

SOA Scenario: Patterns and Guidelines for Starting With SOA and Moving to Advanced SOA

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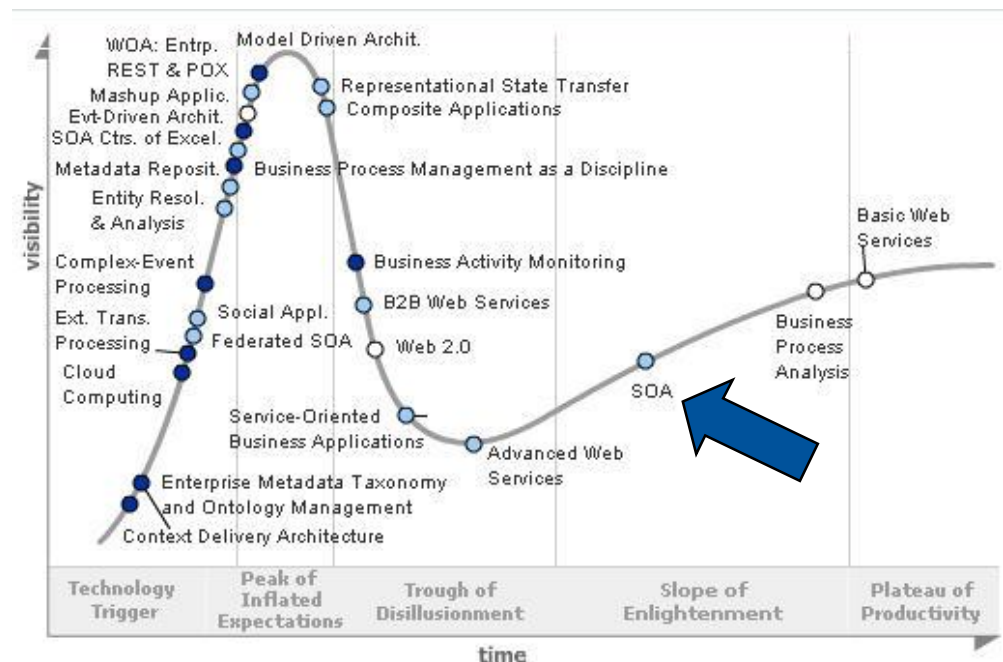


SOA – Proven Transformative Power

According to Gartner Research and 2008 SOA survey:

- Mainstream companies are gaining SOA value
 - Business agility benefits in over 60% of respondents
 - Over 50% experienced dev productivity benefits
 - Over 40% gained sharing benefits
- Some SOA success doesn't mean all SOA success
 - Still a large number of SOA disappointments
 - Not "SOA bad" but "bad SOA"
- Leaders and architects must understand SOA benefits and how to get there

SOA Emerging From Trough of Disillusionment



Plateau will be reached:

- less than 2 years
- 2 to 5 years
- 5 to 10 years
- ▲ more than 10 years
- ⊗ obsolete before plateau

From "Hype Cycle for Application Architecture, 2008"
3 July 2008 (G00159029)

Key Issues

1. What is SOA and how can it deliver value?
2. What are and will be the prevailing software patterns in SOA?
3. How does IT modernization contribute to SOA?
4. What are the emerging software development practices and their affinity with SOA?

SOA Fundamentals

- SOA is an architectural approach to building systems
- delivering 2 major categories of value
 - **Sharing** (also called leverage and reuse)
 - **Agility** (ability to change more rapidly)
- through 2 fundamental principles
 - Interface **Abstraction**
 - **Modularization**

