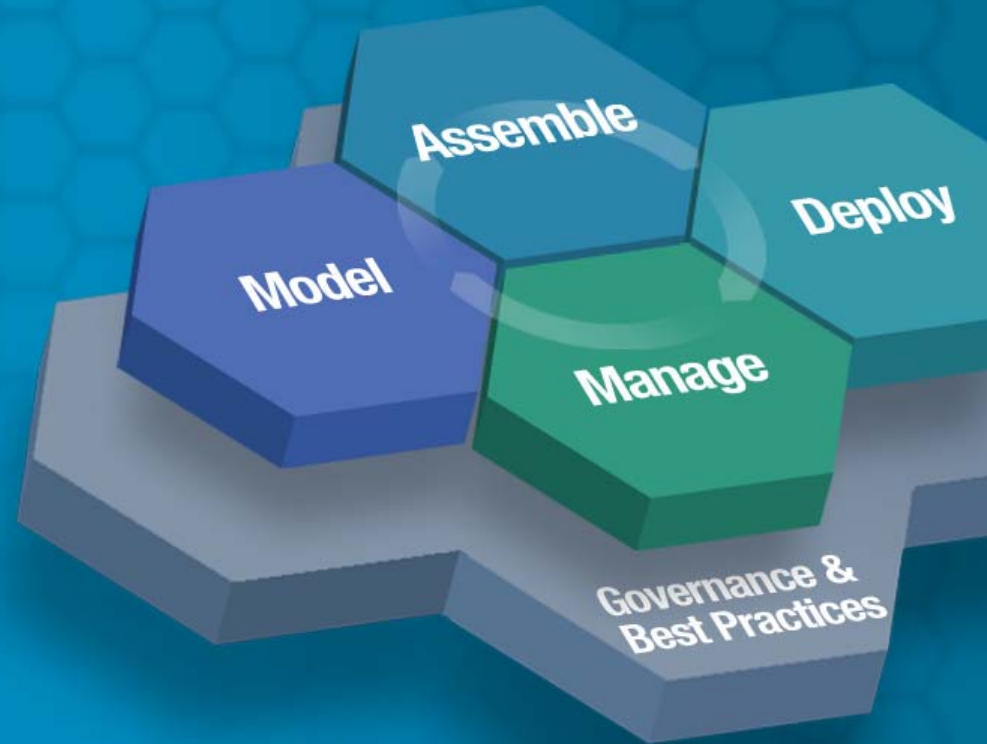
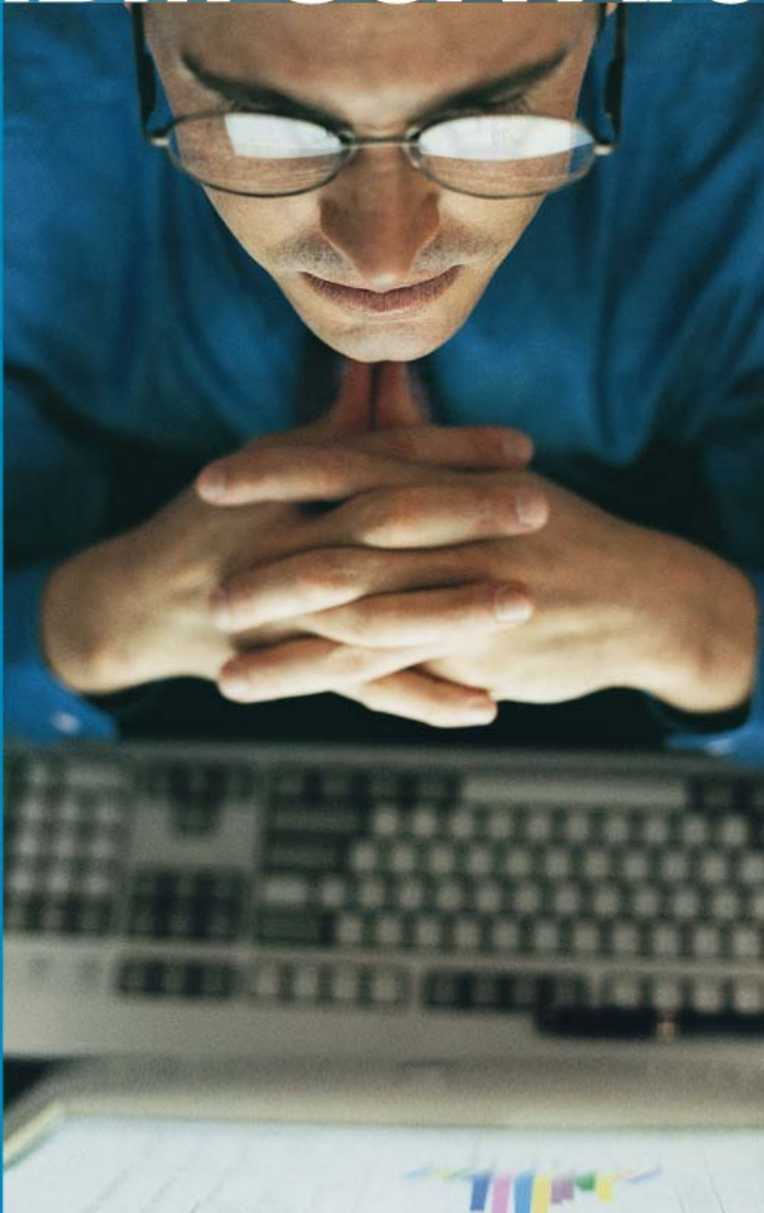


IBM SOA Architect Summit



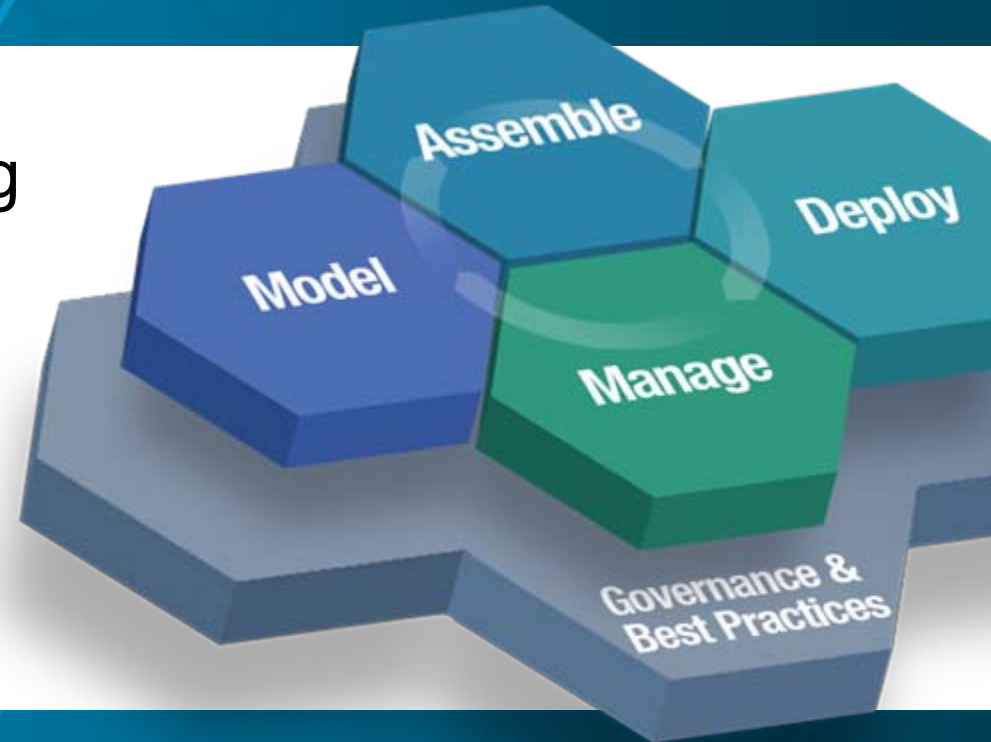
SOA on your terms and our expertise



IBM SOA Architect Summit

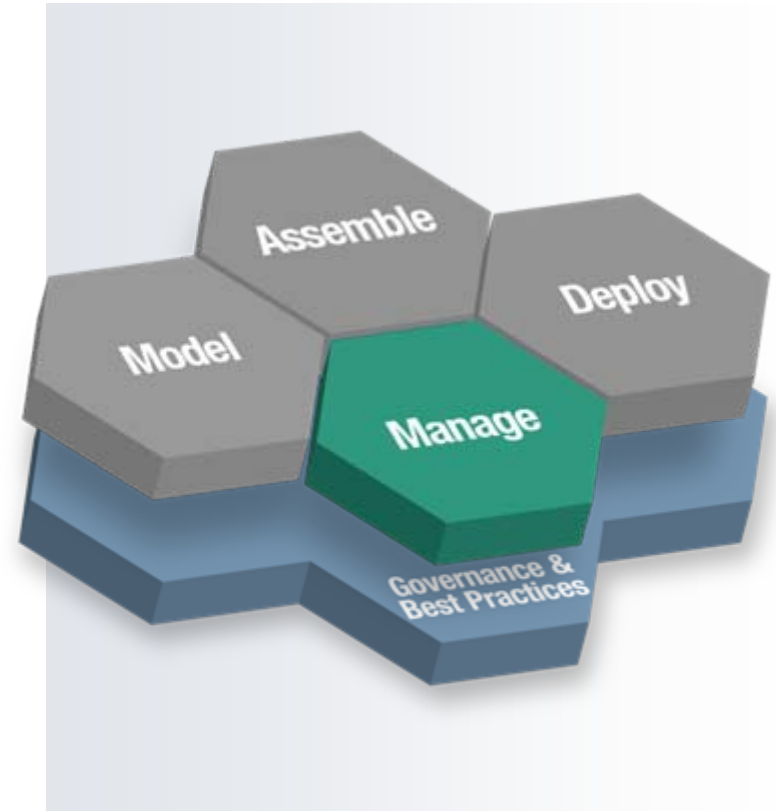
Managing and Monitoring your SOA Environment

A Presentation for the
Enterprise Architect



Agenda

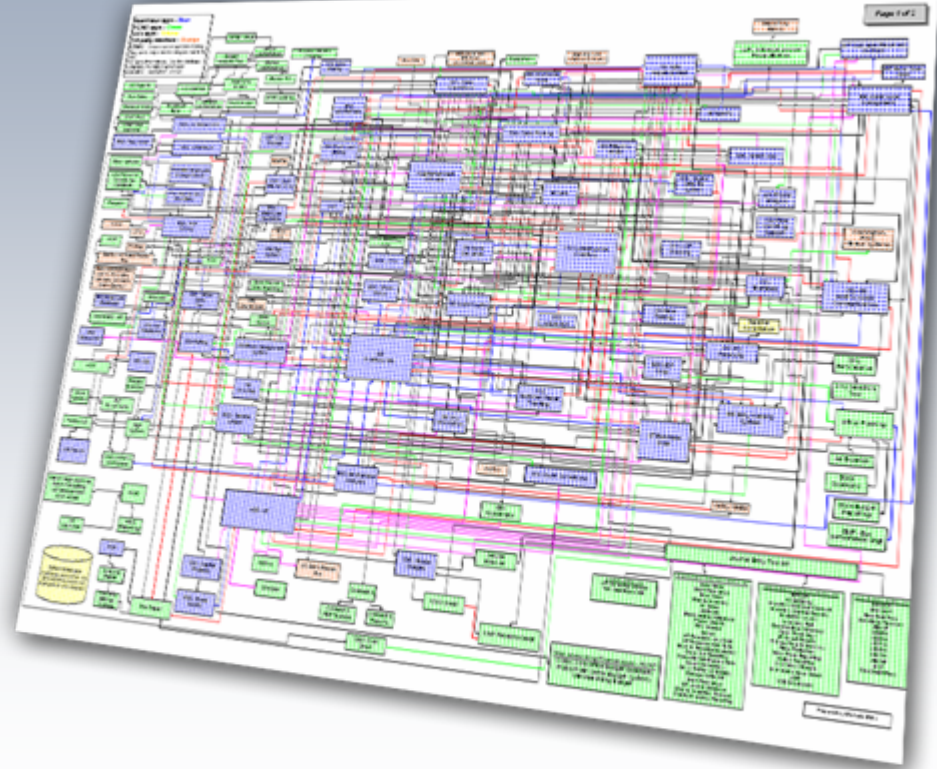
- IT Service Management
- Management Touch Points in an SOA Reference Architecture
- Managing SOA by Managing the Layers of Abstraction in an SOA IT Architecture
- Mapping to the IBM Products



