



IBM SOA Executive Summit

Making SOA Real

How to organize, standardize and fund

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SOA on your terms and our expertise



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Over the last two decades, businesses have migrated the focus of their optimization efforts

Stage 3: Enterprise Optimized

- Centralization of back-office functions (e.g., procurement, finance, IT and HR)
- Customer facing organizations (e.g., channel unification, data mining, cross-selling and product bundling)
- Provide bundled solutions in addition to discrete products and services

Stage 2: Process Optimized

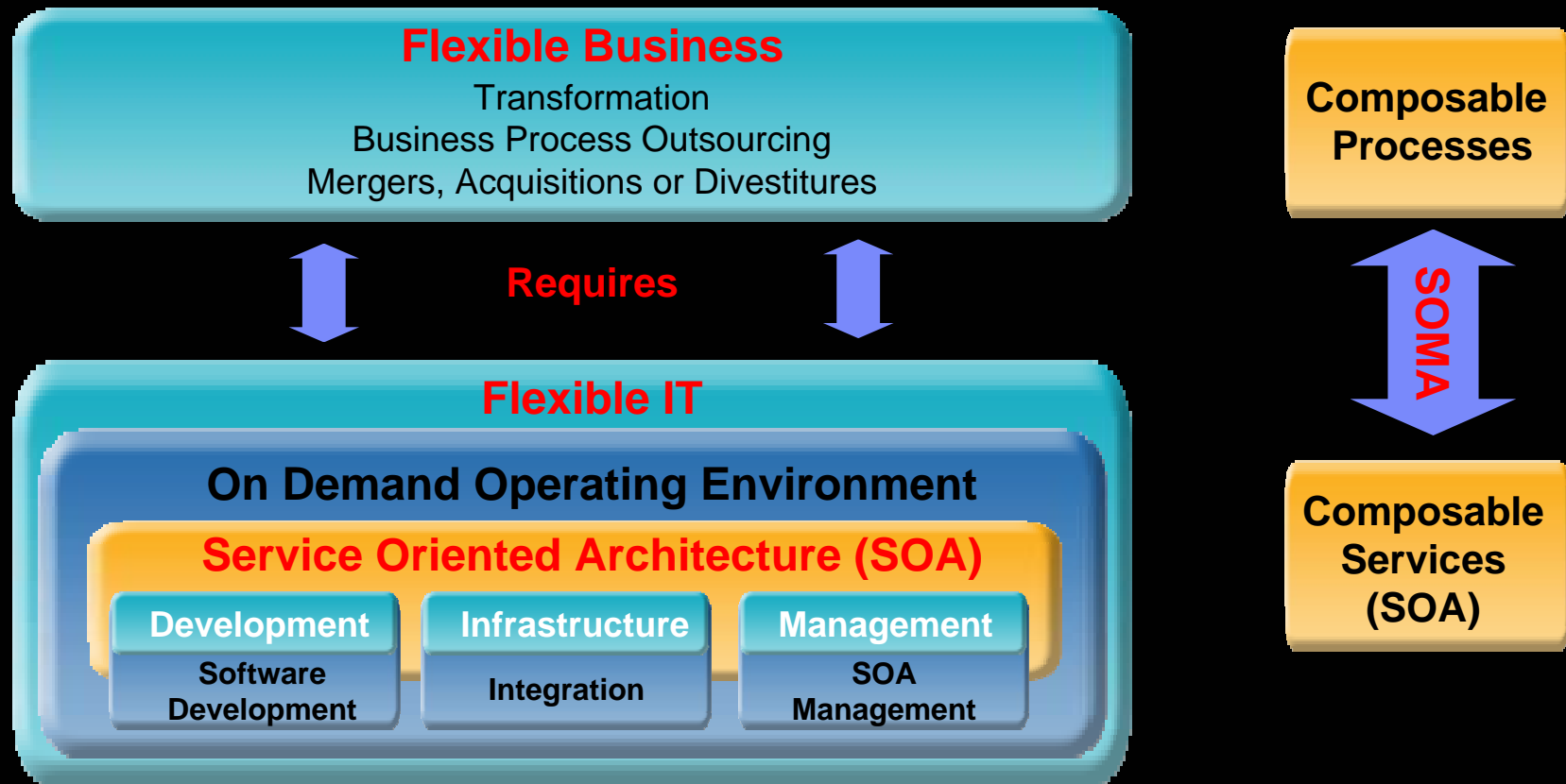
- “Business Process Reengineering”
- New technology capabilities drive organizational change
- Complex business systems such as SCM, ERP, CRM
- Six Sigma, Total Quality Management (TQM)
- Lean Manufacturing, ISO 9000

Stage 1: Business Unit Optimized

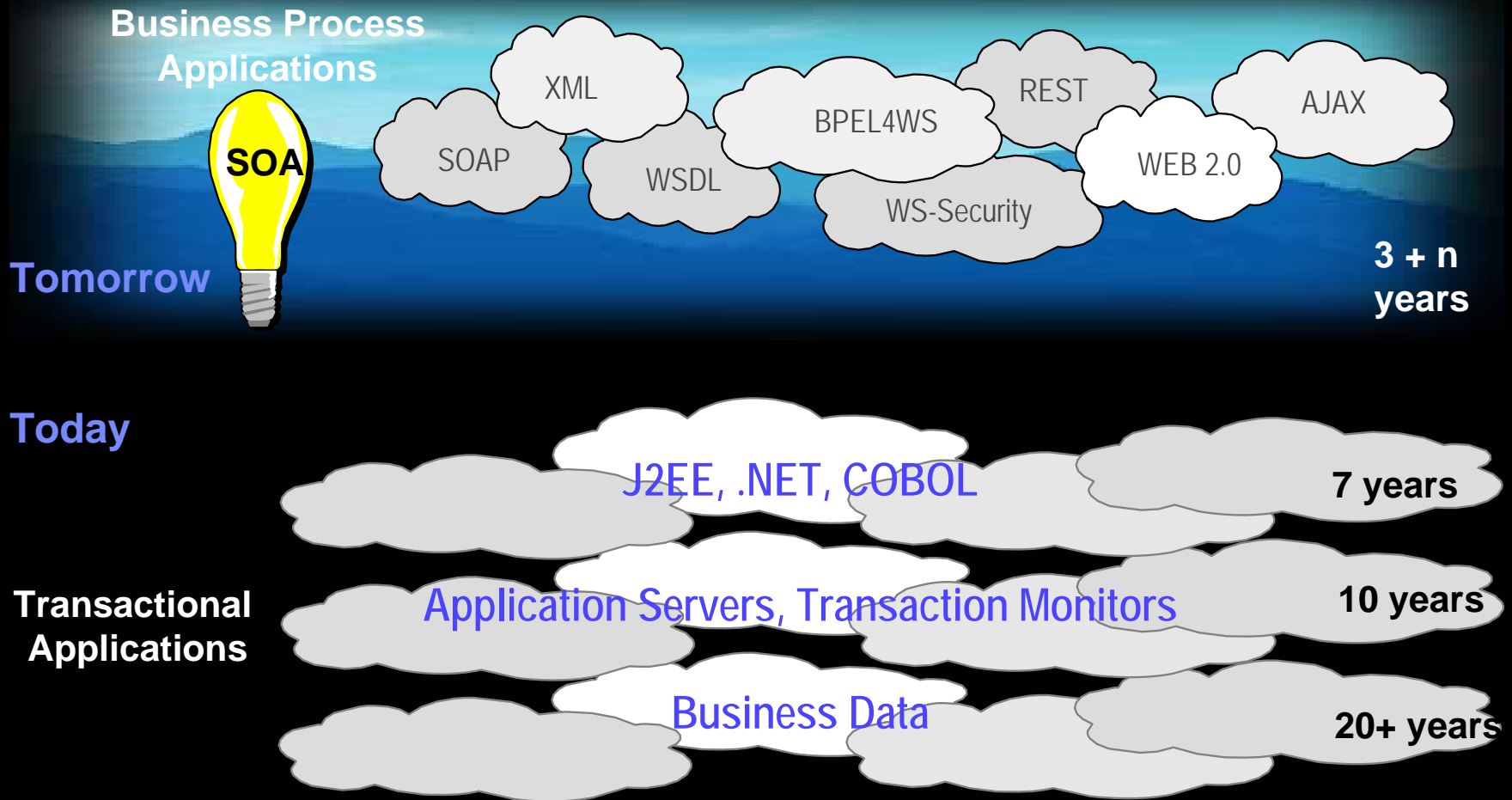
- “Strategic Business Unit”, “Portfolio Management”
- Business matrix
- Product portfolio analysis
- Best-in-class, end-to-end strategies