Gartner's Five Criteria for a SOA Application

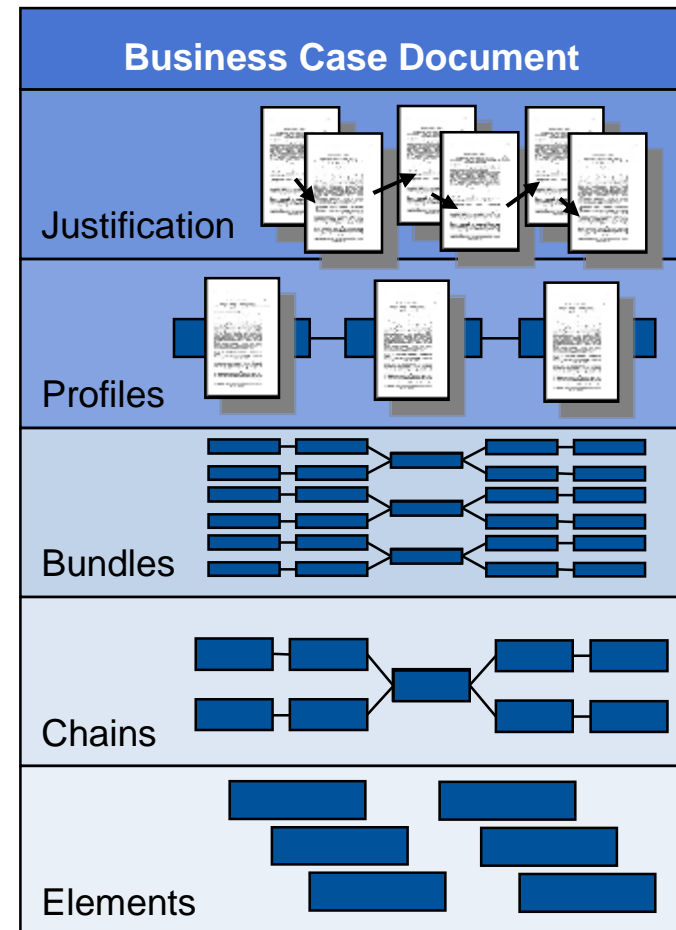
1. **Modular**
2. **Distributed**
3. **Discoverable**
4. **Swappable**
5. **Shareable**

The Gartner SOA Business Case Framework

The goal is to understand, identify and assemble SOA value information to create a business case document.

Components of the Framework

1. **Elements** (30) describe fundamental SOA value propositions and cost areas.
2. Elements are **chained** together for end-to-end **traceability**.
3. Chains are grouped into **bundles** according to the nature of the SOA project.
4. Each element has a descriptive **profile**.
5. Chains and bundles assemble relevant element profiles into SOA **justification**.



Elements Capture SOA Characteristics

Traceability

6. SOA Principles

Modular
Swappable
Shareable
Clearly Defined
Distributable

3. SOA Technology Benefits

Standardized Systems Integration
Faster Application Development
Enhanced Functionality Evolve-ability
Improved Systems Deploy-ability
Improved Systems Scalability
Better Process Visibility
Discover Functionality Retirement
IT Modernization and
Technology Refresh
Legacy Systems Extension
Enhanced Capability Sharing

5. Costs/Risks

Services Governance
Information Security
Systems Management
End-to-End Performance
Architecture Effort
Skills Available
Technology Maturity
Organizational Capabilities

2. SOA Business Benefits

Business Process Agility
Cost Reduction or Avoidance
Time to New Capability
Business Scalability
Increased Business Coordination
Enhanced Information Quality

4. Costs/Risks

Business Process Management
Cost Increases
Business Operations Impact
Organizational Culture