Current State of IT Management

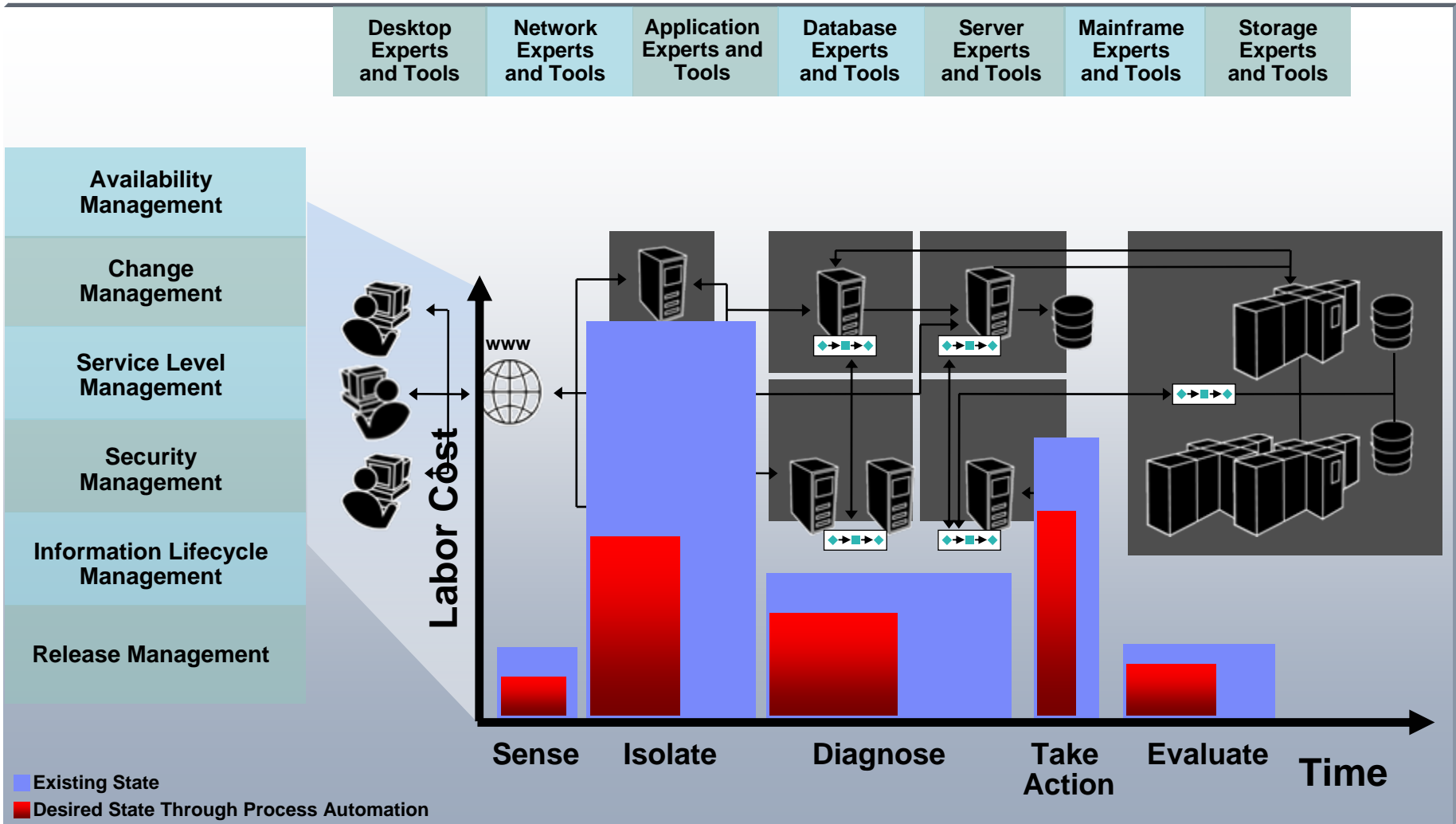
More than 70% of IT budgets are currently devoted to the maintenance and operations of existing applications and systems.

*The Yankee Group,
3/05*



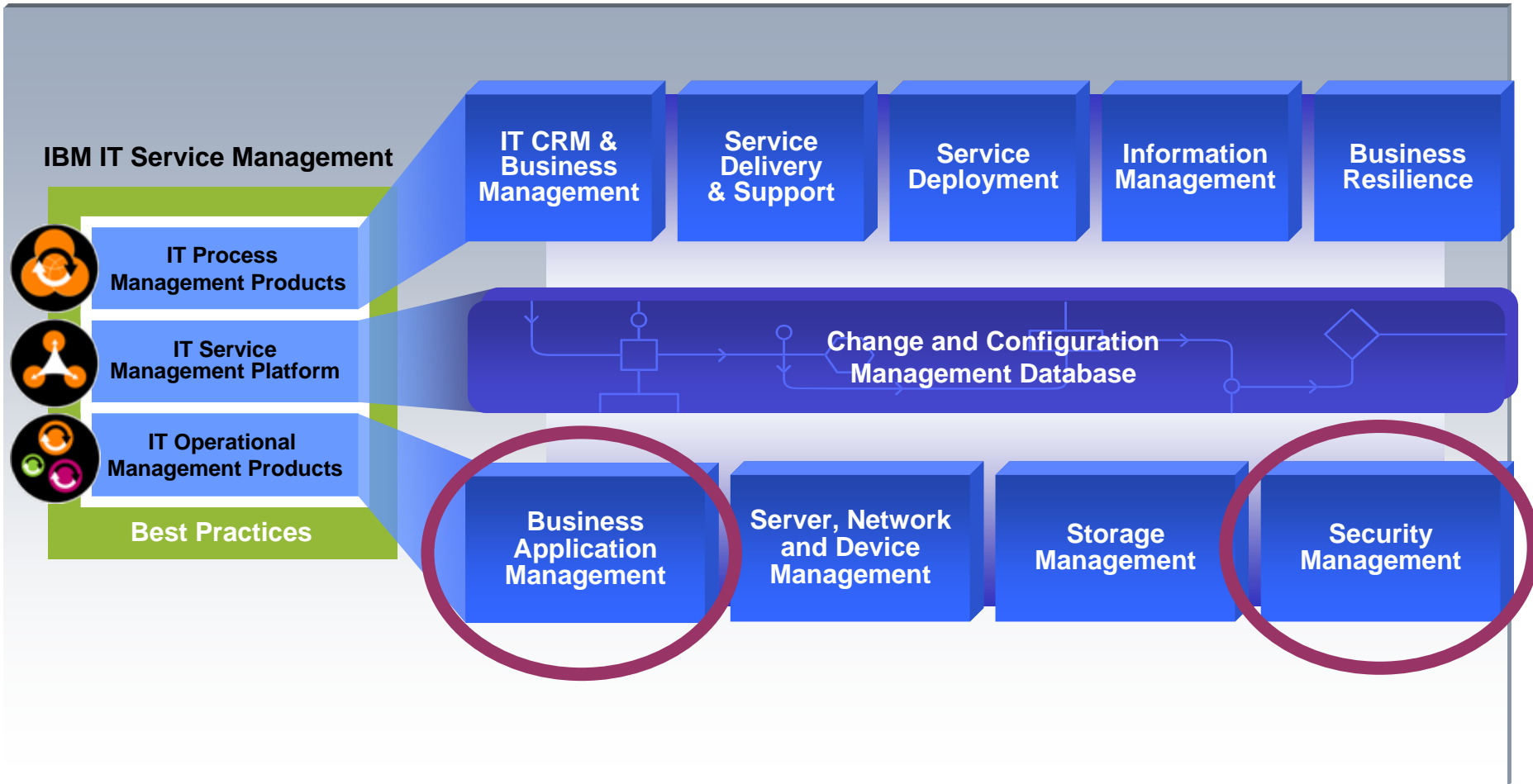
Managing Cost and Responsiveness Across IT Silos

Composite Applications Introduce Management Challenges

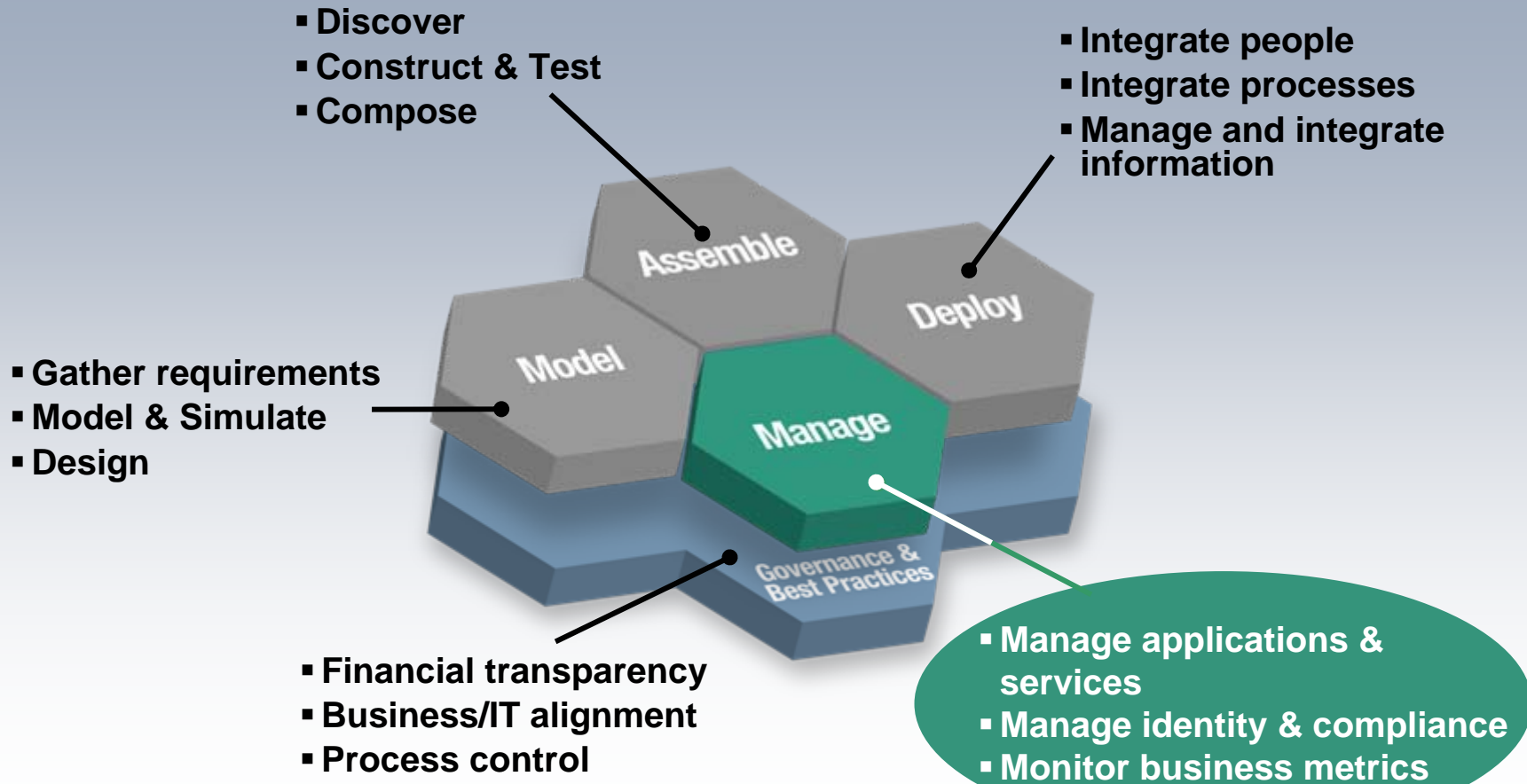


IBM IT Service Management

Built on the SOA Foundation



The SOA Lifecycle



SOA Exposes New Management Pains in Application Lifecycle

Model

Assemble

Deploy

Manage



“I need a service, does it exist?”

“Some of our services are used by our partners? How can I be sure they are meeting their SLAs?”

“How can I debug my production application without reproducing the problem?”

“Before I deploy it in production, how can I be sure that the service flow matches the design?”

“Which part of the SOA infrastructure is causing this service problem? The app server or the messaging connections?”

“I now have to write a service – how do I make sure it works securely with other services I’m dependent on?”

“Does my new SOA application meet its performance goals?”

“What’s the root-cause of this service problem – the BPEL service flow or the application?”

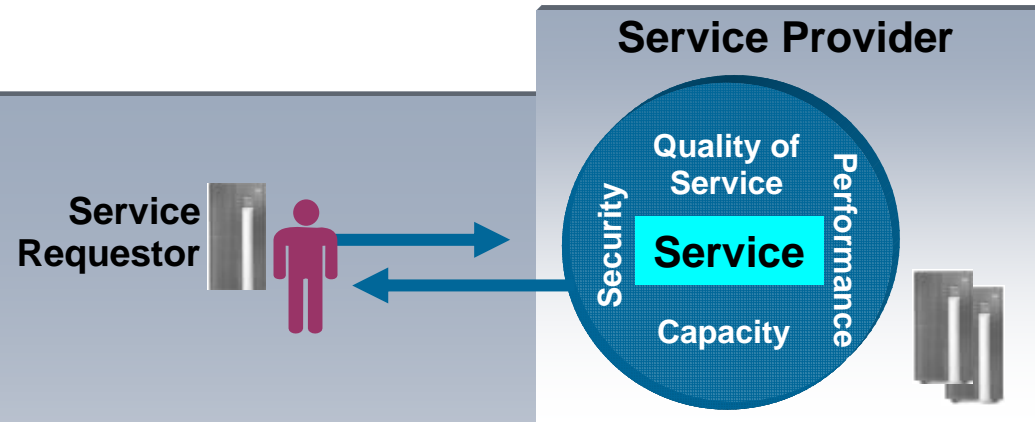
The SOA Management Challenge:

Treat Services as Managed Resources

- Services should be treated as a **manageable resources** within the context of systems management
- **Traditional disciplines apply** so that each service:
 - Has a Service Level or Quality of Service associated with it
 - Can be secured and audited
 - Can be deployed and configured
 - Can be monitored and optimized
 - Can be versioned and deprecated
- Services are subject to **ITIL processes** for Service Delivery and Service Support
 - Change, Configuration, Availability, Release, etc.

