IBM SOA Technology Summit

Moving Ahead With SOA

Managing Service Oriented Architectures

John Knutson

Market Manager – SOA Management

IBM, Tivoli

SOA on your terms and our expertise

© 2005 IBM Corporation

Agenda

Management and Security – key to successful implementation

The impact of integrating business with technology

SOA Management – why is it different?

Challenges of Managing SOA

Managing Service Oriented Architectures

Securing Service Oriented Architectures

The CEO Challenge

Bridging the business and technology integration gap

- **78% of CEOs believe that integrating business and technology is of great importance to driving business growth**
- **Only 45% of CEOs believe that they have successfully integrated business and technology in their organizations**

- ***"…[organizations] must use technology to stay ahead of the curve…"***
- ***"Technology must be integrated in the early stages of business strategy …"***
- ***"Technology is the only way to cope with the surge of new work… [and] opportunities."***

Source: IBM Global CEO Survey, Jan. 2006

Integration Delivers Significant Business Benefits

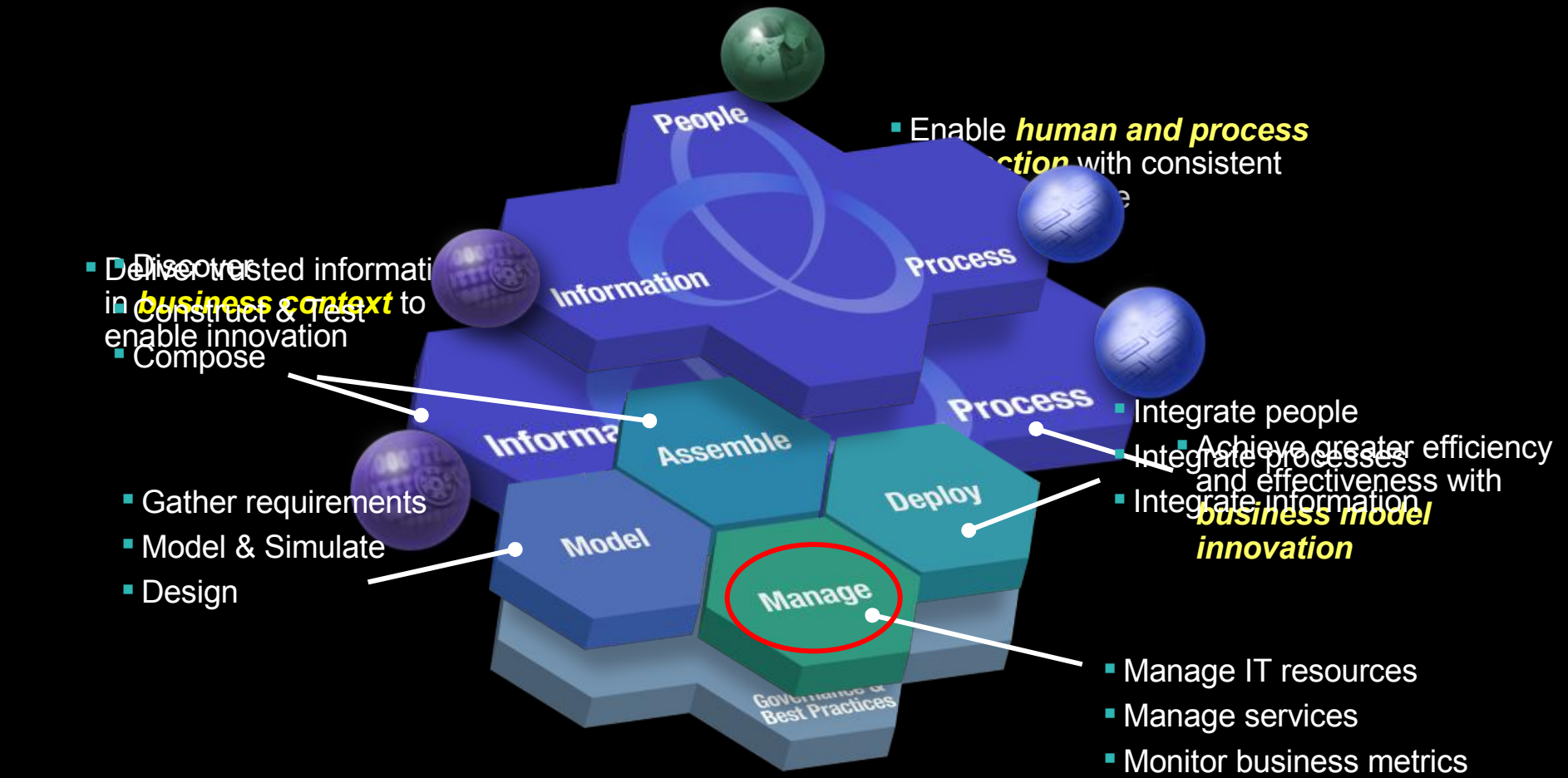
CEOs who have extensively integrated business and technology show superior results compared to CEOs with limited integration