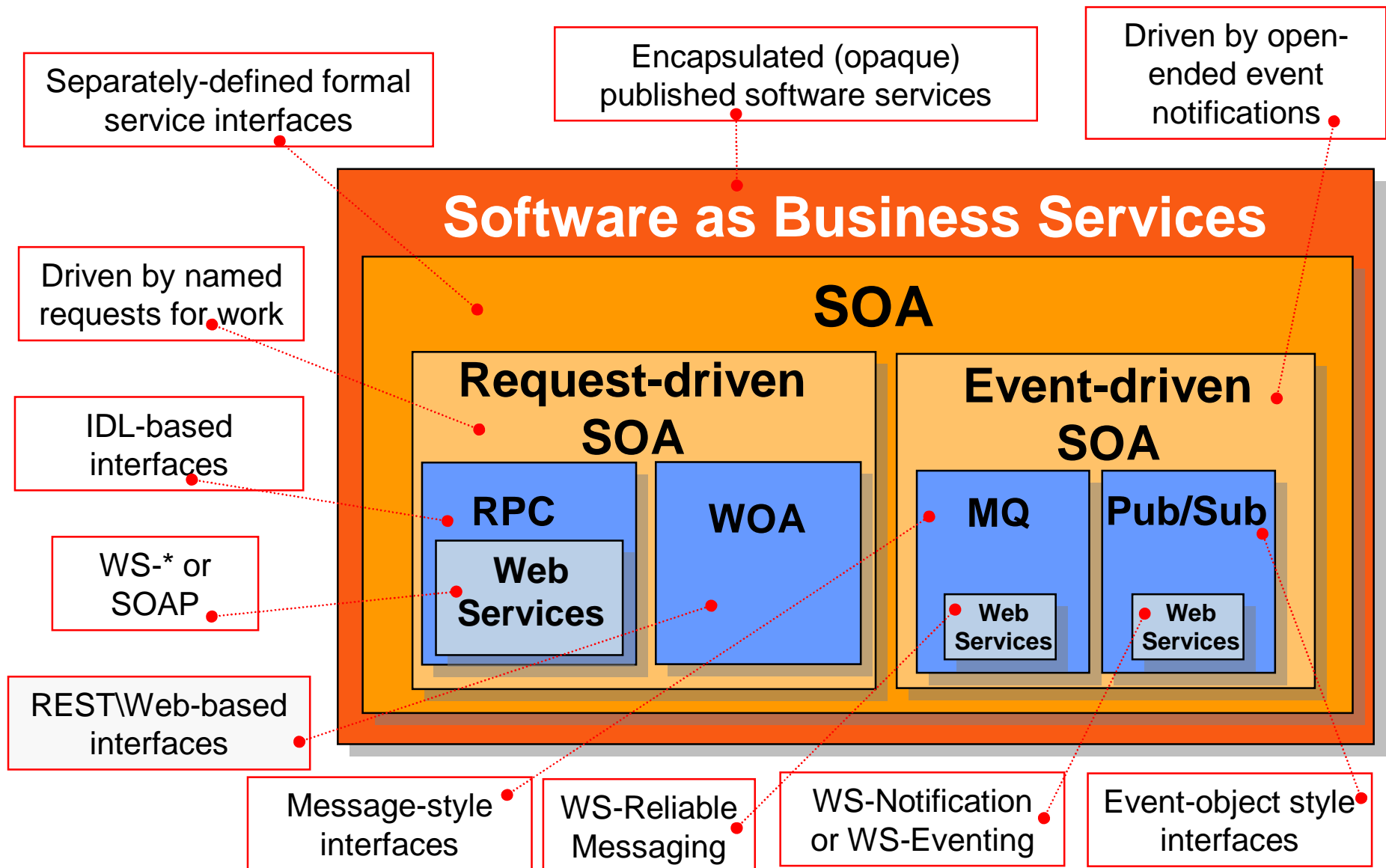
1. Business Impact

Revenue Growth
Market Share
Growth
Better Profitability
Competitive
Position
Regulatory
Compliance