Why Is SOA Different?

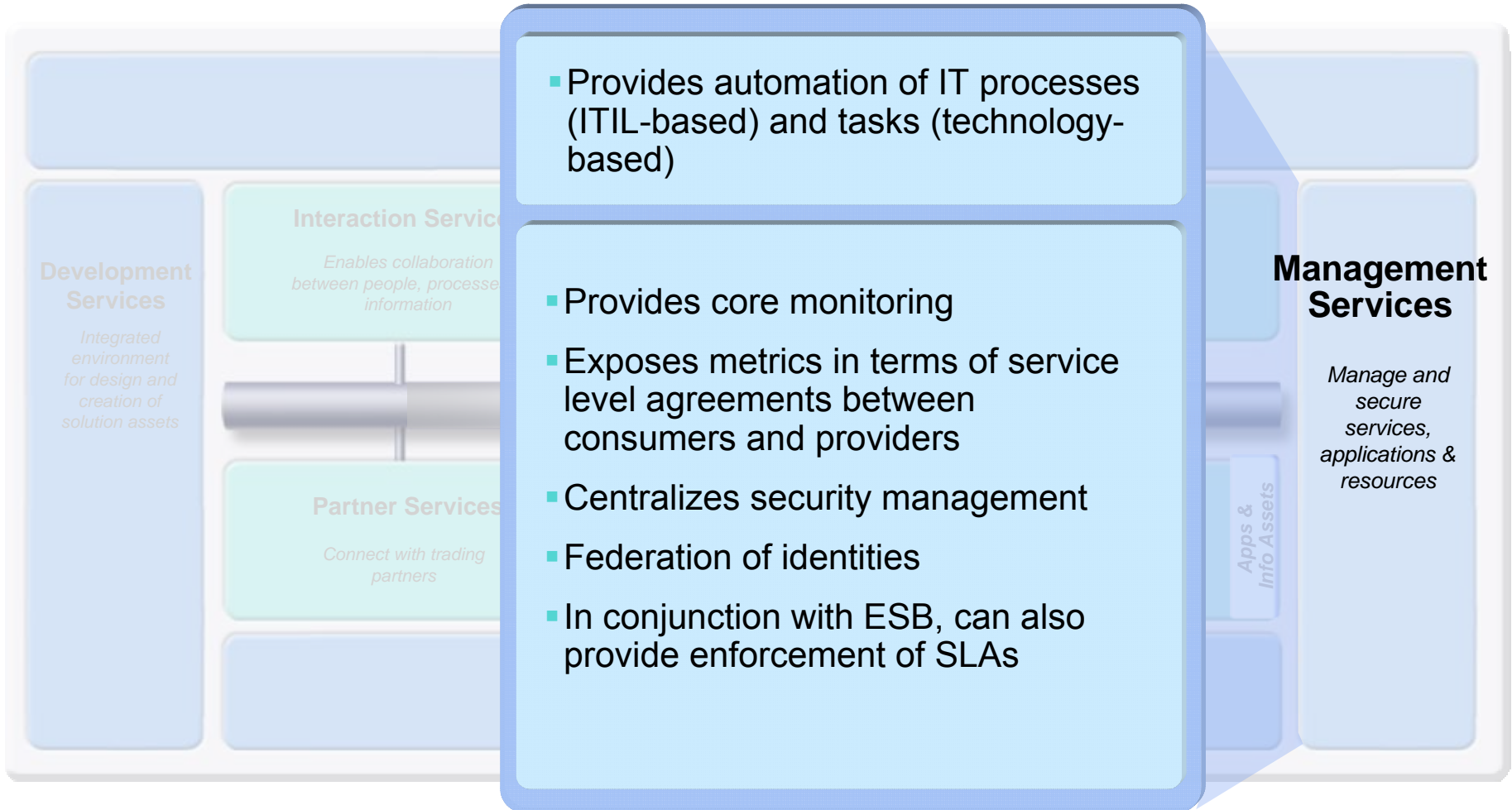
- What differentiates a service-oriented approach are the *service characteristics*



- A service not only has a set of calls and responses, it has many other characteristics: *performance, availability, capacity, quality of service and security*
- SOA is not only about exposing *how* you can call a service but also defining a set of characteristics for how these calls *will be serviced*:
 - how fast they should respond
 - when will they be available
 - who may make various calls
 - how many calls you can make in a certain period of time
 - what calls need to be logged
 - how should calls be routed