Extensive integrators are more successful:

- **2X as successful in reducing costs**
- **2X as successful increasing quality and customer satisfaction**
- **3X as successful increasing revenue**

Business Centric SOA Starts with Your Most Critical Business Pain and Enables You to Build for Flexibility

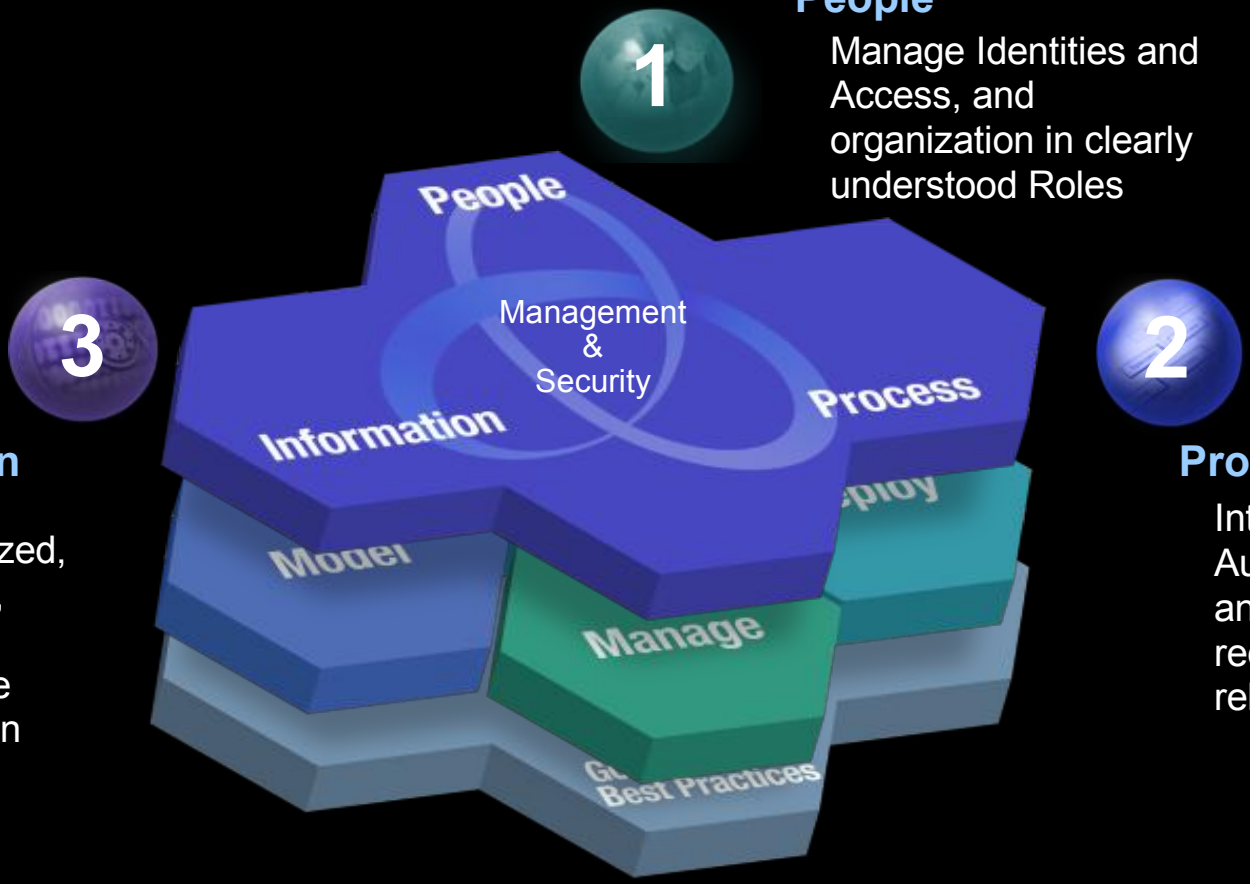
And SOA Lifecycle Is The Key to Successful Projects