On Demand
Economy

The easier optimization activities have mostly been completed and to achieve further improvements a structural change is often needed for better business execution



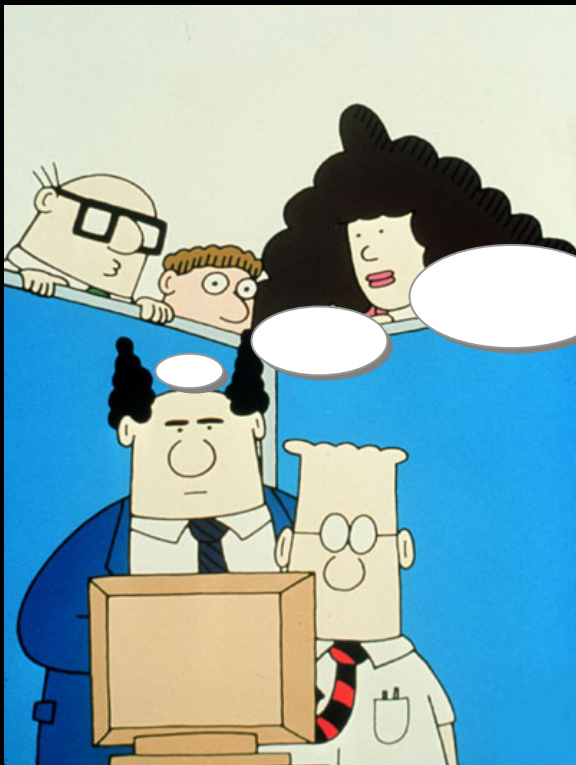
Executives know they should not be forced to work around systems and processes locked in old ways to achieve better business execution, a motivation for service orientation



To date many SOA adoptions have largely focused on IT but a business centric approach can increase the value

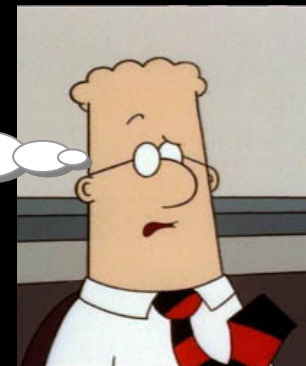
Today - Wave I 2002 through 2007	2010 and Beyond - Wave II Asset based
<ul style="list-style-type: none"> ■ People based delivery to SOA-enable enterprises ■ Build out of skills, methods and tools to design, implement and manage ■ Emphasis on infrastructure and architecture reference models ■ Value generated largely from service oriented integration 	<ul style="list-style-type: none"> ■ Create low cost hard asset-reuse model “business services.” ■ Emphasis on fast to deploy business solutions with reusable components and business process services to create composite applications ■ Focus on speed and flexibility ■ Starting in industries with the most change

However, business and IT alignment continues to present challenges as stakeholders have different perspectives



We need a set of systems that seamlessly integrate our business operations using those hot new internet and object-oriented technologies, integrate our best of breed package software, and give us all the information we need to manage the business. And by the way we want to be able to change our mind about what business we are in and how we conduct that business on a moment's notice and we expect the new systems for supporting these changes to be available at minimal cost within a week

Is he serious?

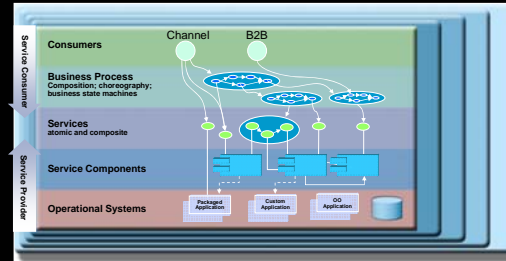


SOA although not a panacea has an opportunity to improve business and IT alignment and provide a strategic architectural approach for improving business and IT alignment

IT View	Business View
<ul style="list-style-type: none"> ▪ Tactically driven due to time to market constraints ▪ Lack of appetites for application or infrastructure renovation until a crisis occurs ▪ IT operates as a collection of subcontractors to the business ▪ It is hard to know what the business really wants 	<ul style="list-style-type: none"> ▪ Application and technology portfolio hampers business flexibility ▪ Ability to get new capability and/or new features to market lags our competitors ▪ IT projects take too long, cost too much and often fail to deliver on the promises ▪ We have little visibility or input into the evaluation or decision-making processes of technology choices that impact business flexibility

The tenets of SOA are commonly know but its useful to highlight three trends driving SOA adoption