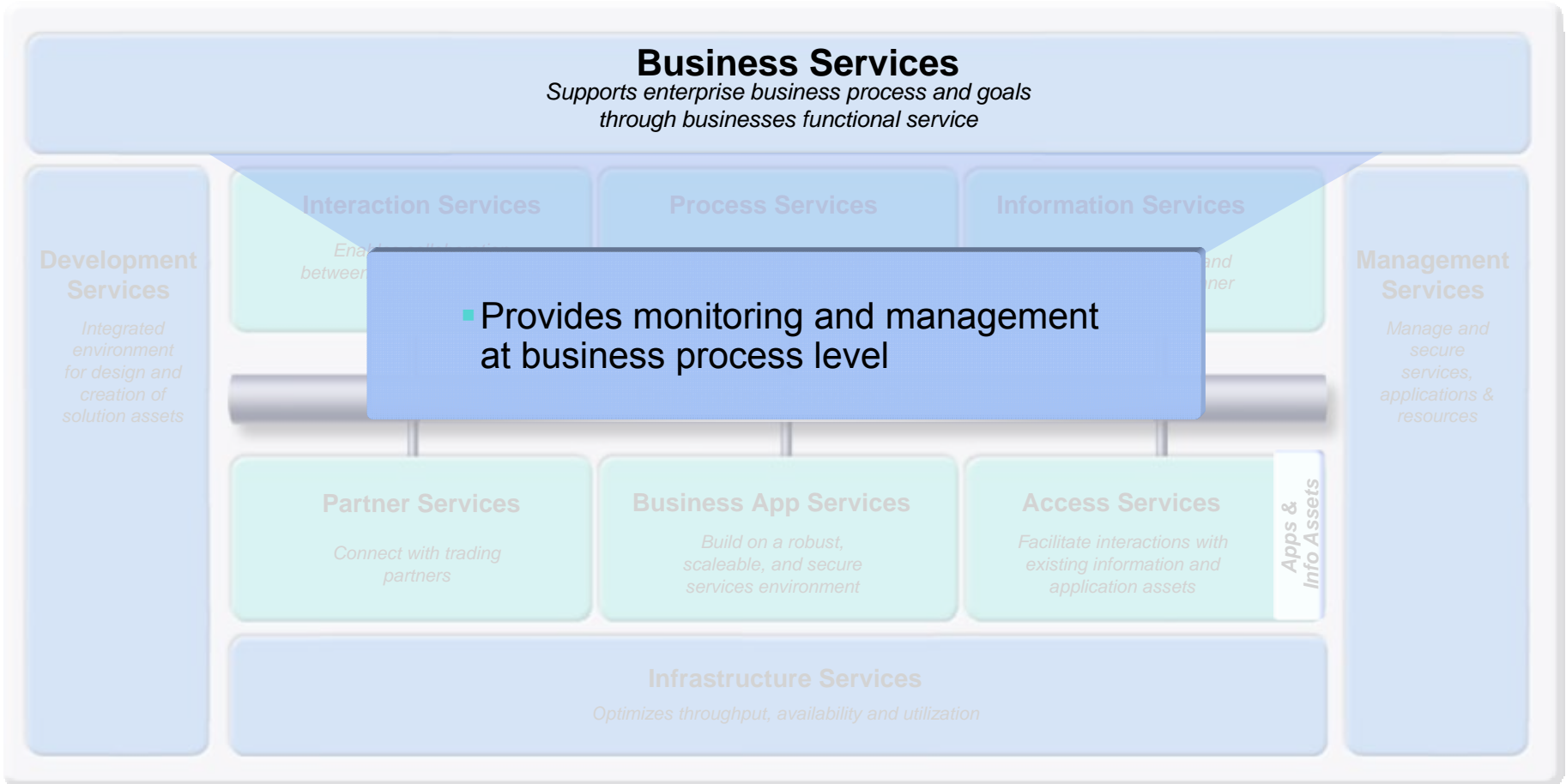
SOA Reference Architecture

Supporting The SOA Lifecycle



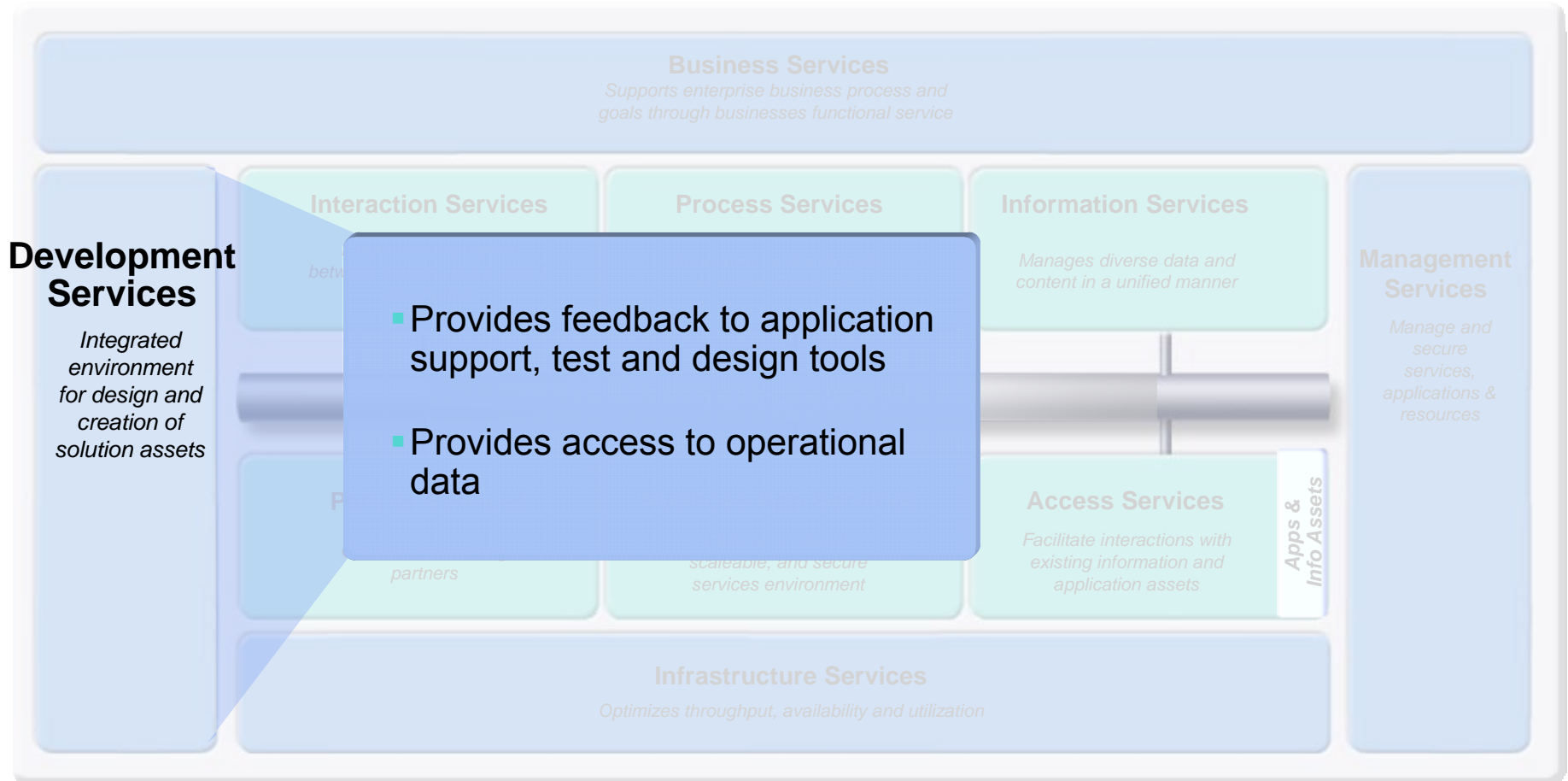
SOA Reference Architecture

Supporting The SOA Lifecycle

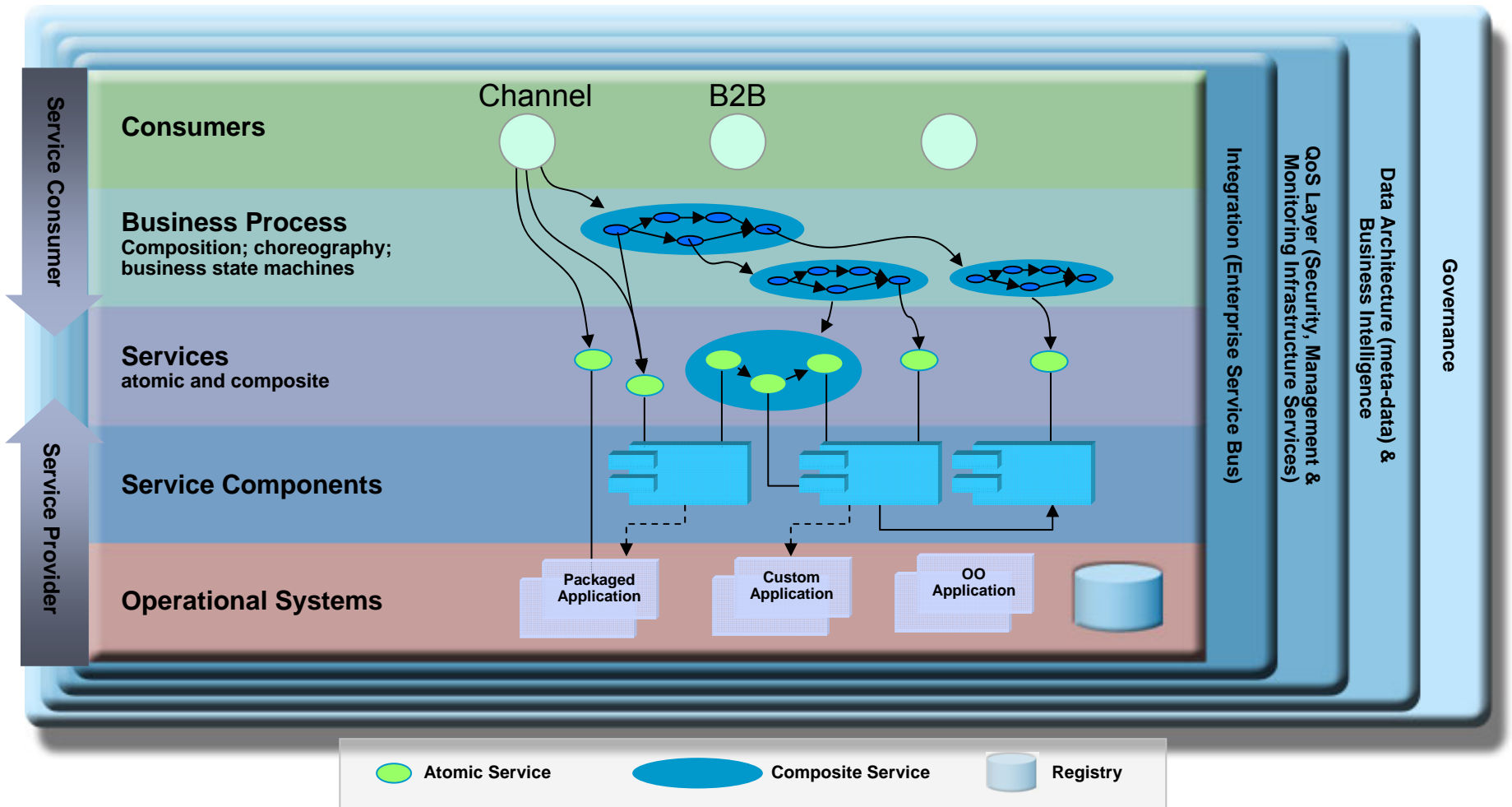


SOA Reference Architecture

Supporting The SOA Lifecycle

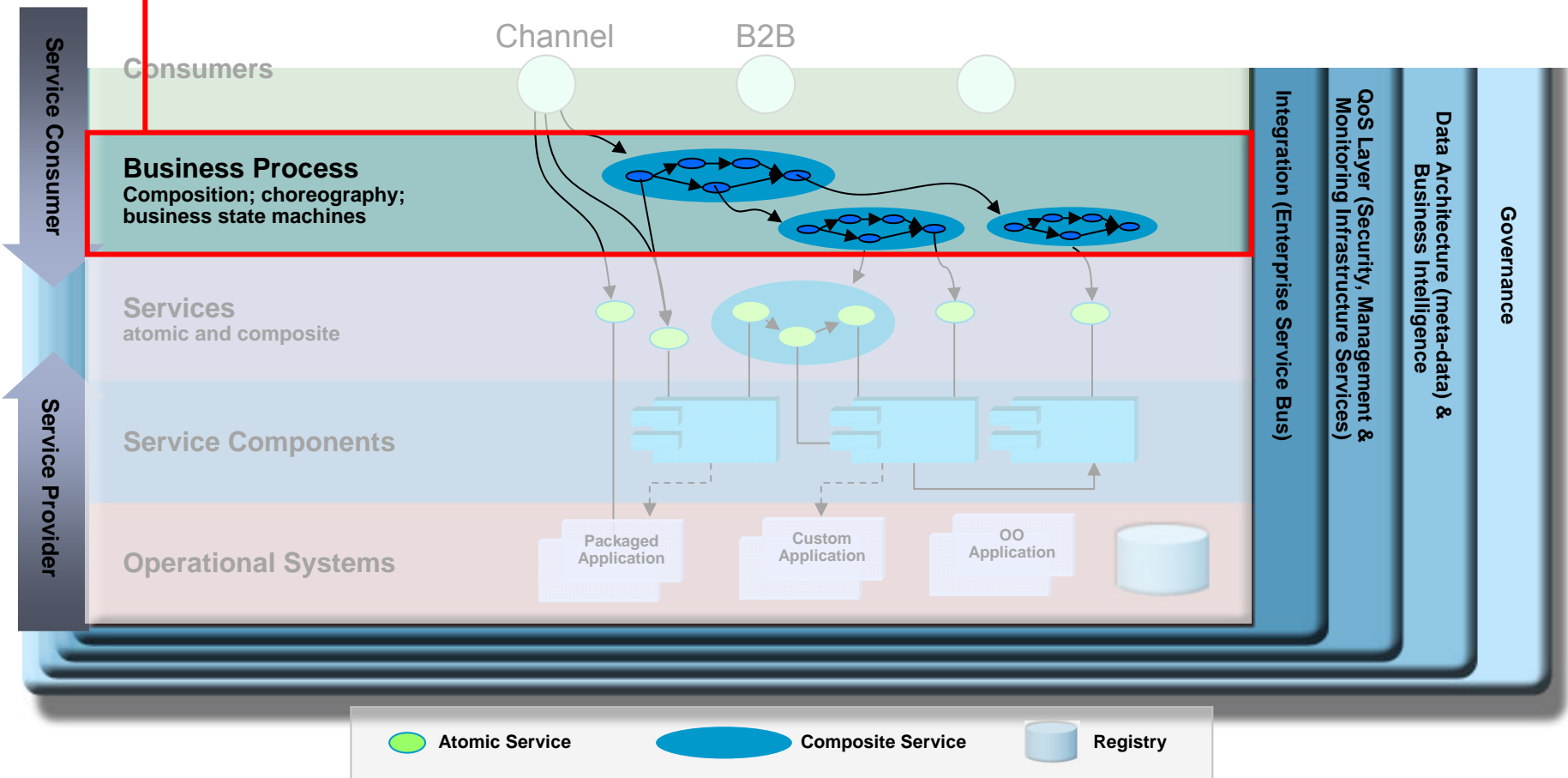


Requirements for SOA Management



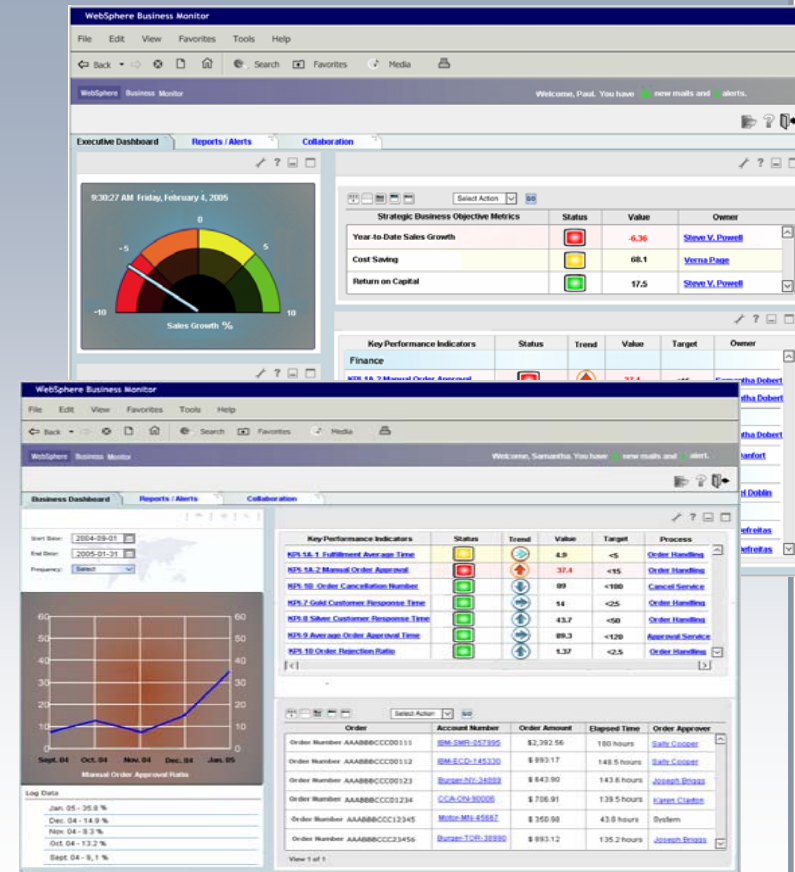
Requirements for SOA Management

- **Business Process Monitoring:** Monitor state of business processes



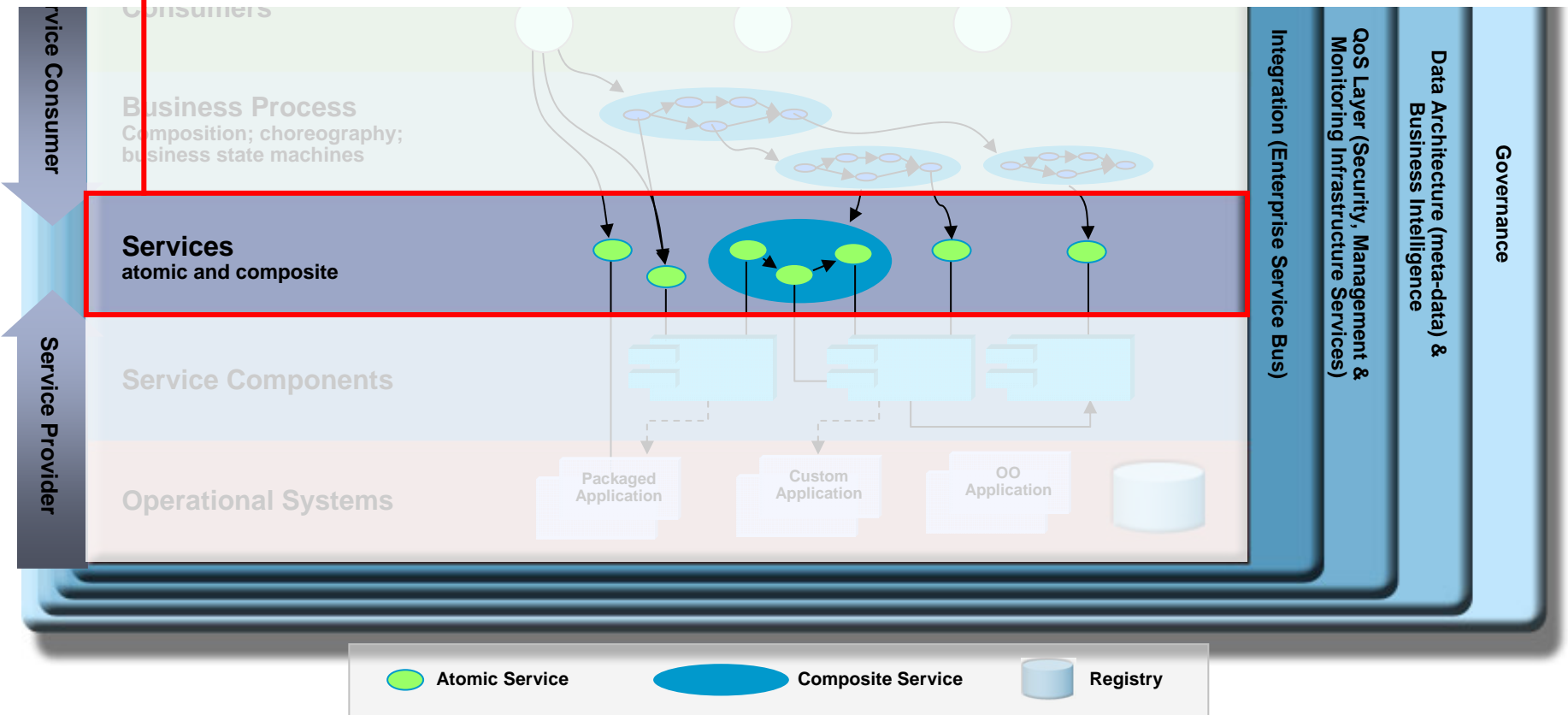
Business Process Monitoring

- Report on business performance measured against targets (scorecard)
 - Share growth and new product revenue
- Track business process flow
 - Status of particular insurance claim
 - Bottlenecks due to human tasks
- Monitor business process metrics
 - Duration, cost, branch ratios
- Business Analysis through aggregation and multidimensional reporting
 - Total monthly revenue by customer