Management of SOA environments require integration of People, Process and Information Management

People

Manage Identities and Access, and organization in clearly understood Roles



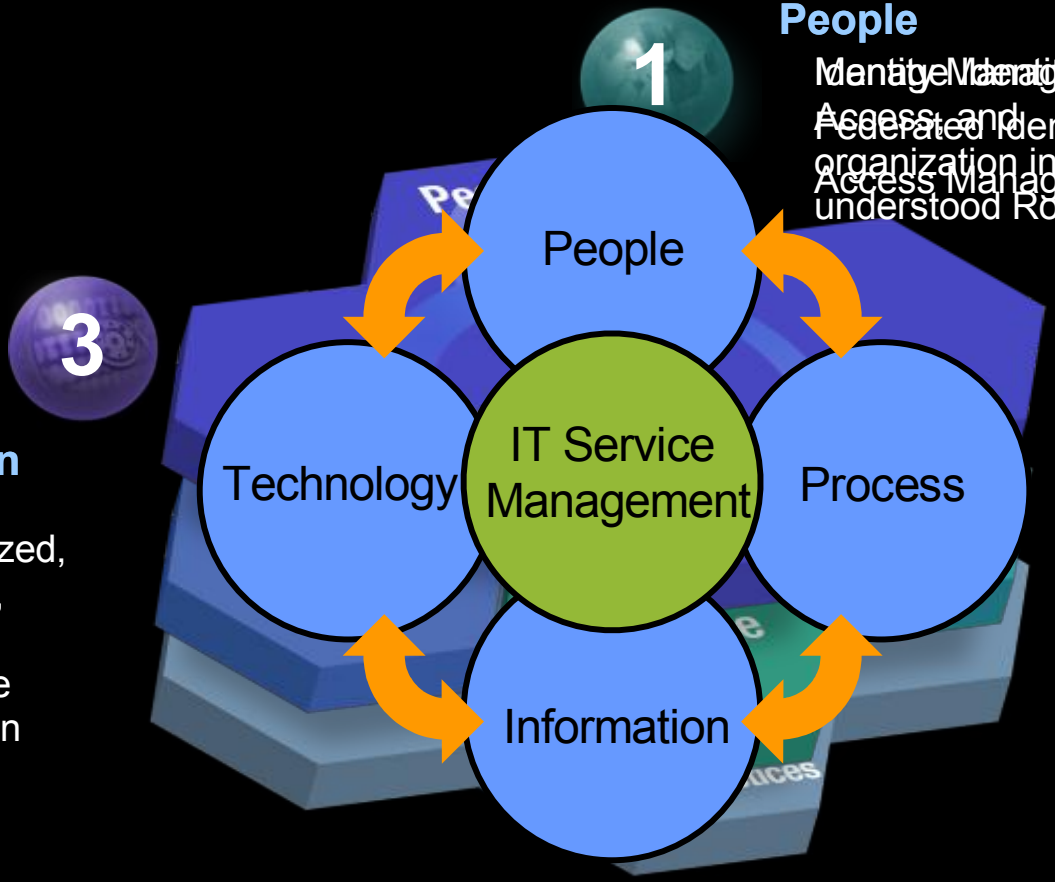
Information

Standardized, federated, secure, accessible information

Processes

Integration and Automation of process and service workflows to reduce costs & increase reliability