1. Loosely Coupled Services



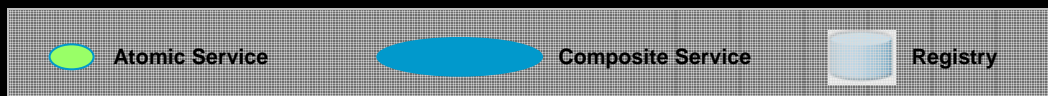
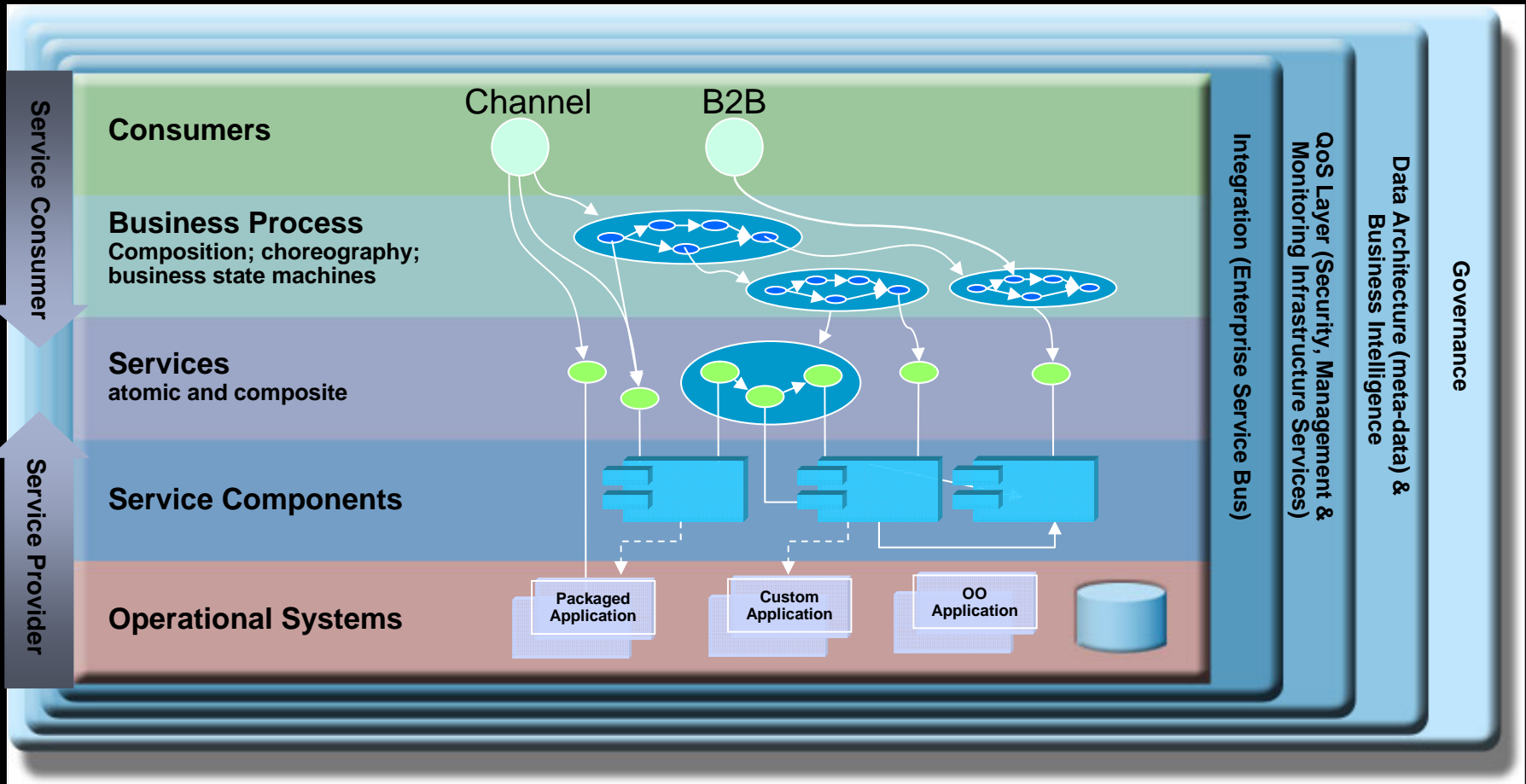
2. Usage of Service for Integration



3. Information as a Service



Key Trend #1: Loosely Coupled Services

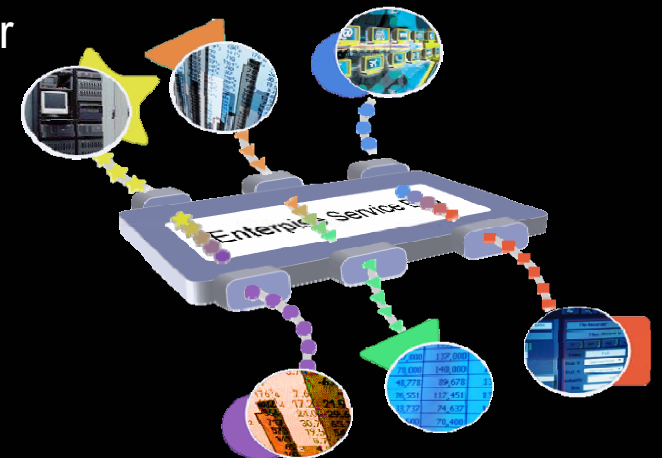
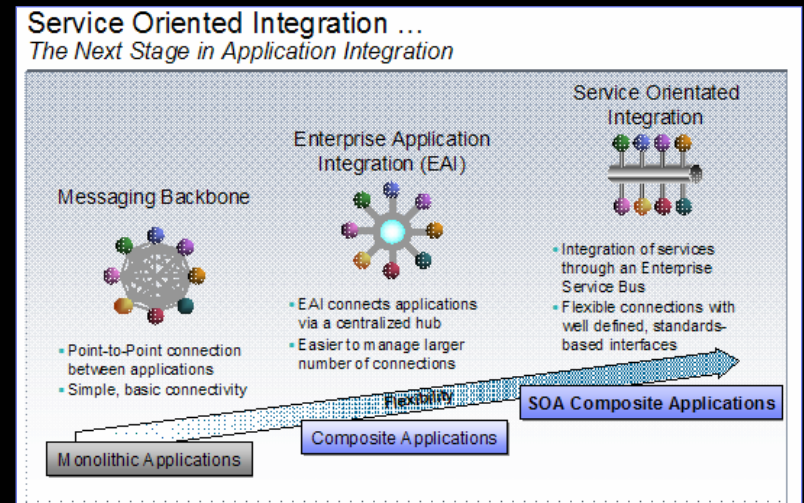


Key Trend #2: Services for Integration

- ESB *is a design* for building large, scalable, and *manageable* set of services
 - Evolution of messaging and brokering (borrows from MQ lessons)
 - Forms key part of SOA infrastructure and middleware

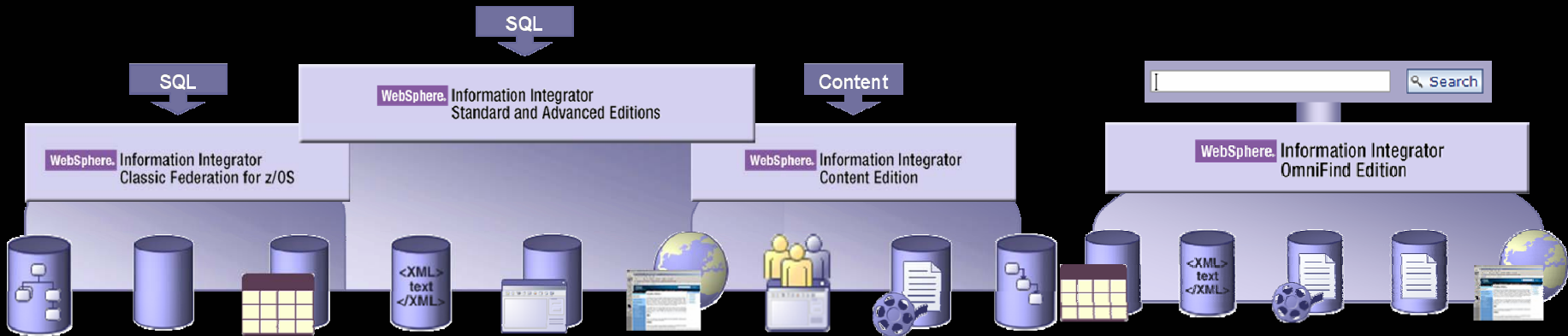
- ESBs are also an *emerging product space*
 - WebSphere ESB, WebSphere Message Broker
 - BEA AquaLogic
 - Microsoft Windows Communication Framework (aka Indigo)

- ESBs are key for *Management*
 - ESBs serve as central backbone to SOA



Key Trend #3: Information as Services

- Federation
- Replication
- Enterprise Search
- Event Publishing



Three technical approaches for SOA adoption will influence how organizations plan, fund and organize SOA projects