**Provides a framework for
targeting application challenges
as SOA opportunities**



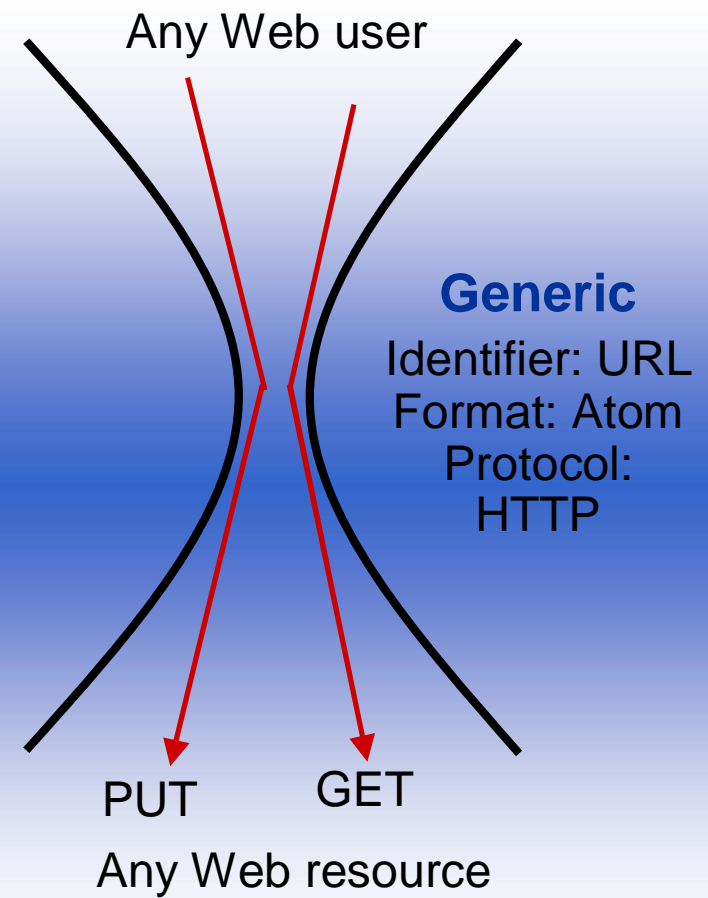
The SOA Application Pattern Taxonomy



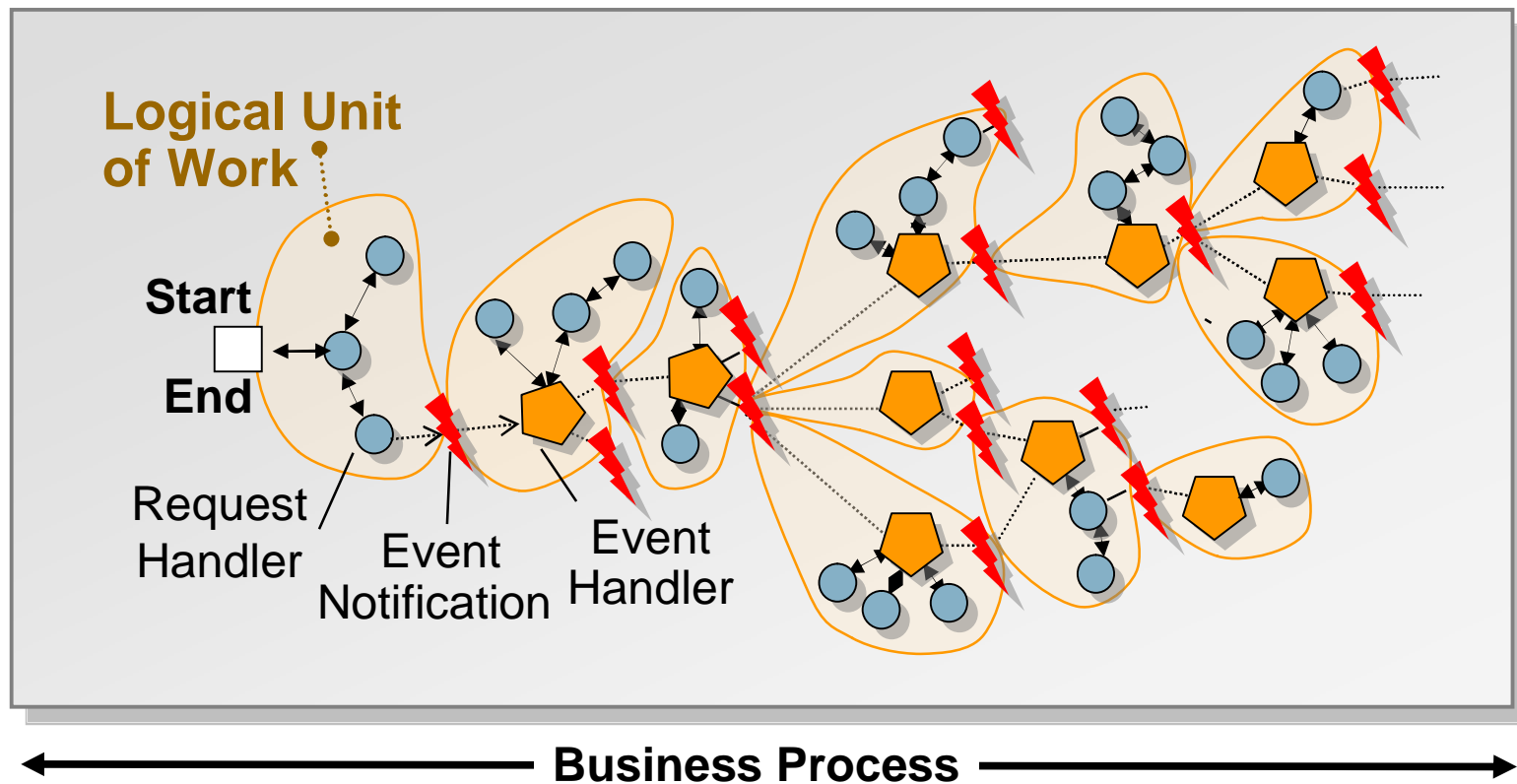
What Is Web-Oriented Architecture (WOA)?

- Sub-style of SOA
- WOA=SOA+www+REST
- Fundamental REST principles:
 - Identification of resources
 - manipulation of resources through representations
 - hypermedia as the engine of application state
 - self-descriptive messages
 - application neutrality
- Web
 - HTTP: Get, Post, Put, Delete
 - URL addressability
 - No session state