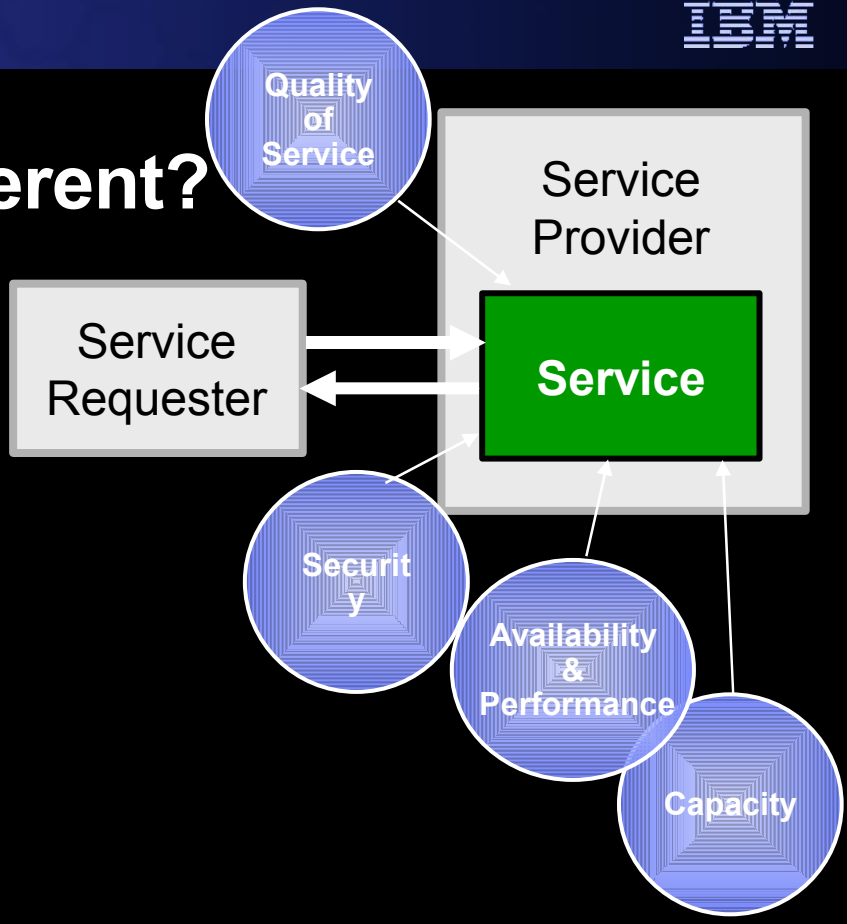
IBM IT Service Management – A comprehensive way to Manage SOA Environments



IT Service Management for SOA Technology integrates People, Processes and Information in an optimal way!

Why is SOA Management different?

- **Service characteristics:**
  - Availability and Performance
  - Security
  - Quality of Service
- **SOA Application characteristics:**
  - Loose coupling
  - Faster deployment and integration of composite application
  - Rapidly increasing application complexity
  - Virtualized application flows, difficult to track
  - A management challenge – during construction, deployment and operations



SOA management - key to successful implementations

IT Benefits

- Increase IT effectiveness
- Reduce cost of IT management
- Ensure Security of information within and beyond the corporation

Business Benefits

- Improve agility
- Improve Flexibility
- Better alignment and integration with business partners

Managing Service Oriented Architectures

Management encompasses all aspects of SOA Lifecycle

Model	Assemble	Deploy	Manage

"How does application reuse affect the service levels of existing services?"

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

How can I be sure that the service flow matches the design?

"How can I debug my production application without reproducing the problem."