- **SOA for Business Process Flexibility**
 - Accelerate time to market for new products
 - Shift from business logic locked in application silos to business logic as a business asset represented as shareable services
 - Enabler of reuse strategy to increase productivity
- **SOA for Integration**
 - Planned integration versus ad hoc to infuse flexibility into the integration architecture
 - Improved separation of concerns between middleware and business logic
 - Lower cost of maintenance with enterprise integration based on SOA principles and best practices
- **SOA for Service Abstraction**
 - Supports a reuse strategy
 - Optimizes portal implementations
 - Supports federated security models

Best practices for SOA and Web services influences how organizations plan, fund and organize SOA projects

- SOA and Web Services
 - Creating more Web services will not bring an organization closer to SOA
 - Improving Web service design will not bring an organization closer to an SOA
 - Creating Web services more quickly will not bring an organization closer to SOA
 - Adopting Web services enables SOA to be realized through agreement on protocols, not a common platform; universal support by vendors across platforms and tools; rich, self describing interfaces and a common framework for all integration requirements
- SOA and Reuse
 - Business and IT alignment
 - Metrics
- SOA Governance
 - Necessary to achieve and sustain the goals of SOA

The best practices of service orientation which is the process and practices that guide the delivery of a SOA is in the early stages of adoption for many organizations

Service Oriented Analysis

How do you understand the business as services?
How do you enable business agility?

Service Requirements

Service Design

Service Oriented Design

What is the precise behavior of services?
How do you ensure scalability, reliability, etc?
How do you enable technical agility?

Service Build

Service Development

Service Oriented Programming

How do you reduce effort to code Web Services?

Service Oriented Provisioning

How do you determine which Services to use?
How do you choose Service Providers?

The evolving SOA eco system raises several questions and creates several challenges in SOA adoption

1. Business Case for SOA
2. “What do I do next?”
 - Transformation
 - Adoption
 - Maturity
3. Building composite applications
4. Monitoring and managing across the eco-system
5. Eco-system flexibility with declarative policies, service management and externalized functionality.
10. Industry Standards
11. Availability across the eco-system
12. Creating the Hybrid Solution with ISV’s and avoiding vendor lock-in, *even* in the name of SOA
13. “How do we govern eco-system *evolution*?”

Sustained commitment to SOA and generating business value are dependent on valid “motivations”, such as ongoing process renewal, reuse or participation in the ecosystem.

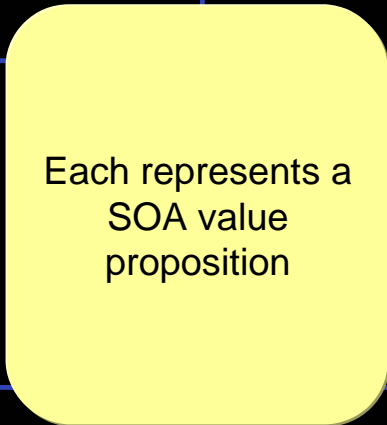
- How can we benefit from an SOA?
- Reuse? Flexibility? Integration? Service Abstraction? Each have their price.
- What business pain points will adoption of SOA solve?
- What approaches to SOA are needed to solve the business problems?

Increase revenue

Regulatory compliance

Provide a flexible business model

Integrate across the enterprise

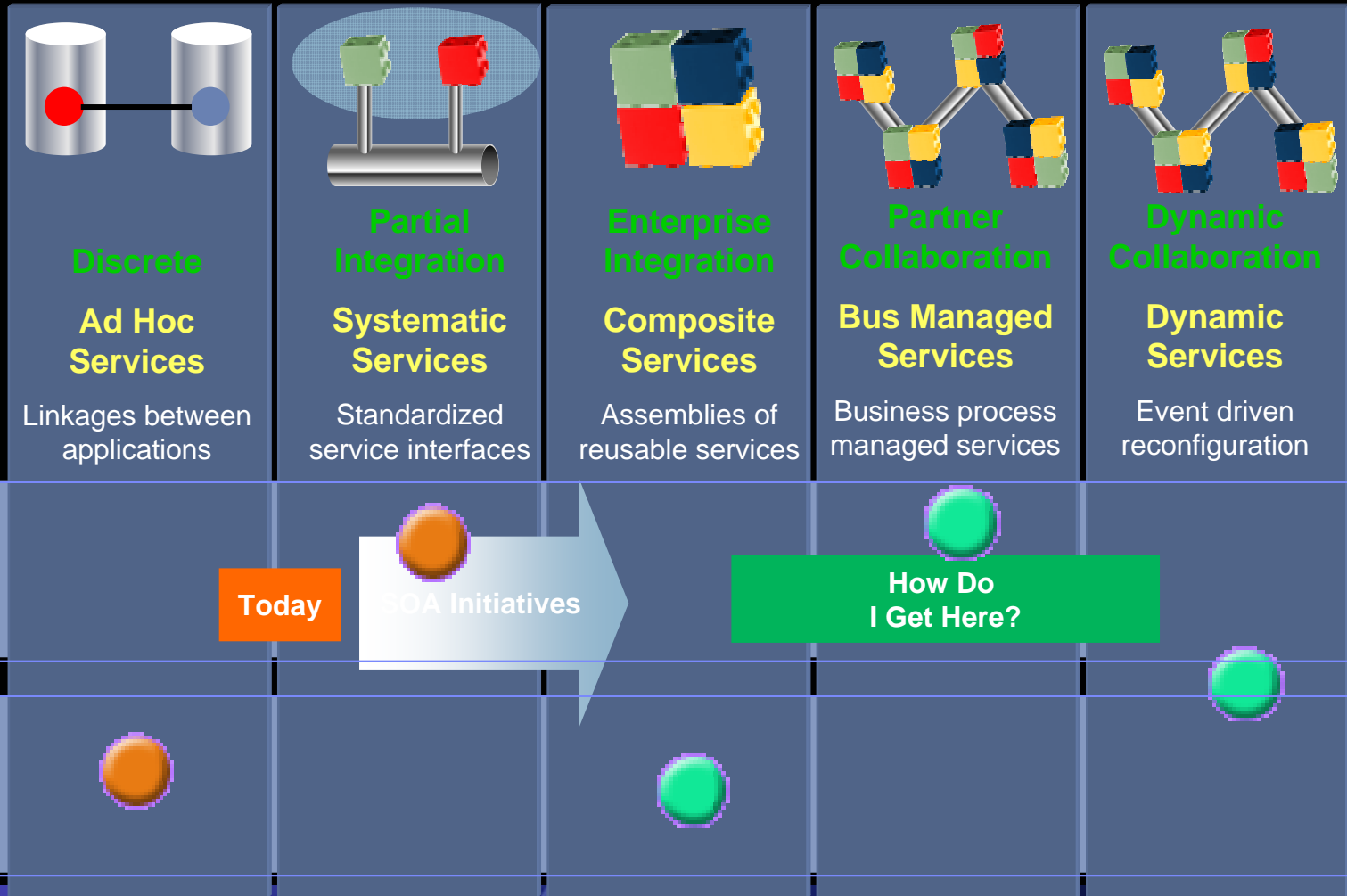


Reduce cycle times and cost for external business partners

Rationalization and cost reduction

Reduce risk and exposure

SOA is a journey of incremental transformation towards higher levels of maturity of loosely-coupled services and seamless integration of business partners