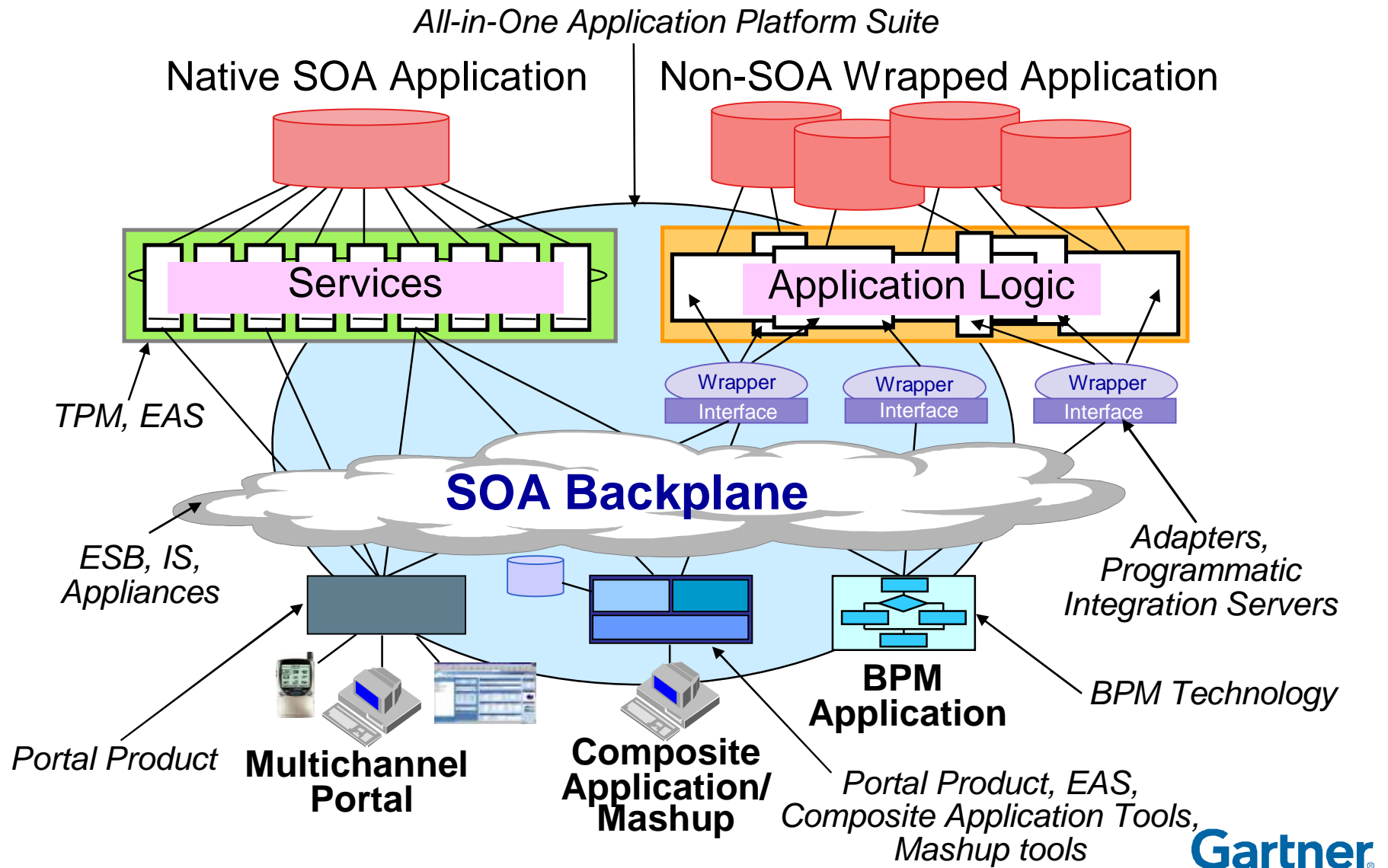
The Hourglass Model of Middle-Out Architecture



Advanced SOA: Events, Requests and State



Advanced SOA Initiatives Require Sophisticated Infrastructure: The SOA Backplane



SOA Without Governance (aka Degenerating SOA)

"Wild West" SOA

- The most common case of a degenerated SOA.
- Services proliferate wildly because no formal service definition process is in place.
- Frequently fueled by widespread enthusiasm about the ease-of-use of Web services.
- No central registry; nobody knows how many services are in place, where they are or what they do.
- Extremely difficult situation to fix and gain control of.

Shelfware SOA

- A working SOA is implemented, but few applications actually use the public services.
- Most applications remain as they are.
- There's little buy-in from several business units, no agreed-on application architecture companywide and reuse is an unkept promise.
- The intentions are good, but SOA is a waste of resources and won't deliver benefits.

Duplicated SOA

- Slightly more disciplined and more devious version of a Wild West SOA.
- Simply too large; may contain more than 1,000 services.
- Although "things work well," many services have significant unplanned duplication
- Rewarding mechanisms for creating reusable services and reusing established services are vague.
- Little reuse and maintenance costs multiply.
- Companies are often reasonably happy with this SOA, even though their savings would multiply if they reduced the level of duplication.