Requirements for SOA Management

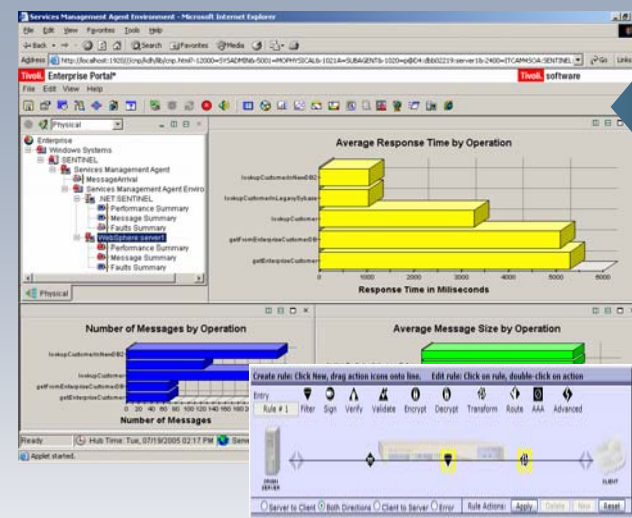
- **Services Management:** Discover, monitor, secure and manage services to meet SLAs



Services Management


Lifecycle Support for Web Services

- To ensure service levels conform to agreed upon specifications, you need:
 - Views and analysis of Web service interactions for IT Operations to quickly identify source of errors, and take corrective action through workflow and mediations
 - Detailed views of operational SOAP/XML message content, flow patterns and topology for Web services experts and support teams
 - Highly performing and flexible enforcement points

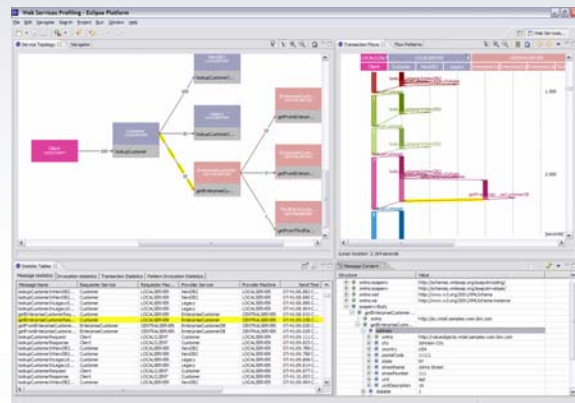


The screenshot displays the 'Services Management Agent Environment' interface. It features a navigation tree on the left, a main dashboard with three charts: 'Average Response Time by Operation' (a horizontal bar chart), 'Number of Messages by Operation' (a vertical bar chart), and 'Average Message Size by Operation' (a horizontal bar chart). Below the charts is a 'Rule Editor' window showing a workflow diagram with various actions like Filter, Sign, Verify, Validate, Encrypt, Decrypt, Transform, Route, AAA, and Advanced.

IT Operations
"Don't give me another console"



Web Services Expert
"Show me the service details!"

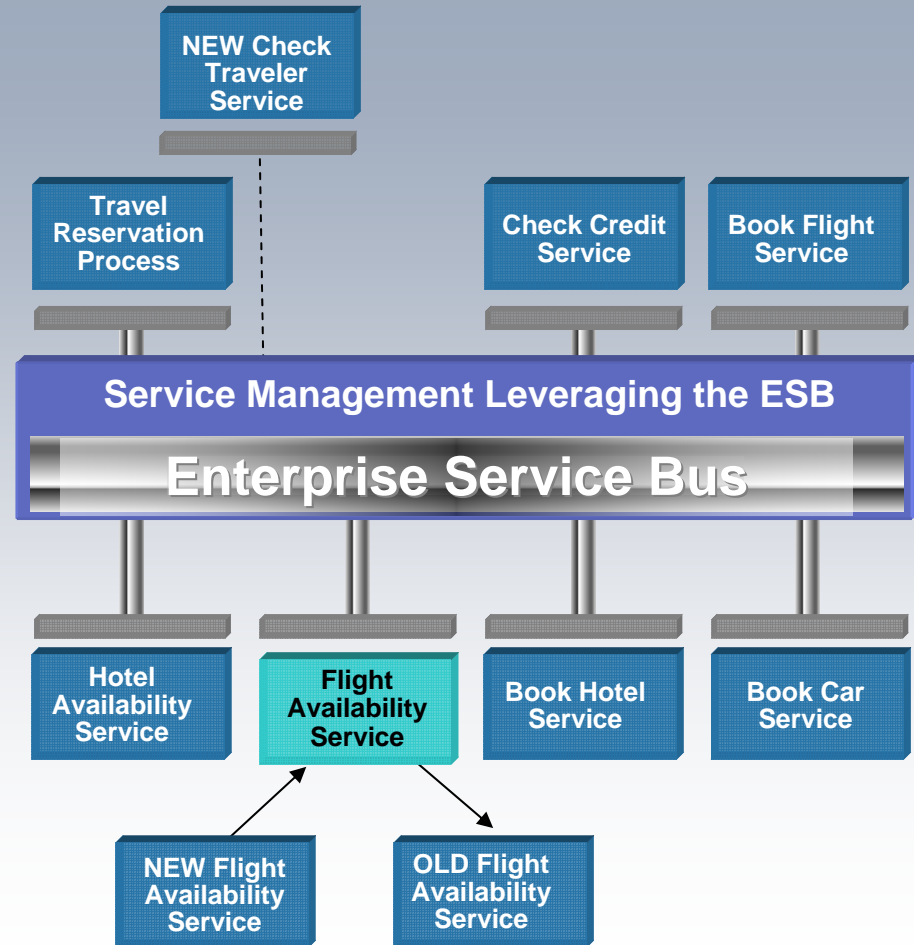


The screenshot shows the 'Web Services Profiling' tool. It displays a complex flow diagram with various nodes and connections, alongside a table of data with columns for 'Message ID', 'Source Address', 'Target Address', 'Pattern Identifier', 'Response Time', and 'Status'.

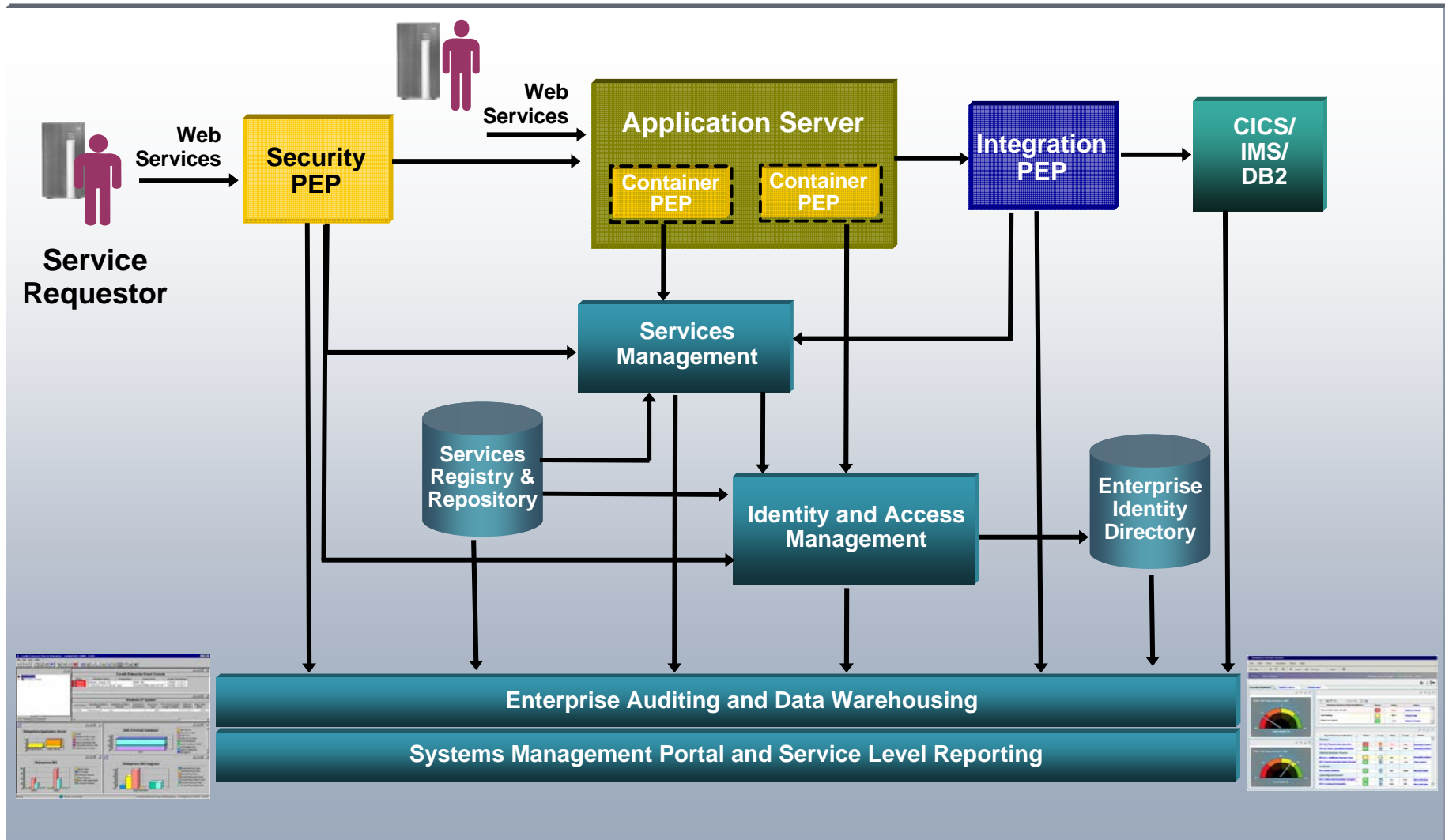
Enterprise Service Bus and SOA Management

Management tools naturally target ESBs as enforcement endpoints:

- To perform **Routing** of messages based on system capacity, Quality of Service, and SLAs
- Leverage **Conversion** and **Transformation** capabilities to comply with policy
- Centralize **Handling** of IT events related to Services