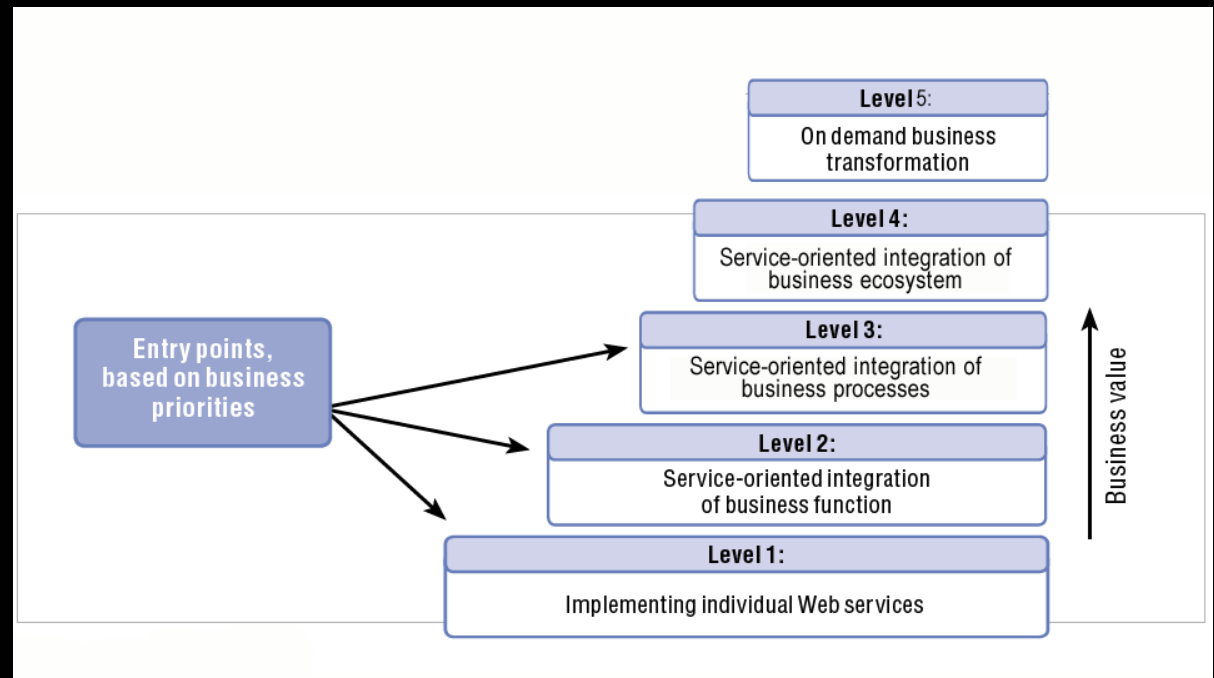
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SOA adoption is often gradual and grows into increasingly larger scope towards an eco-system

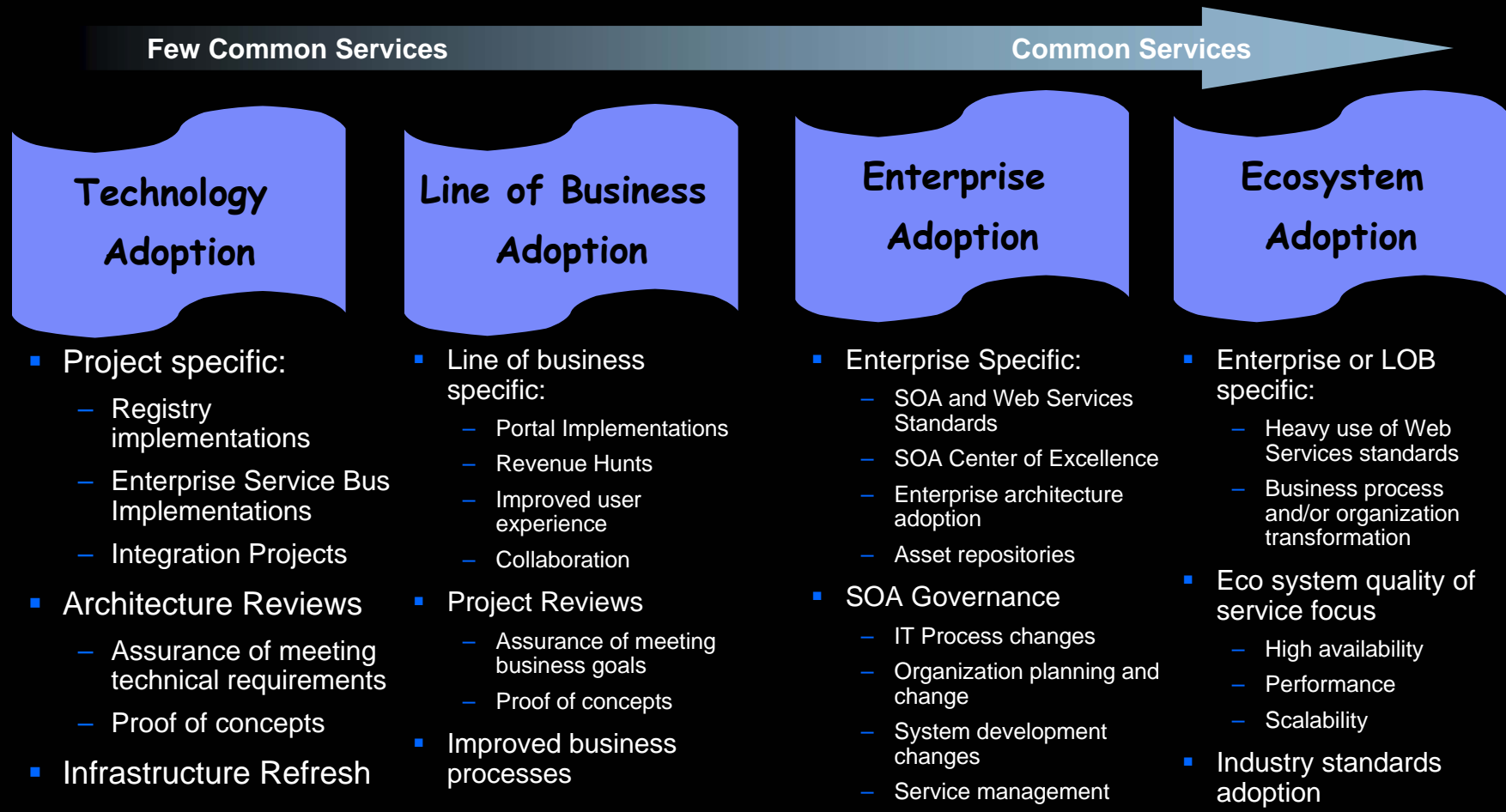


The type of SOA adoption evolves through multiple stages based on business needs and priorities

- From simple point to point web services wrapping and adapting of legacy API's ...
- Passing through Service-oriented Integration of applications using loosely coupled service descriptions...
- Integrating lines of business inside an organization...
- Extending the reach of business partners in a supply chain to one another's key and core business processes more seamlessly (still less loosely coupled)...
- To building capabilities towards an SOA Eco-system in which prospective business partners can create business eco-systems.