Main RACI Table for SOA Governance

Decision	Responsible	Accountable	Consulted	Informed
Which services to do?	Enterprise Architects, Application Developers	Enterprise Architects	Process Owners, Application Developers, Security Experts,** DB Experts**	All CoE
Which services to do first?	Enterprise Architects, Application Developers, CoE Internal Marketing, Process Owners, SOA Project Sponsor*	Enterprise Architects, CoE Internal Marketing, Process Owners	Process Owners, Application Developers, Security Experts,** DB Experts**	All CoE, SOA Project Sponsor
Is this really a new, reusable service?	Enterprise Architects, CoE Administrators, Application Developers, Process Owners*	Enterprise Architects, CoE Administrators	Application Developers, Process Owners,* Integration Tech. Vendors,* Security Experts,** DB Experts**	If a new, reusable service is agreed, all CoE; if not, service owners of the services that are reused.
Who's going to pay for the development & maintenance of this service?	Enterprise Architects, Process Owners, Application Developers, IT Budget Committee	SOA Project Sponsor, IT Budget Committee	Process Owners, Application Developers, Operations, Security Experts,** DB Experts**	Application Developers, Service Owners
Who owns this service?	Enterprise Architects, Application Developers, Process Owners*	Enterprise Architects, Application Developers, Process Owners*	Process Owners, Application Developers, Operations, Security Experts,** DB Experts**	All CoE

* For coarse granularity, highly reusable services

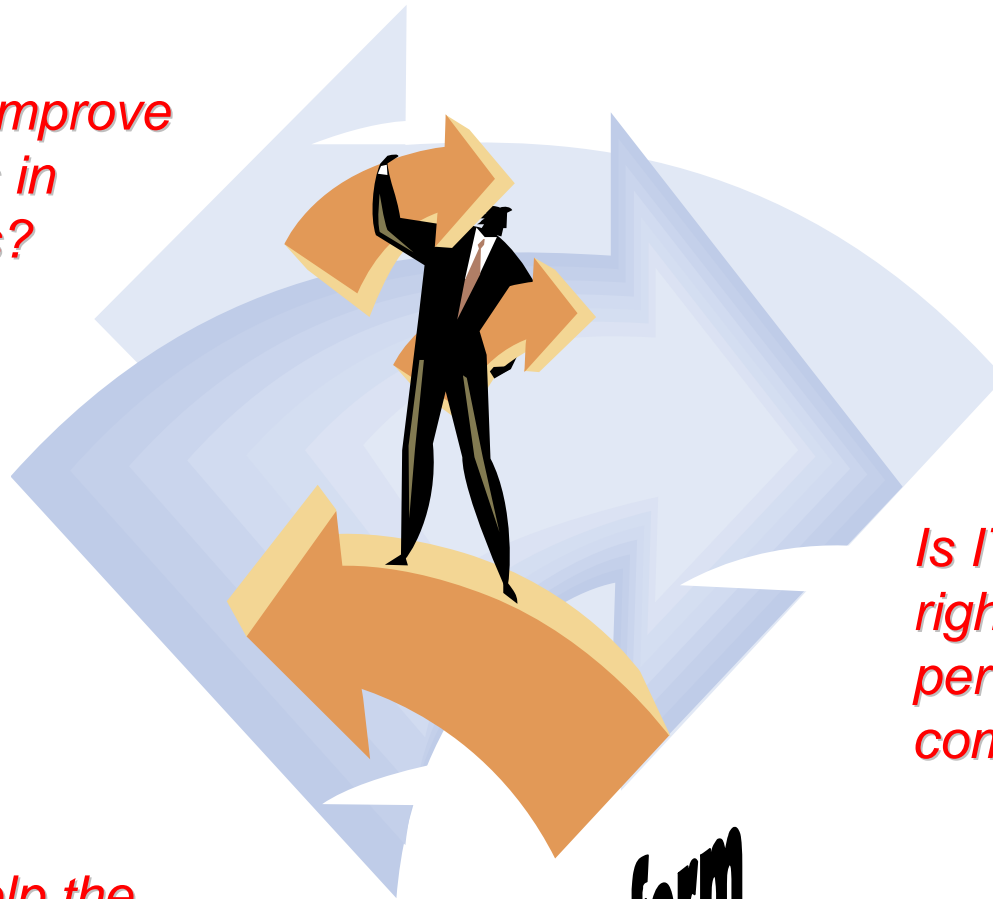
** Depending on the nature of the service

IT Modernization – A Flight to Flexibility

Is IT helping to improve business results in existing markets?

Grow

Can IT help the business move to new markets ?



Run

Is IT producing the right level of performance at a competitive price?"

