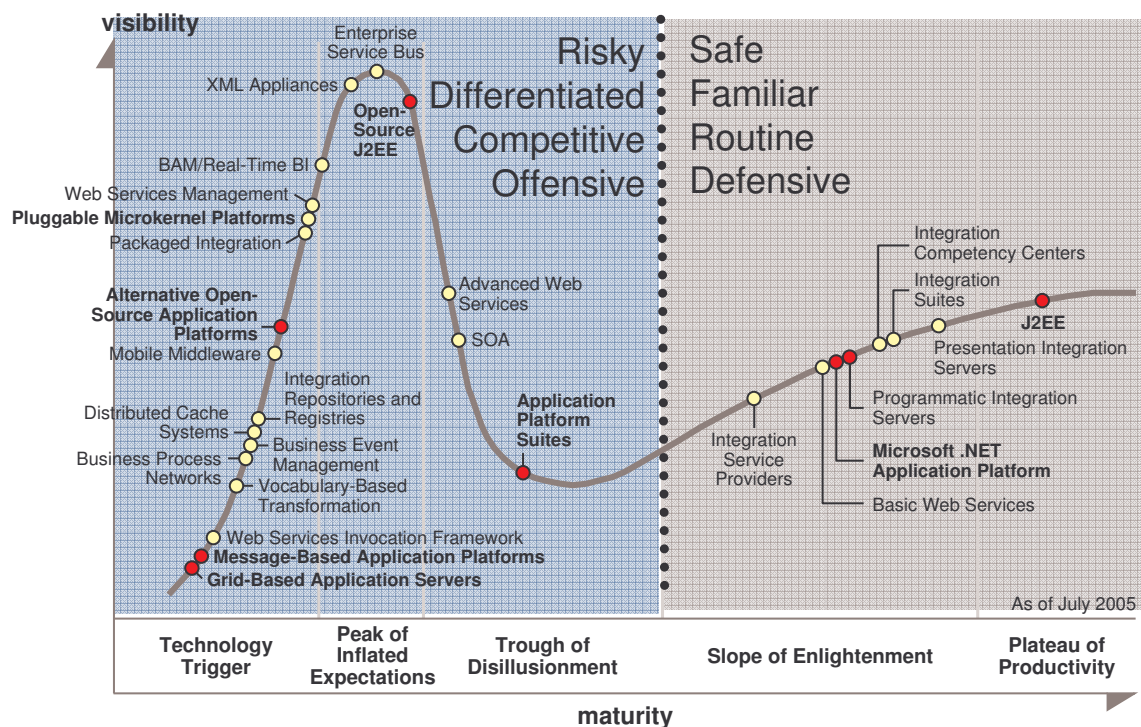
Fundamentals of an Application Server: Container and Programming Model



Platform for Advanced SOA Will Require Expertise in Many Technology Areas



The Platform Innovation Train Never Stops

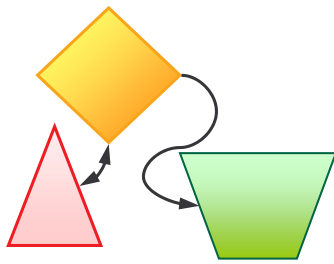


BAM business activity monitoring
BI business intelligence
J2EE Java 2 Platform, Enterprise Edition

SOA service-oriented architecture
XML Extensible Markup Language

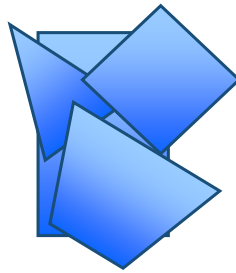
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Evolution of Software Platforms