Adoption is often gradual and grows into increasingly larger scope towards an eco-system



SOA provides a value proposition for a set of distinct business challenges and is a journey of incremental transformation and many companies are seeing value today

Move to architectures capable of business agility and game changing business models; provide a flexible business model

Reduce cycle times, and cost for external business partners; integrate core processes, facilitate flexible dealings with business partners

Increase revenues, create new routes to market, create new value from existing systems

Integrate across the enterprise integrate historically separate systems, facilitate mergers and acquisitions of enterprises

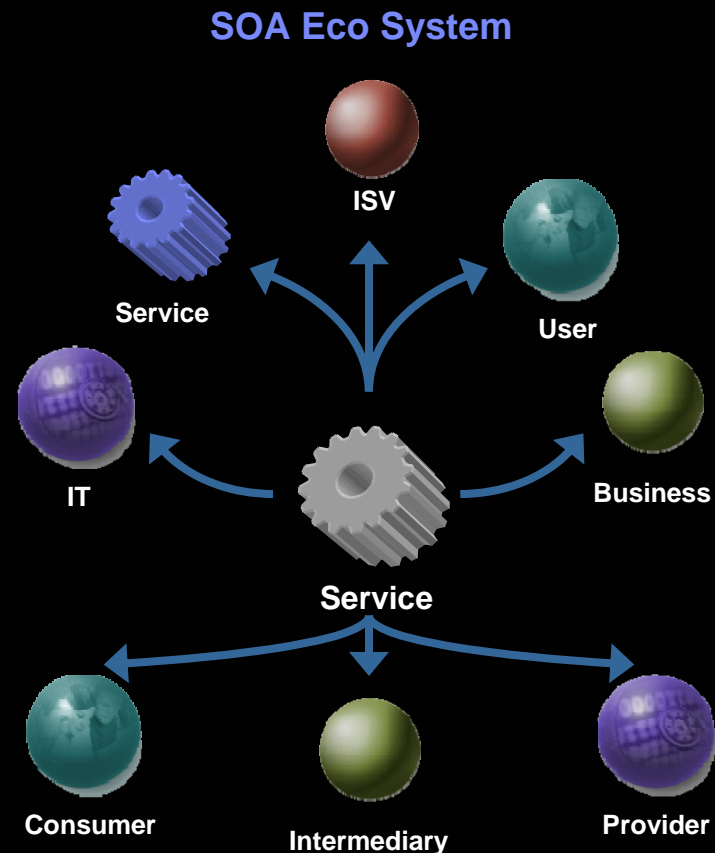
Drive down cost and operating expenses, eliminate duplicate systems, build once and leverage, improve time to market

Reduce risk and exposure, improve visibility into business operations, comply with federal mandates



We can generalize the benefits of SOA and their value proposition; however, it should be recognized that the benefits are likely to be more specific to different audiences.

- Be of value to IT but always not the Business
- Accrue specifically from the use of Web Services, not just the Service concept itself
- Be a consequence of SOA best practices, not just application of Web Service technology
- Apply to the Service Provider but not the Service Requestor, or provide greater advantage to an intermediary
- Interest Vendors and ISVs, but not the user of their product or service



We should always ensure that benefits and value propositions are directed specifically to the target audience, and are based on the correct foundation.

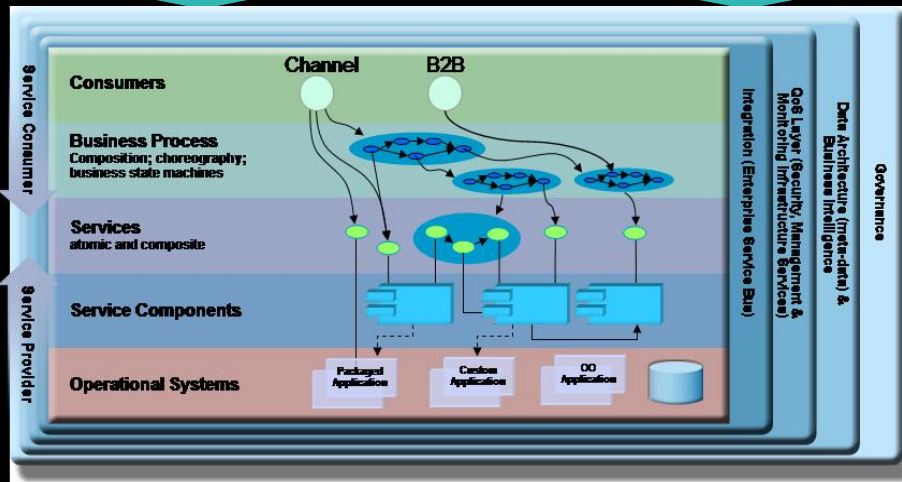
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Each approach to SOA relies on a different path of architectural decisions and relates to customer maturity

Business process Driven
Top Down
Modeling
to Identify
Business Services

Model Driven
Development
with Intent of Top-down
Service Exposure

Data Driven
(Information
Services)



Message Driven
("Just integrate
these systems")

Wrapping System
or Package
for
Service Exposure

Legacy
Transformation
("expose and service-enable
an embedded
Capability")

Three concepts have to be well understood: transformation, adoption and maturity to plan, fund and organize SOA projects

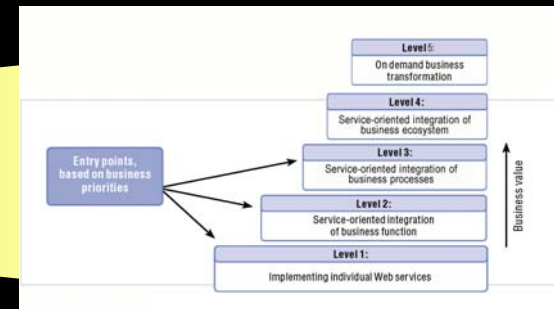
Transformation in Context

- A set of organizational changes of state to support business imperatives and goals
- Requires specific goals be attached to projects which apply or adopt SOA



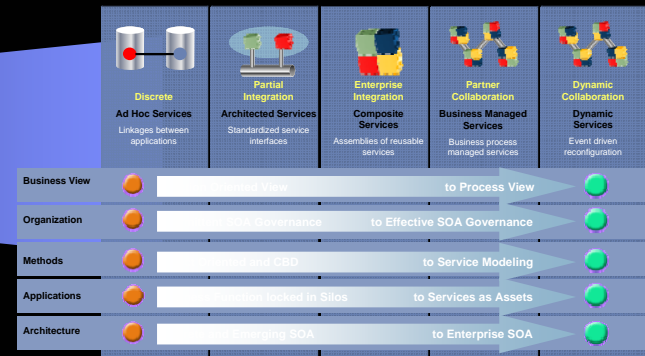
Adoption

- How an organization absorbs and assimilates change locally and globally as it “digests” or gets acclimated to the changes.
- Allows trust to be developed between business and IT



Maturity

- The characteristics and behavior of parts of the organization that are undergoing transformation and are undergoing adoption
- Enables transformation goals to be measured and achieved



SOA Motivations

Calculating the Business Value or ROI of SOA

- **Challenges**

- Architecture, by itself, often does not offer specific functional features that can readily be identified with a specific return.
- Architecture is often an investment companies make in advance of any return, and must continue to make over the lifetime of their SOA implementations.

- **Key Questions**

- How do we calculate the business value or ROI of SOA initiatives before those projects take place?
- What are the tangible benefits of SOA that can result in a quantifiable ROI for the implementers? How do organizations calculate the expected return that SOA benefits will provide to the organization?