Transform

The Pace of Change for Modernization

IT Drivers

- Staffing, Skills
- Consolidation
- Agility/need for speed

Market Drivers

- Social Networking
- Consumerization
- Green Business

Technology Drivers

- Virtualization is everywhere
- SOA Initiatives
- Facilities and Infrastructures
- Packaged Applications

IT Modernization – The Domino Effect



Aging IT infrastructures and applications, coupled with an increased need to be responsive to business demands have forced many organizations to rethink traditional incremental technology improvement programs and focus on a holistic IT Modernization program.

Finding and fixing the Dominos

- **Trinity Millennium Group**
- **BluePhoenix**
- **Speedware**
- **HP**
- **Microsoft**
- **Micro Focus**
- **Oracle**
- **TSRi**

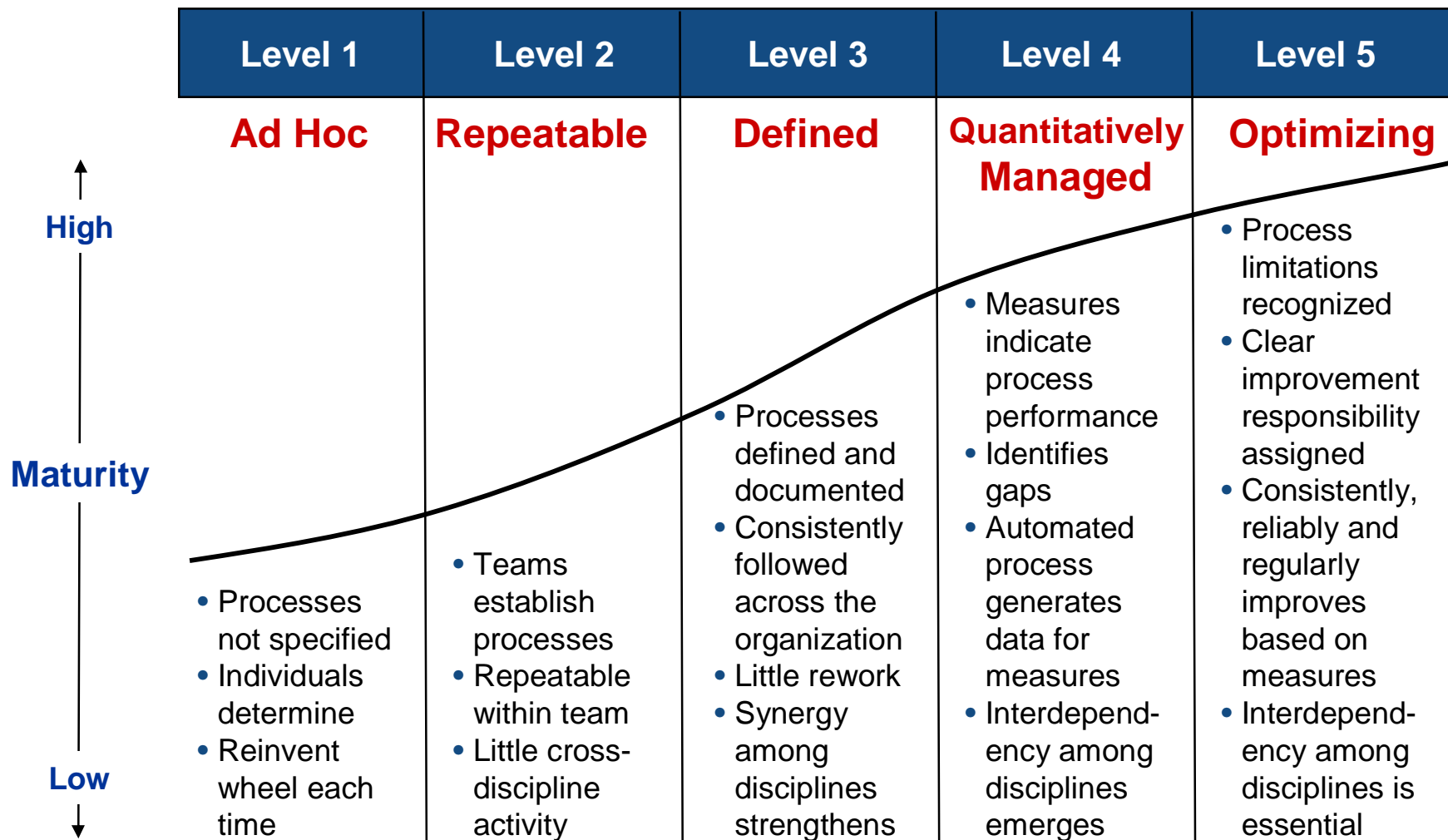
Software Development: The Future is Now

- ~250 Billion lines of legacy code, 200 million lines of Cobol.
- The Services being built today will last for....
- >10K Facebook Applications, Force.Com, Amazon Web Services are available today