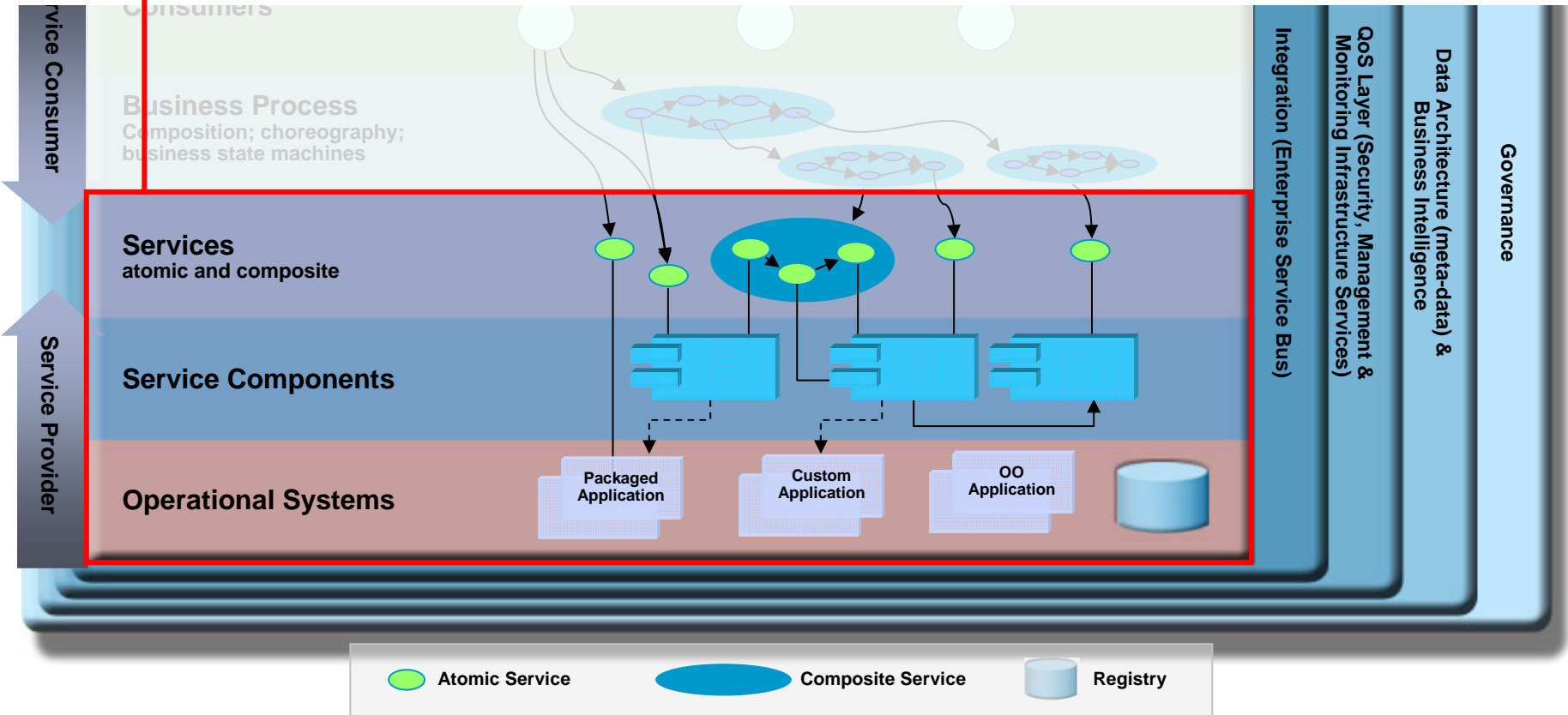


Logical Elements of an SOA Management Solution



Requirements for SOA Management

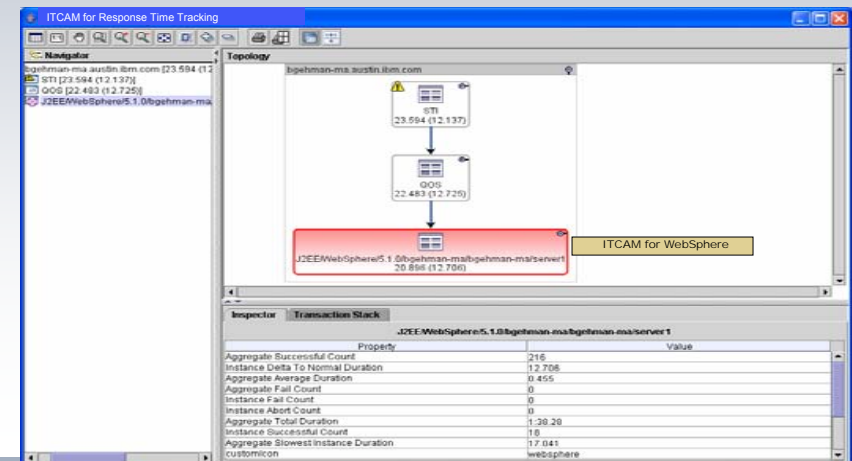
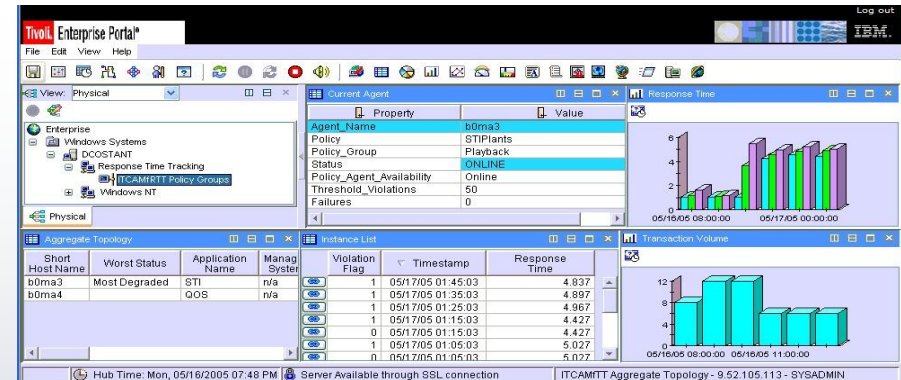
- Manage Transaction Performance:** Measure transaction response times to discover bottlenecks, isolate infrastructure



Manage Transaction Performance

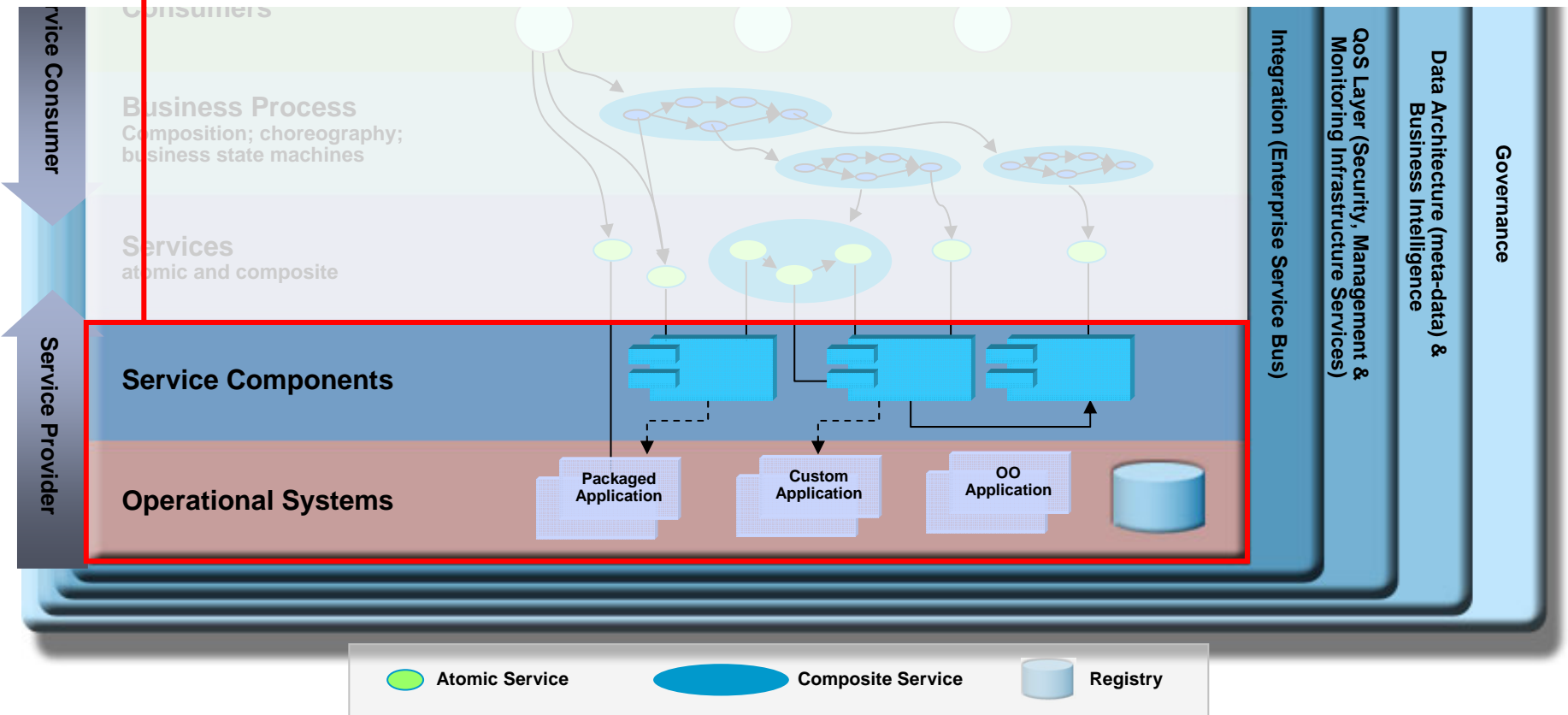
Provide Key Response Time Metrics Across Platforms

- Customers find it very difficult to identify and isolate performance bottlenecks in composite applications that span technology and platform boundaries
- Need to provide performance instrumentation that is lightweight and can be dynamically configured to identify problems before customers call
- ARM-based instrumentation is the industry standard that can be leveraged to isolate the problem



Requirements for SOA Management

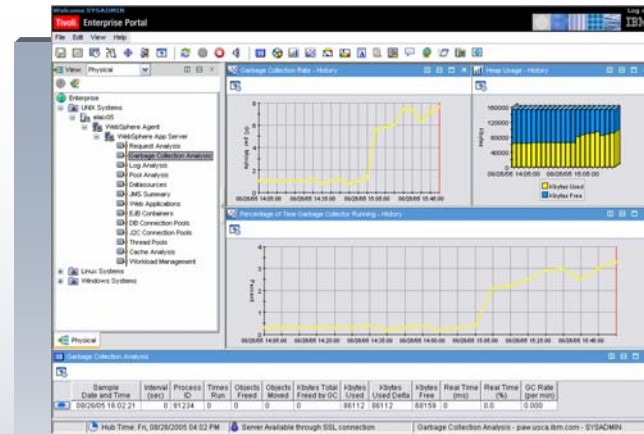
- **Manage the Infrastructure:** Deep dives into specific resources



Manage Supporting Middleware

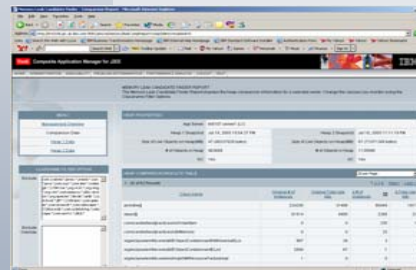
Comprehensive Deep-dive Monitoring

- Identify and quickly correct applications that are down or performing slowly
- Need to provide comprehensive in-flight transaction display that includes the name of the hung class/method
- Introspect messaging and brokering subsystem for real-time metrics and historical data analysis
- This can significantly improve the performance and availability of J2EE applications by reducing problem identification and resolution time



IT Operations

Subject Matter Expert



J2EE Applications



Messaging Infrastructure

Manage Service Levels

Enterprise-wide Reporting on Service Level Compliance

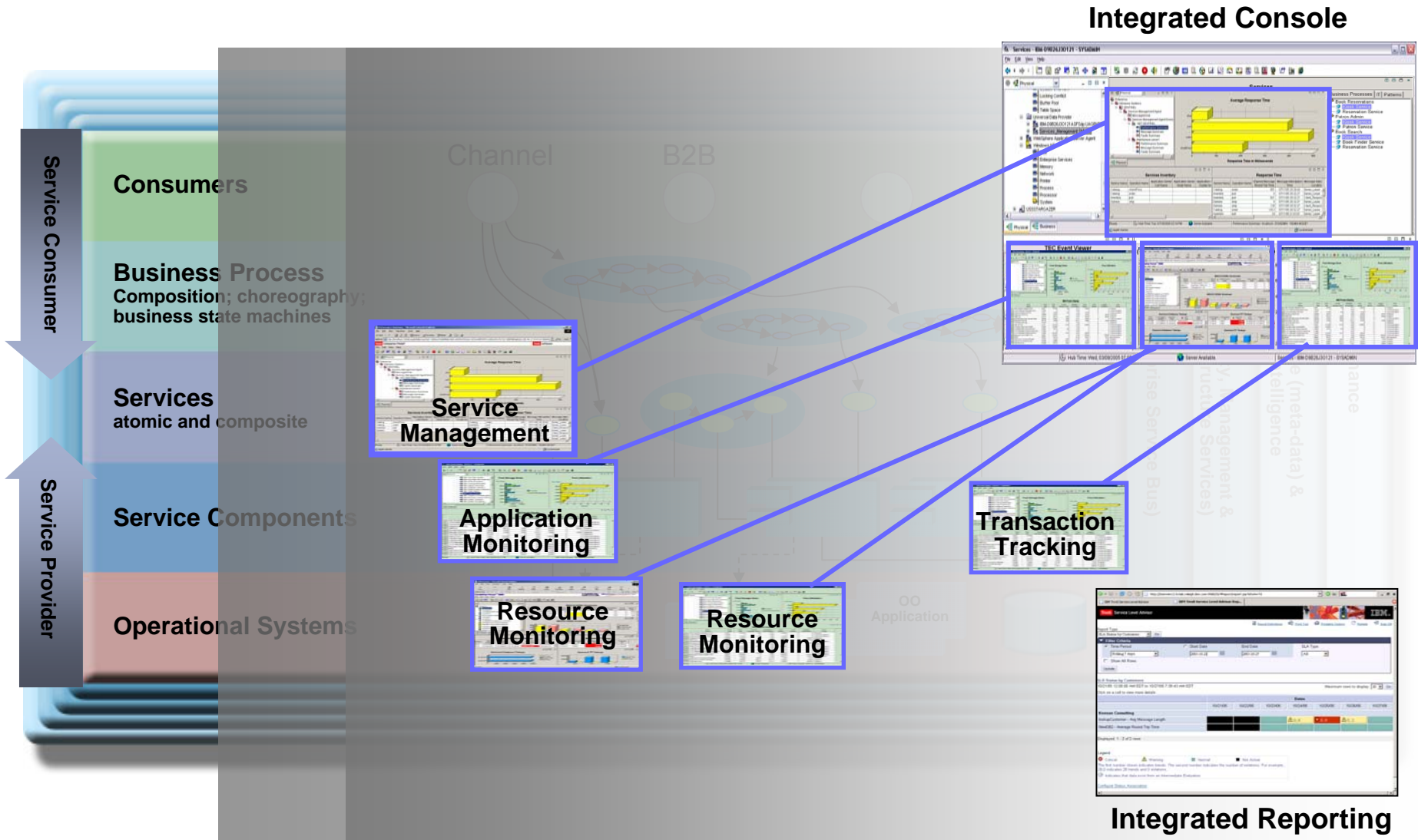
- Need to define reports on a customer basis
- Report on compliance to service levels and service level agreements
- Represent all aspects of service level performance, from business process layer to IT infrastructure
- Perform trending analysis to predict outages

The screenshot displays the IBM Tivoli Service Level Advisor web interface. The report is titled "SLA Status by Customers" and is filtered for a "Rolling 7 days" period from 2005-10-21 to 2005-10-27. The report shows performance metrics for "Keenan Consulting" across several dates from 10/21/05 to 10/27/05. The metrics include "lookupCustomer - Avg Message Length" and "NewDB2 - Average Round Trip Time". The table uses color coding to indicate status: black for "Not Active", green for "Normal", yellow for "Warning", and red for "Critical".