- **Solution**

- Understanding the full range of SOA value propositions is a first step to understand the business value and/or ROI of SOA

- **Constraint**

- It may not be possible to understand SOA's true business value or ROI before the project is complete necessitating sound program management and SOA governance

Calculating the Business Value or ROI of SOA

SOA Motivation – Integration

▪ Business Value

- Improve responsiveness to change as a services integration approach enables business flexibility through loose coupling of resources
- Information and functionality can be provided consistently across multiple channels regardless of how they are integrated.
- SOA and Web Services lower the cost and time of connecting resources, which increases the opportunity to include a greater number of participants into business processes, improving the real-time access to information to all.
- Increases the feasibility of real time, remote access to core source of information (owner) which provides current information to a process.

▪ IT Value

- Lowers the cost of connection.
- Support new requests with minimum of change to Services
- Introduce new platforms and technology (to reduce cost, improve performance,)
- Reduction in total cost of ownership as compliance by a wide number of vendors typically results in commoditization
- Common approach to each integration scenario minimizes multiple the products, tools, skills and subsequently increased cost
- Easily interface at a technical level between any two systems, even though these systems may run on different technologies with different systems environments in different locations.

Calculating the Business Value or ROI of SOA

SOA Motivation – Integration

- **Business Value Calculation Approach**
 - Compare the investment in Web Services-based SOA to an equivalent traditional integration middleware approach
 - Compare both the immediate licensing and configuration cost reductions as well as the longer term maintenance and change costs
- **Planning and Organizing Activities**
 - Establishing SOA standards and procedures for ESB
 - Establishing Web services standards
 - Selecting new middleware and infrastructure elements for SOA and launching appropriate proof of concepts
 - Adoption of SOA Registry
 - Updating the Enterprise Architecture or Architecture Working Group
 - Planning and beginning launch of SOA Governance

Calculating the Business Value or ROI of SOA

SOA Motivations – Cost Reduction, Increased Revenue or Reduced Cycle Times

- **Business Value**

- Reduced cost
- Increased revenue
- Improved or optimized business process
- Improves time to market as connections to partners and customers can be made faster, even dynamically
- Makes it easier for partners to do business with you
- Enables end-to-end business process optimization where Web services enables a more real-time response by connecting the applications of each participant directly and replacing manual self-service activities (e.g., file transfer and replication that creates delays) with automation
- Enables real time business, and straight through processing

- **IT Value**

- Self describing services can shorten development cycles because Web services are machine readable, the process of including a Web Service in an application can be highly automated via tools, reducing the time and cost of development.
- Services can be consumed dynamically without developer intervention

Calculating the Business Value or ROI of SOA

SOA Motivations – Cost Reduction, Increased Revenue or Reduced Cycle Times

▪ **Business Value Calculation Approach**

- Cost / Benefit analysis is fairly straightforward and business as usual as each should be a self funding initiative: Cost reduction; Increased revenue; or Reduced cycle times
- Measure before and after of process changes and perform straight forward cost / benefit analysis
- Determine costs of any pre-existing middleware or infrastructure which supports a prior integration approach that can be phased out
- Define value of potential new business through competitive advantage of providing Web Service
- Define value for enabling mobile workforce through automation
- Define value of enabling business partners to integrate into own applications and “sell through”

▪ **Planning and Organizing Activities**

- Use Component Business Modeling to go on “hunts” or searches for revenue or cost reductions
- Conduct project definition workshops to define opportunities with business and IT stakeholders
- Launch proof of concepts for new technology introduction
- Establish Web services and SOA standards

Calculating the Business Value or ROI of SOA

SOA Motivation – Business Flexibility

- **Business Value**

- Improve responsiveness to change
- Introduce new products
- Optimize business processes
- Strategically and tactically outsource business activities with minimum disruption
- New partners and customers
- Requestor agility especially where the software service itself does not differentiate the provider
- Use of the Internet enables applications running on end-customer devices to also participate dynamically in the business process accessing services
- Increase in business opportunity

- **IT Value**

- Rapidly assemble new Services
- Support new requests with minimum of change to Services
- Automated discovery enables autonomic behavior
- Ensure SLA through the strategic and tactical outsourcing of applications and other IT assets
- Introduce new platforms and technology (to reduce cost, improve performance,)

Calculating the Business Value or ROI of SOA

SOA Motivation – Business Flexibility

- **Overcoming objections**
 - Business unwilling to invest – but cannot have flexibility without investment
 - Investment will pay off for future or subsequent changes occur
 - Business is unwilling or unable to identify potential areas of change
 - Lack of ownership

- **Challenge**
 - Dependent on extending reach of SOA to business as a whole versus just IT department

- **Business Value Calculation Approach**
 - Define scenarios for business users to directly control business process definition and management through services where parts of their overall business process flows can be delegated to different parts of the organization, each of which have direct and immediate control of the actual operation of the business
 - Develop flexibility metrics for items such as reduced cost of change, reduced time to change, optimization of process

Calculating the Business Value or ROI of SOA

SOA Motivation – Business Flexibility

- **Planning and Organizing Activities**

- Use Component Business Modeling (CBM) approaches to identify potential areas of change
- Define modeling tools to be used by both business and IT
- Design flexible business services using a service modeling approach
- Adopt SOA and Web services principles and practices
- Set up a SOA Center of Excellence
- Establish SOA governance to address ownership and decision rights
- Implement service integration points
- Establish asset reuse program

Calculating the Business Value or ROI of SOA

SOA Motivation – Asset Reuse

- **Business Value**

- Introduce new products to market faster
- Optimize business processes
- Ability to respond rapidly to ever-changing external events – both positive and negative
- The internal mandate “to do more with less” as an IT organization.
- From an IT perspective, these external events result in a constant barrage of systems requests to change processing rules or application logic, to deliver additional information and not just more data, to improve fraud or risk controls, to handle special exceptions, and to customize solutions

- **IT Value**

- IT organization being asked to do more for less; The “more” includes greater reliability, faster systems performance, tighter security protections, and improved process controls. The “less” includes lower hourly labor rates, fewer headcount, reduced maintenance hours, improved asset utilization, and, generally, lower costs across the board.
- Reuse business logic or capabilities from different applications across the enterprise by exposing their functionality in a consistent manner and at the right level of granularity;
- Seamlessly integrate business logic or capabilities from different applications in order to build comprehensive business solutions that require functionality from multiple applications; and
- Lower maintenance costs

Calculating the Business Value or ROI of SOA

SOA Motivation – Asset Reuse

- **IT Value (continued)**
 - Shift ratio of IT costs from maintenance to new capability
 - Self describing services can shorten development cycles because Web services are machine readable, the process of including a Web Service in an application can be highly automated via tools, reducing the time and cost of development.
 - Reduces development effort as consumption of service is largely automated.
 - Reduced impact of change. Response to changes can be automated
 - Services can be consumed dynamically without developer intervention
- **Overcoming objections**
 - Structural issues with current IT architectures that inhibit IT from achieving greater business agility and improved organizational performance and business is often unwilling to invest – but cannot have asset reuse without investment
 - Often significant investments have already been made in reengineering systems, without the reuse becoming a reality or measured improved productivity of IT

Calculating the Business Value or ROI of SOA

SOA Motivation – Asset Reuse

▪ **Business Value Calculation Approach**

- Review a collection of currently funded projects
- Develop a service model and identify the potential opportunity for services reuse
- Determine the opportunity for cost reduction in each funded project and the aggregated total reflects the opportunity for cost reduction for reuse
- Based on the cost/benefit analysis for opportunity reuse make a investment funding decision

▪ **Planning and Organizing Activities**

- Develop a reuse framework and service sharing planning process on selected trial services
- Complete a catalogue of shared services document
- Develop a tactical plan to increase service sharing
- Determine the level or type of sharing required; for example,
 - Development sharing is when the development organization provides the services for itself and no others.
 - Line of business sharing means that an organization provides services to multiple development organizations.
 - Enterprise sharing means that an organization provides the services for all (or almost all) development organizations in the corporation.