Long-term Impact of Short-term Actions

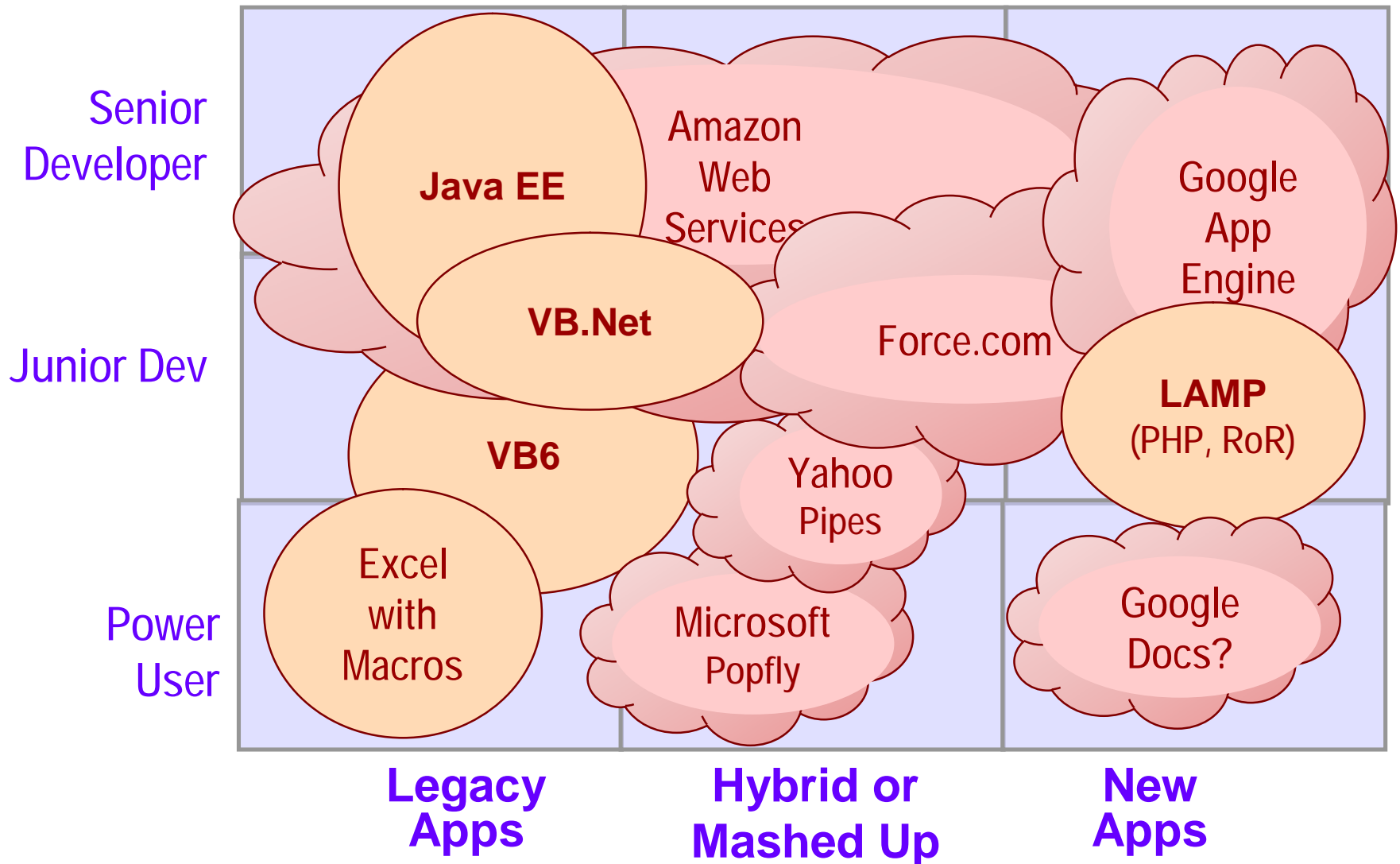


Gartner's Maturity Model for Application Organizations



APPLES VERSUS ORANGES

Legacy Versus New Dev Platforms, circa 2010



Recommendations

- ü Treat SOA as a strategic initiative.
- ü Justify and measure SOA success
- ü Use a systematic approach to designing services for particular and extended use.
- ü Advance gradually through SOA stages of maturity.
- ü Establish a competency center to coordinate SOA efforts.
- ü Address SOA as part of an IT modernization effort
- ü Explore new development methods to achieve the agility and sharing benefits of SOA