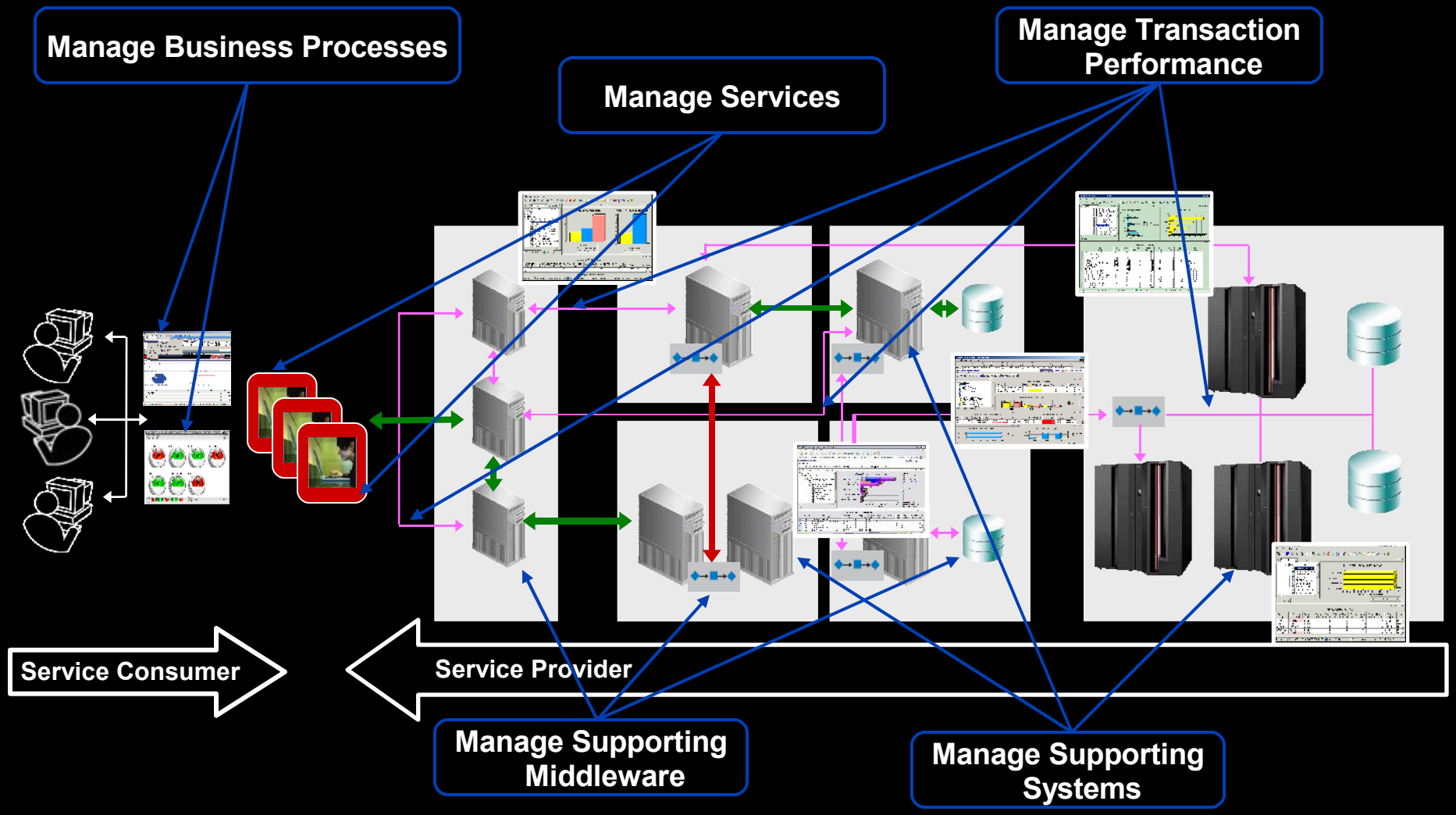
"Which part of the SOA infrastructure is causing this service problem? The app server or the messaging connections?"

What are the Service Levels that apply to this Service?