	Dates						
	10/21/05	10/22/05	10/23/05	10/24/05	10/25/05	10/26/05	10/27/05
Keenan Consulting							
lookupCustomer - Avg Message Length				⚠ 0, 6	⚠ 0, 8	⚠ 0, 2	
NewDB2 - Average Round Trip Time							

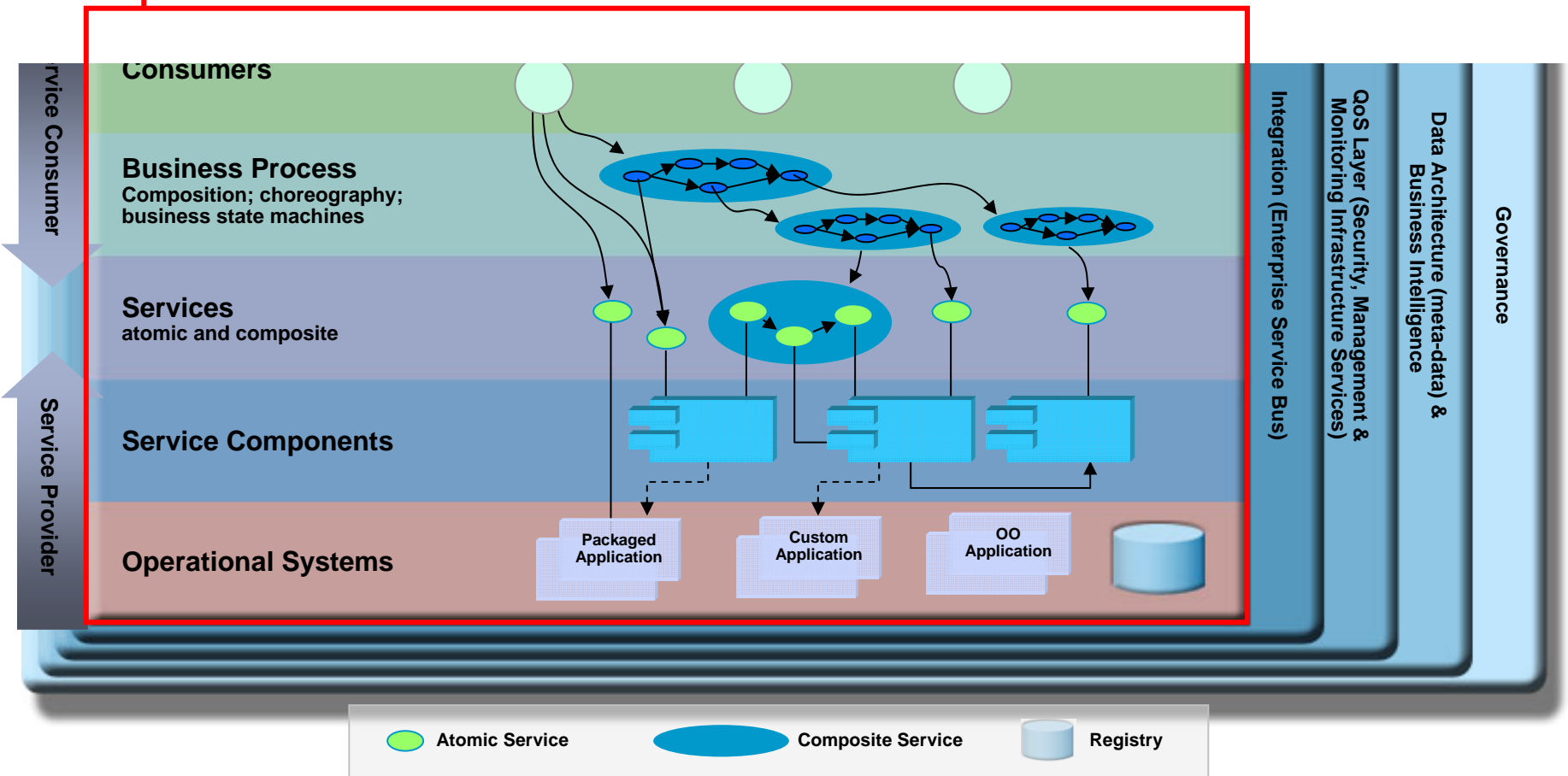
Legend: Critical (⚠), Warning (⚠), Normal (■), Not Active (■). The first number shown indicates trends. The second number indicates the number of violations. For example, 28, 0 indicates 28 trends and 0 violations. ⚠ indicates that data exist from an Intermediate Evaluation.

A Comprehensive View of SOA Resources



Requirements for SOA Management

- **Integrated Security & Compliance:** Identity, Authentication, Authorization, Auditing and Compliance



SOA Security

What is “Federated Identity Management”?

■ Definition

- An “identity federation” is a federation in which identity management (authentication, access control, auditing, and provisioning) is distributed between the partners based on their role within the federation
- An Identity Federation can allow users from one federation partner to **seamlessly** access resources from another partner in a secure and **trustworthy** manner

■ Roles

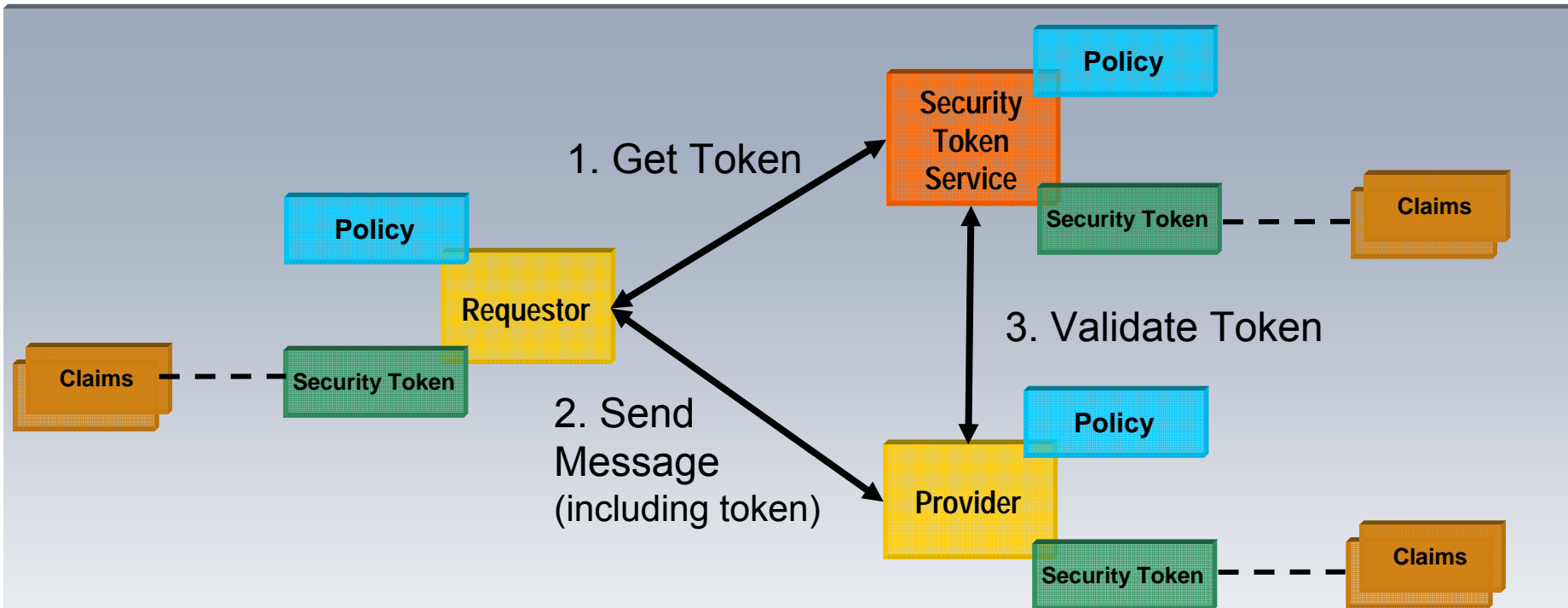
- End user
- Identity Provider (IdP)
- Service Provider (SP)

■ Functions

- Single Sign-On/Sign-Off (including “global” sign-off)
- Provisioning/De-provisioning
- Account Linking/De-linking