Calculating the Business Value or ROI of SOA

SOA Motivation – Asset Reuse

- **Planning and Organizing Activities (continued)**
 - Define the service under consideration and what the benefit is that we expect to see by moving to the increased levels of sharing
 - Define the customer requirements that must be met for the shared service to be useful
 - Define what metrics will be used to determine that sharing is occurring
 - Define what metrics will be used to determine that productivity is increasing
 - Using a pilot team, define tactical plan that demonstrates how the team productivity will be improved and measured
 - Define and agree on the transition process to expand the success of the pilot team
 - Evaluate the cost/benefit of sharing the service.
 - Same activities for business flexibility must also be put in place

Calculating the Business Value or ROI of SOA

SOA Motivation: Reduce Risk and Exposure

▪ **Business Value**

- Regulatory compliance is made easier and such compliance is essentially a business agility issue, because such regulations are inherently arbitrary, and can change over time.
- Provide the visibility into their business operations that is needed to make intelligent planning decisions and control risk, and respond to the increased visibility that these regulations require.
- Risk-reduction capacity to companies looking for increased operations visibility. Governance, compliance, and general risk reduction is a different quantifiable benefit than increased business agility.
- Compliance and governance offers a reduction of liability

▪ **IT Value**

- Faster response to regulatory compliance requests
- Improved ability to provide business and IT dashboards

▪ **Business Value Calculation Approach**

- Quantifying the reduction of risk in order to calculate the ROI of an SOA-based compliance project must answer the question of how much is compliance worth?
- The answer lies in how much non-compliance will cost a company. The ROI of risk reduction is much like the ROI of insurance or security – its value derives from the prevention of an unknown expense

Calculating the Business Value or ROI of SOA

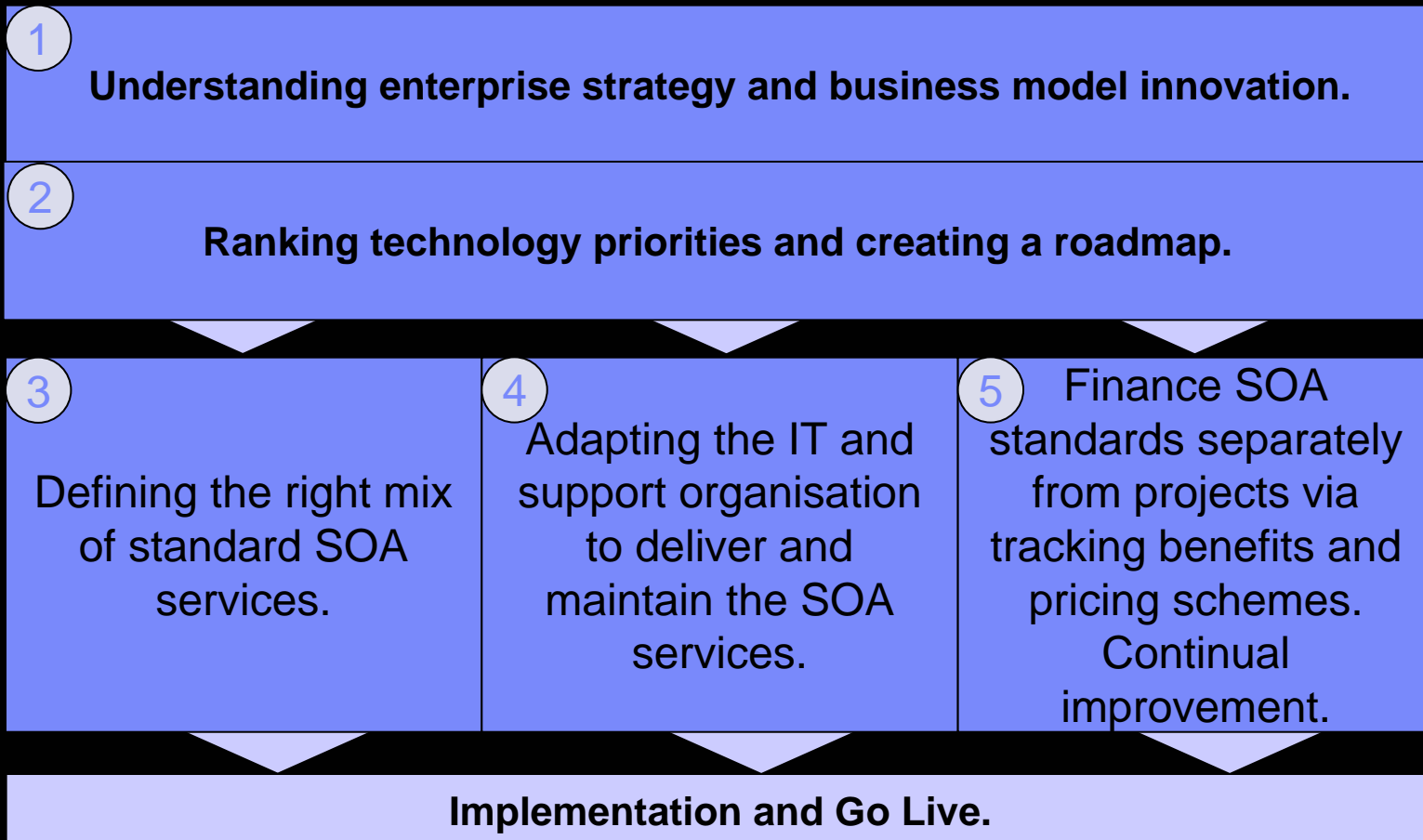
SOA Motivation: Reduce Risk and Exposure

- **Planning and Organizing Activities (continued)**
 - Define the services which if created would reduce risk and exposure
 - Define the customer requirements that must be met for the service to be useful
 - Define what metrics will be used to determine that sharing is occurring
 - Conduct assessments in security
 - Develop business dashboards
 - Develop IT dashboards
 - Implement SOA governance

Summary

Business value emerges from business redesign enabled by SOA.

Business Value Through SOA: Five Steps



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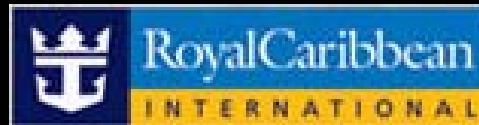
Tuesday May 2, 2006 - evening

Time

Topic

- | | |
|-----------------|--|
| 6:00-7:00 p.m. | Shuttle buses to Modern Art Museum (MoMA) – every 15 minutes |
| 6:30-9:30 p.m. | Sculpture Garden Reception and Gallery 5 Viewing |
| 9:00-10:00 p.m. | Shuttle buses to return to W Hotel |

COMING TOMORROW



Plus topics on People Productivity, SOA Security & Management, Information as a Service, Dashboards, Demos, Panel Discussions and More!