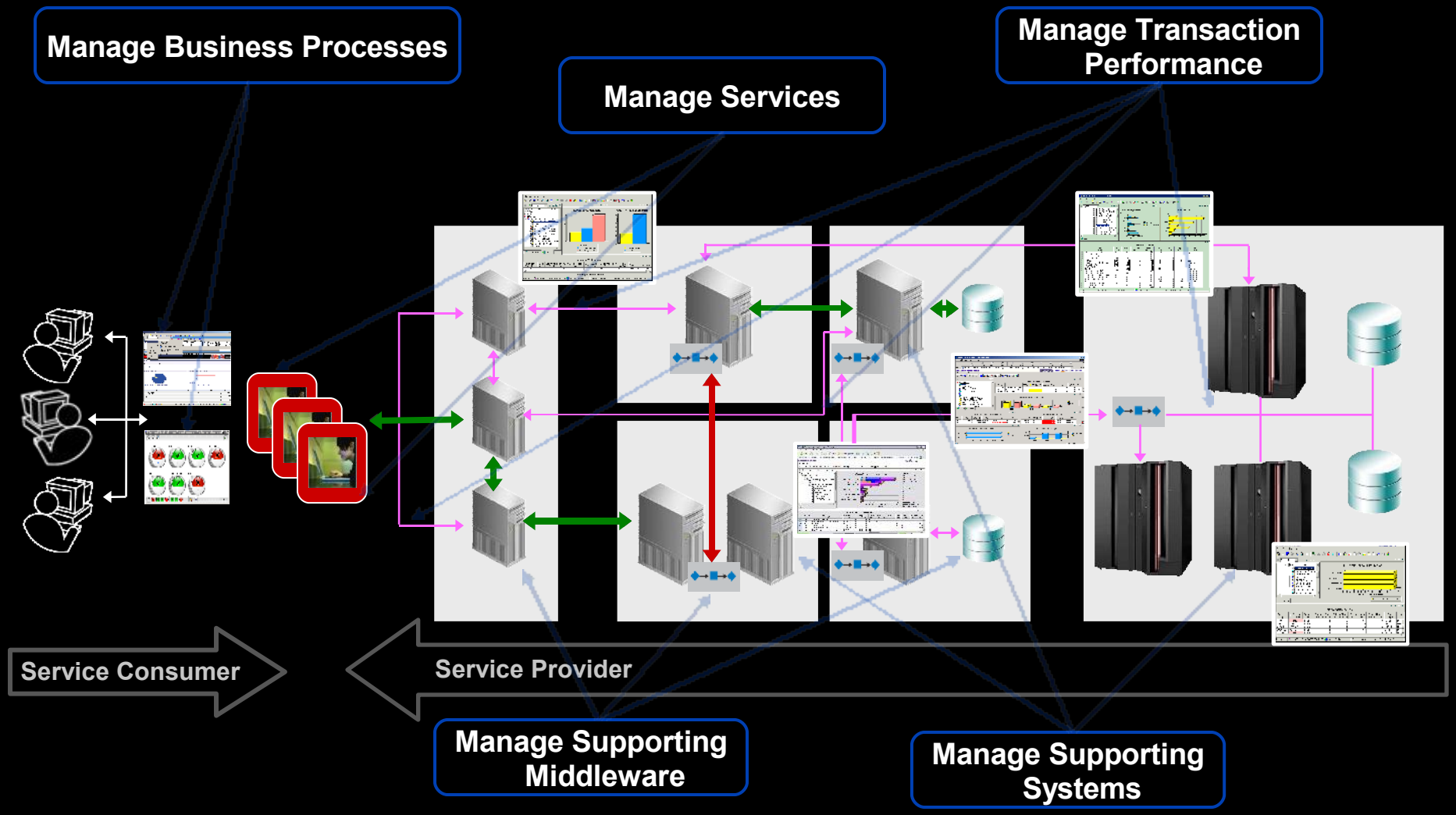
"I now have to write a service – how do I make sure it works securely with other services I'm dependent on?"

"What's the root-cause of this service problem – the service flow or the application components?"