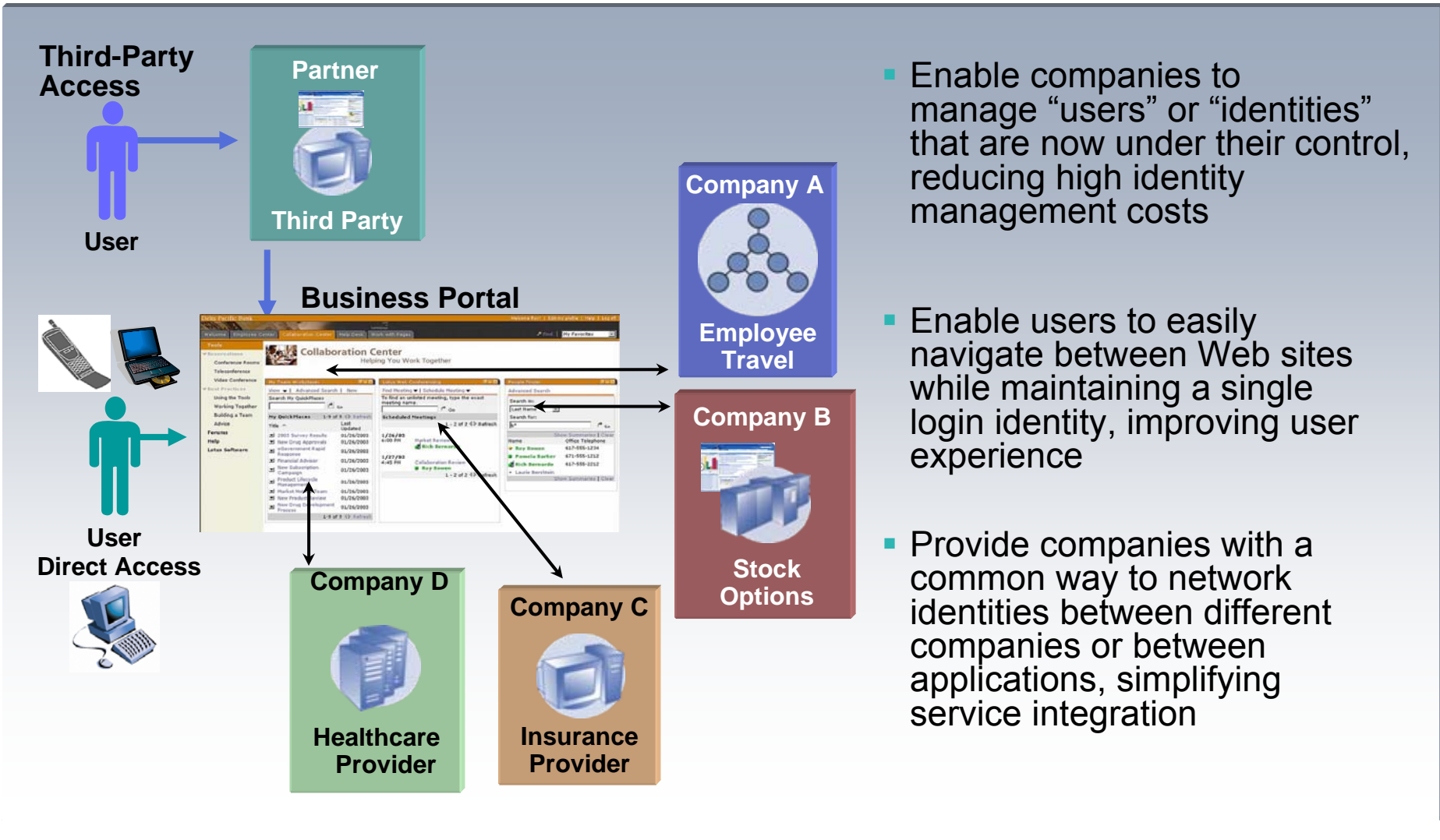


SOA Security – Trust Model



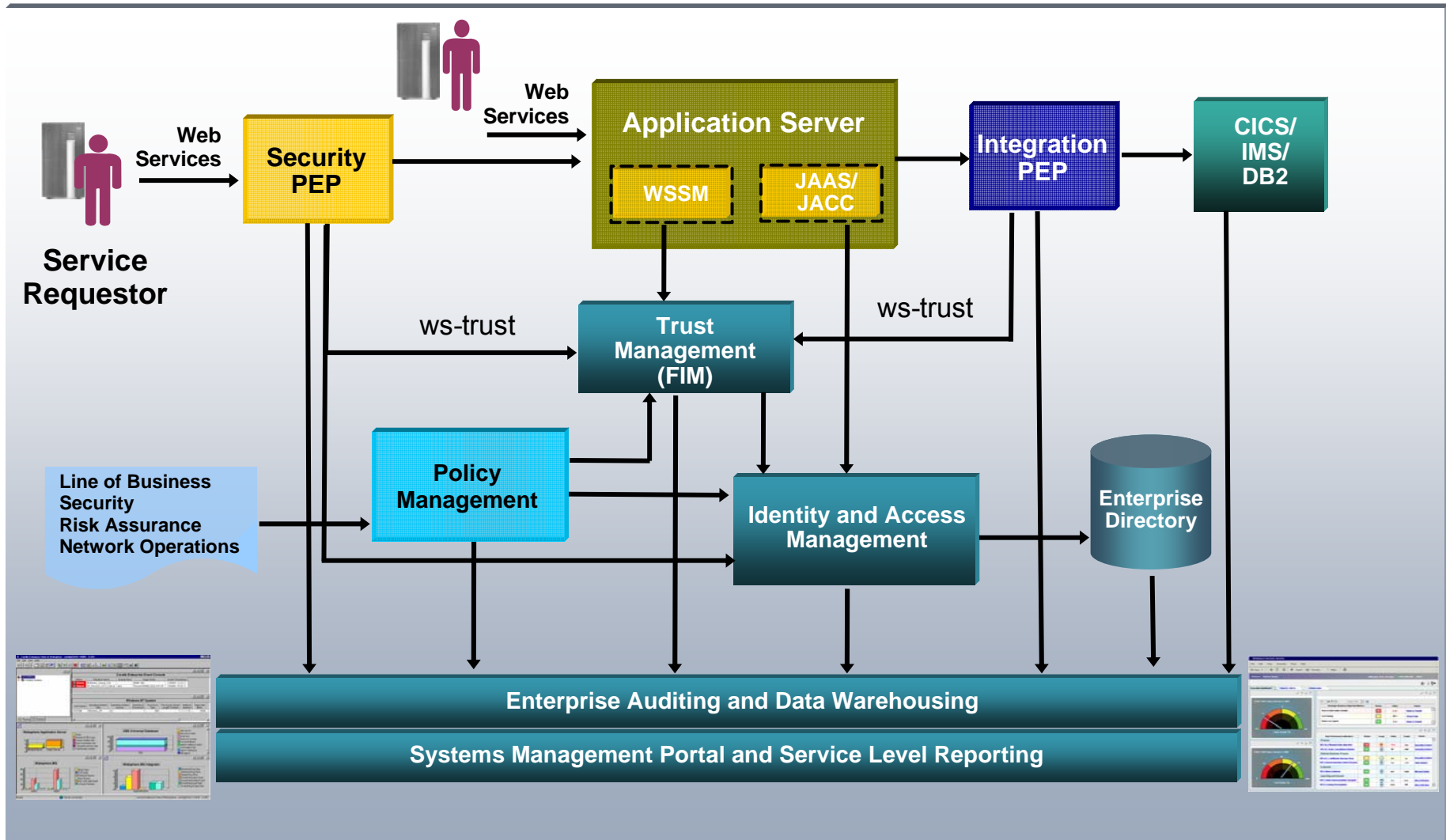
- Identity Federation and Web Services requires trust
 - This trust is based on agreements between partners & expressed as policies
- Trust can be enabled by technology
 - Trust requirements expressed as infrastructure policies and requirements
 - Security tokens include identity information; Cryptographic keys used to sign Security Tokens
- Technology needs to be standards based
 - Standard ways to express and exchange policies that reflect trust relationships
 - Agreed token format, information content, signing and encryption methods

Managing Identities and Access to Cross-company Resources



- Enable companies to manage “users” or “identities” that are now under their control, reducing high identity management costs
- Enable users to easily navigate between Web sites while maintaining a single login identity, improving user experience
- Provide companies with a common way to network identities between different companies or between applications, simplifying service integration

Logical Elements of SOA Security



Addressing the Identity Integration Issue

Capabilities of a Complete Federated Identity Solution

Federated User Experience

- Federation Introduction/Termination
- Federated Single Sign On, Single Sign Off
- Session Management
- Integration with Identity and Access Management
- Integration with middleware platforms

Federated User Lifecycle Management

- Partner enrollment/De-enrollment
- Partner Provisioning/De-Provisioning of identity accounts
- Partner User Registration

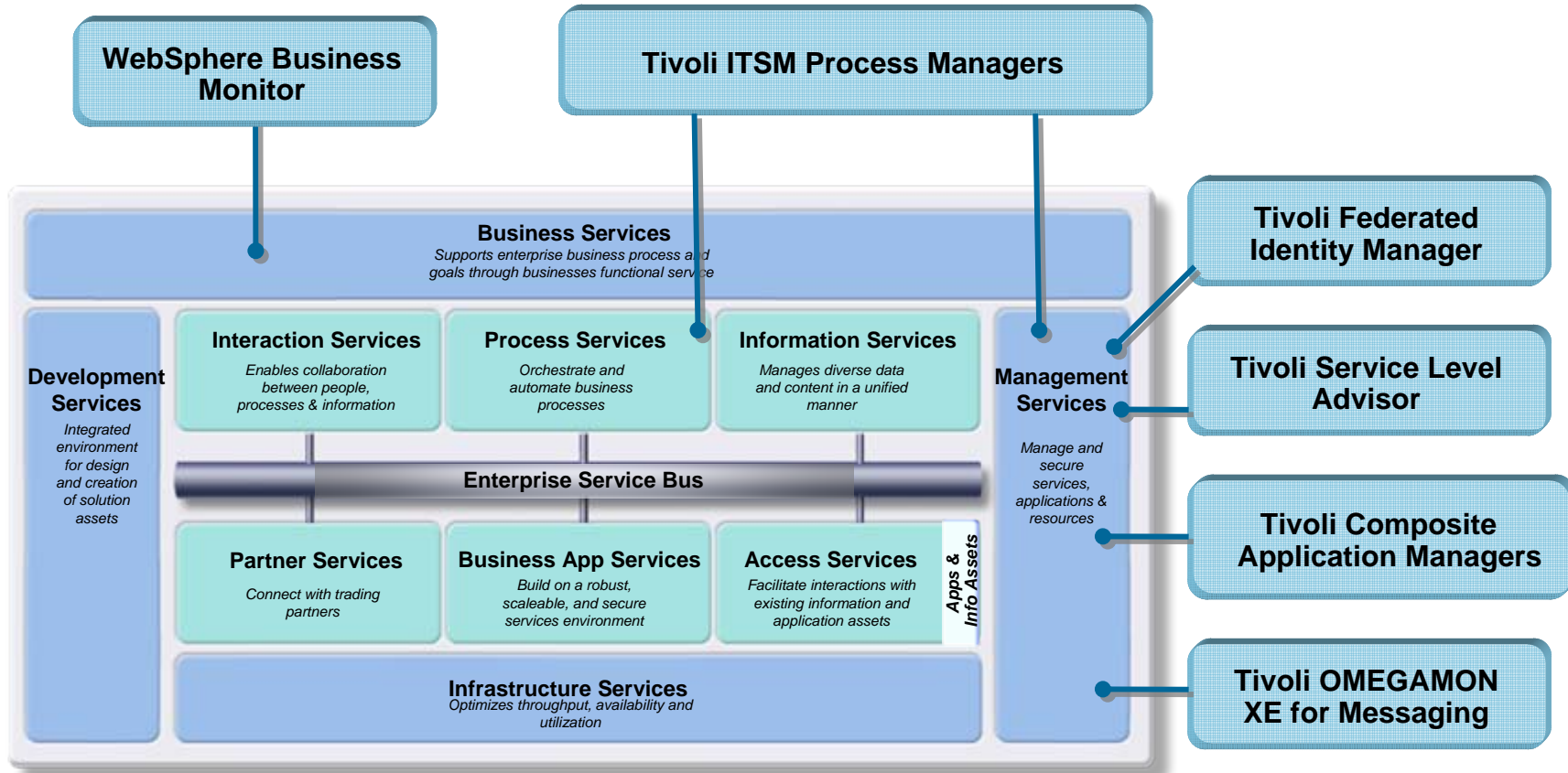
Web Services Security Management

- Authentication for service access
- Service access control
- Seamless integration of disparate applications

Trust Management Platform

- Partner Key Management
- Trust Service, Security Token Service
- Identity and Authorization Services

Mapping to the IBM Products



धन्यवाद

Hindi

多謝

Traditional Chinese

Teşekkür ederim

Turkish

Спасибо

Russian

Gracias

Spanish

شكراً

Arabic

Thank You

Mange tak

Danish

Grazie

Italian

Danke

German

Merci

French

நன்றி

Tamil

多谢

Simplified Chinese

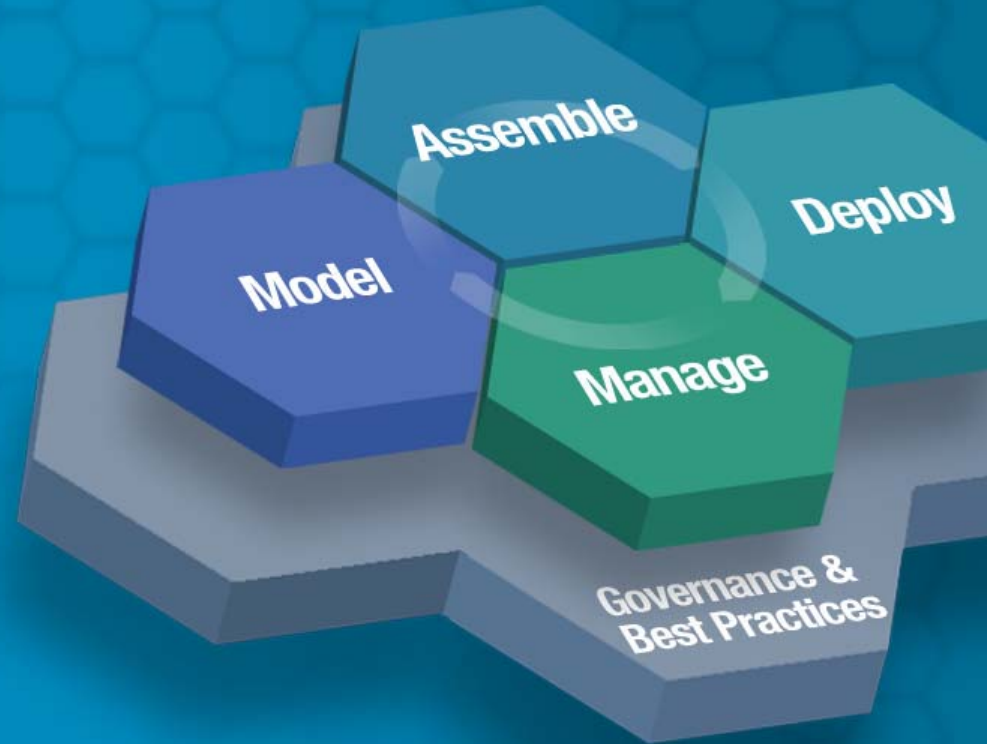
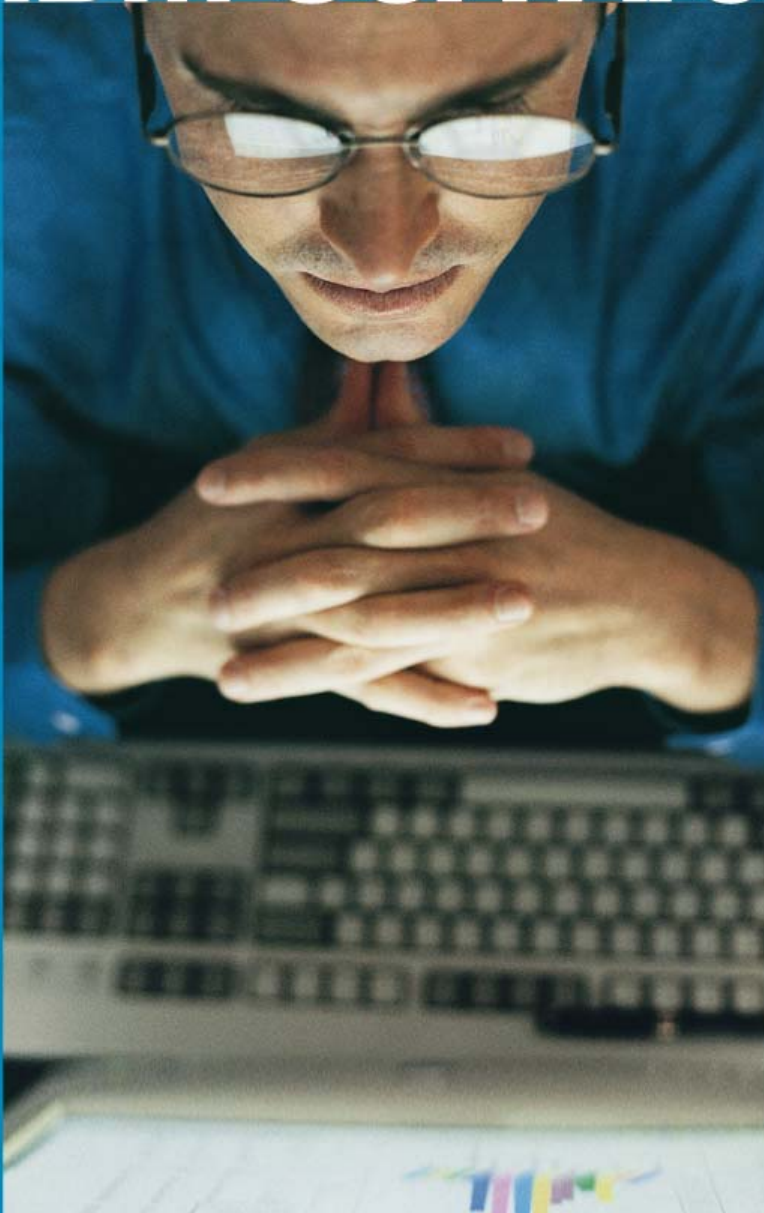
감사합니다

Korean

ありがとうございました

Japanese

IBM SOA Architect Summit



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