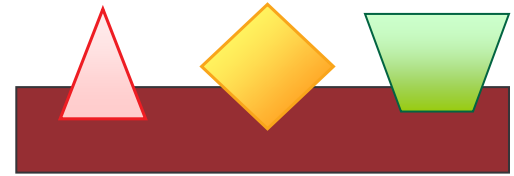
1990s

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



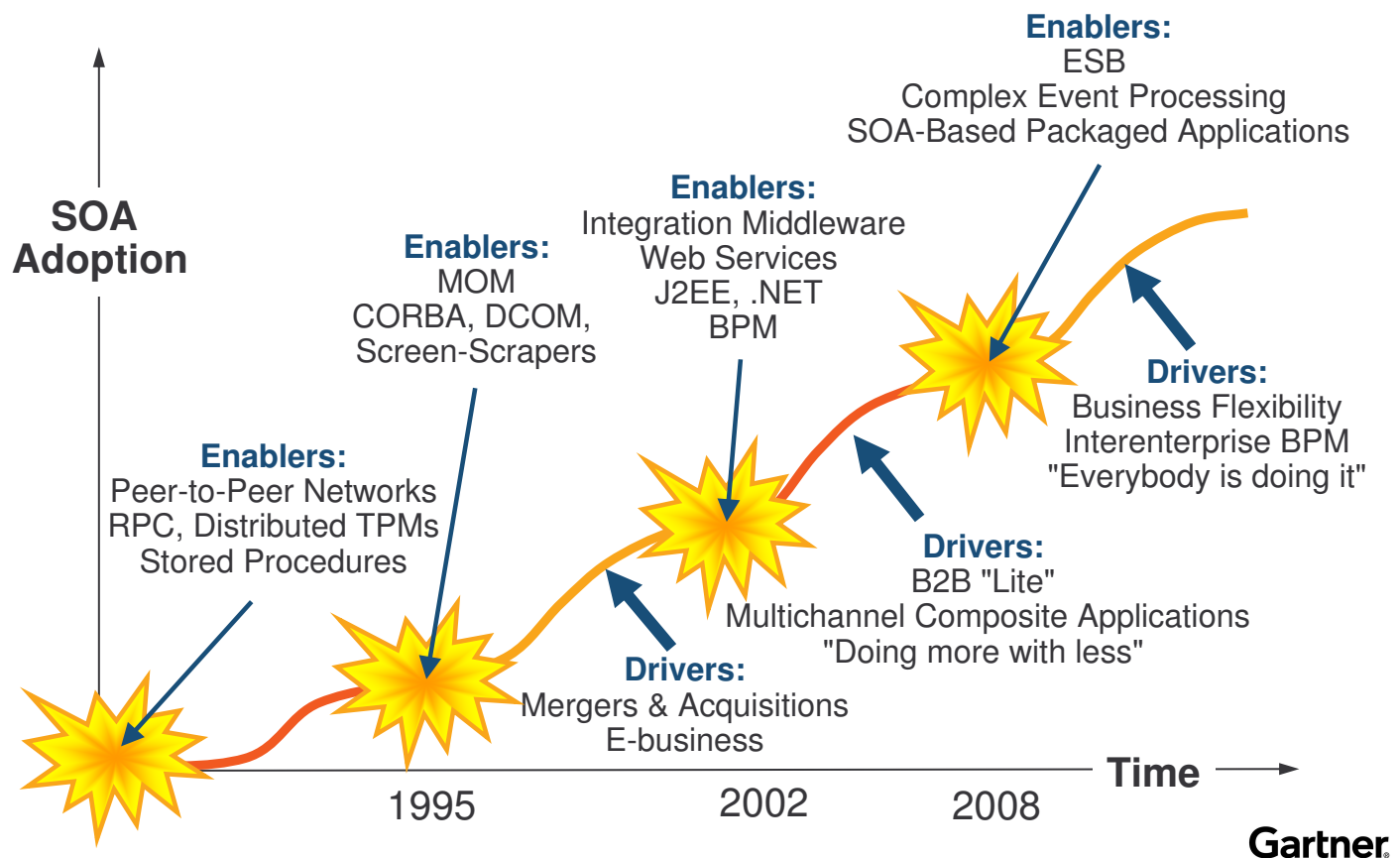
Test individual services, then whole processes, then whole applications



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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