Managing Service Oriented Architectures



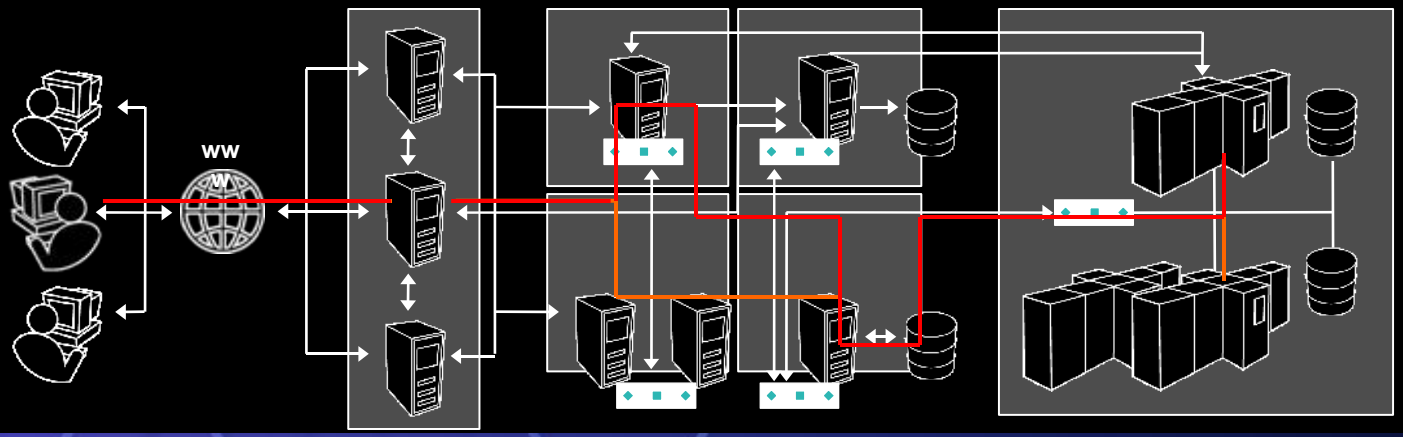
Managing Service Oriented Architectures



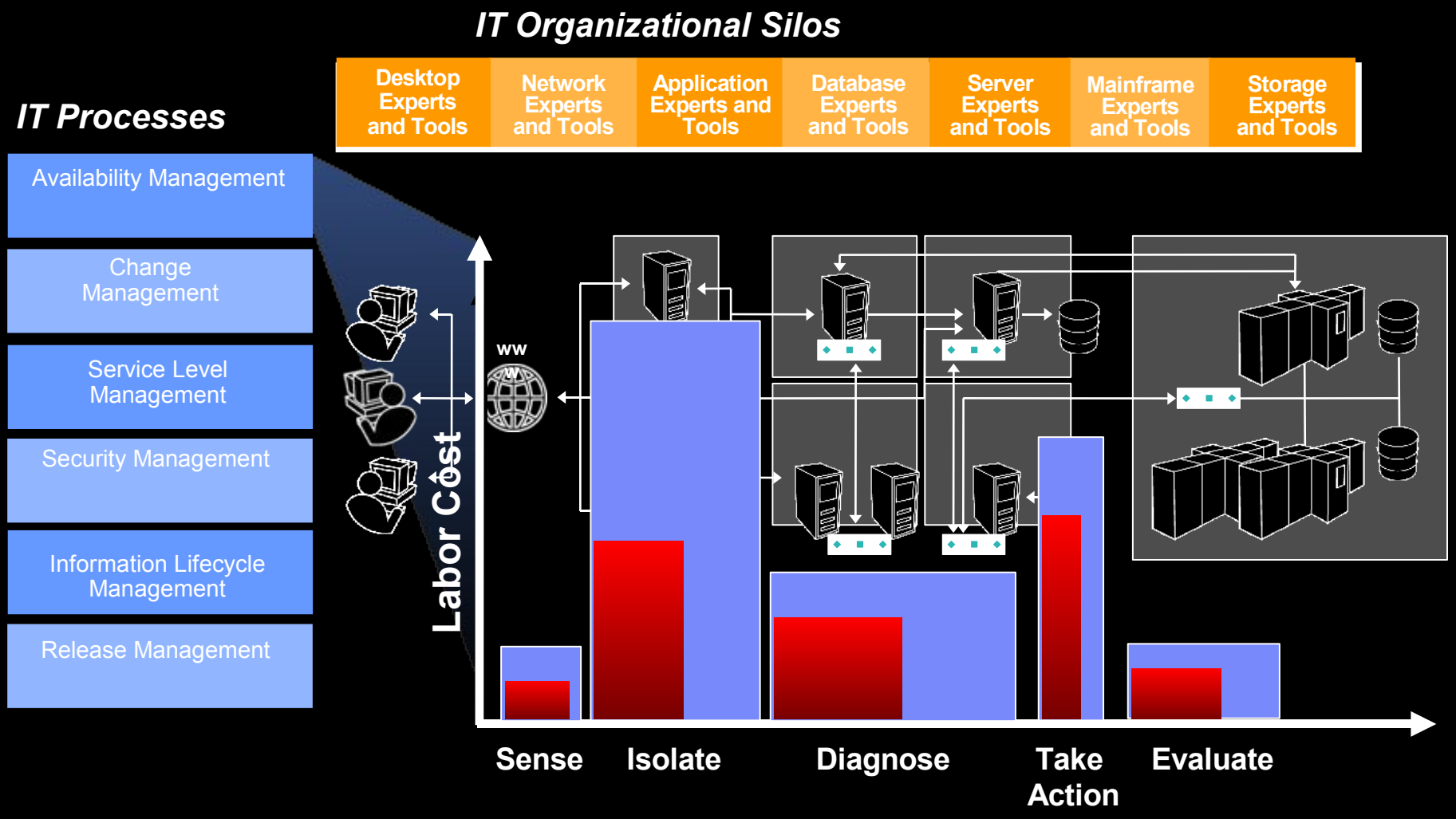
Challenges of SOA Management

... that organizations must address:

- **"How to measure and monitor end-to-end performance?**
  - SOA Application flows are not fixed
- **"How to coordinate problem resolution across the organization?"**
  - SOA applications cross organizational boundaries
- **"How to deploy secure SOA based composite applications?"**
  - Role-based access to Applications and data
- **"How to allocate costs among SOA users?**
  - SOA applications cross cost-centers, functional, organization boundaries



Organizational Complexity Makes it Even Tougher



Our Answer to the Challenge

Integrating People, Process, Information & Technology for IT Service Management

Security experts and tools	Network experts and tools	Application Experts	Database experts and tools	Mainframe experts	•	•	•

- Availability Management
- Security Mgmt.
- Service Level Management
- Change Management
- Information Lifecycle Mgmt.
- •
- •
- •

Technology

Infrastructure Management technologies:

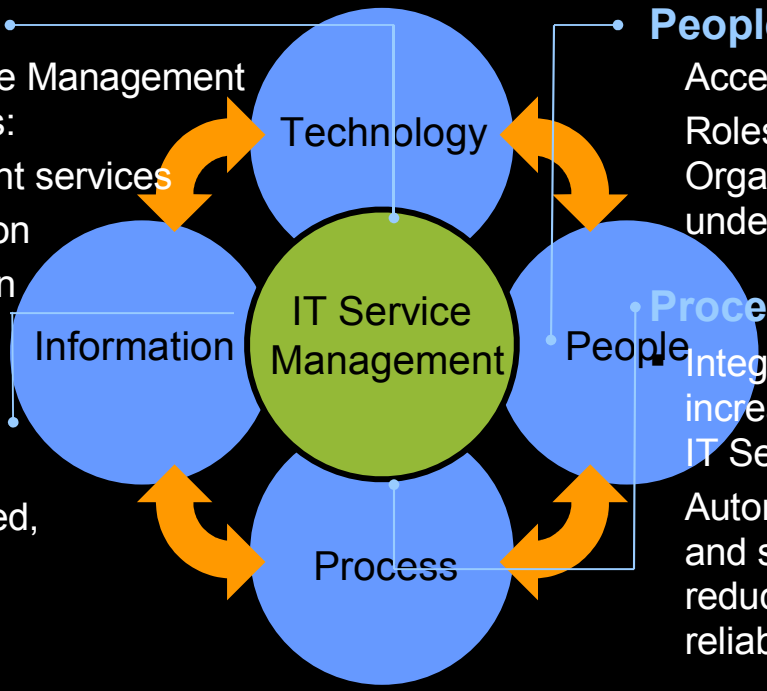
for resilient services

Automation

integration

Information

Standardized, federated, accessible information



People

Access privileges

Roles, Teams, Organization in clearly understood roles

Processes

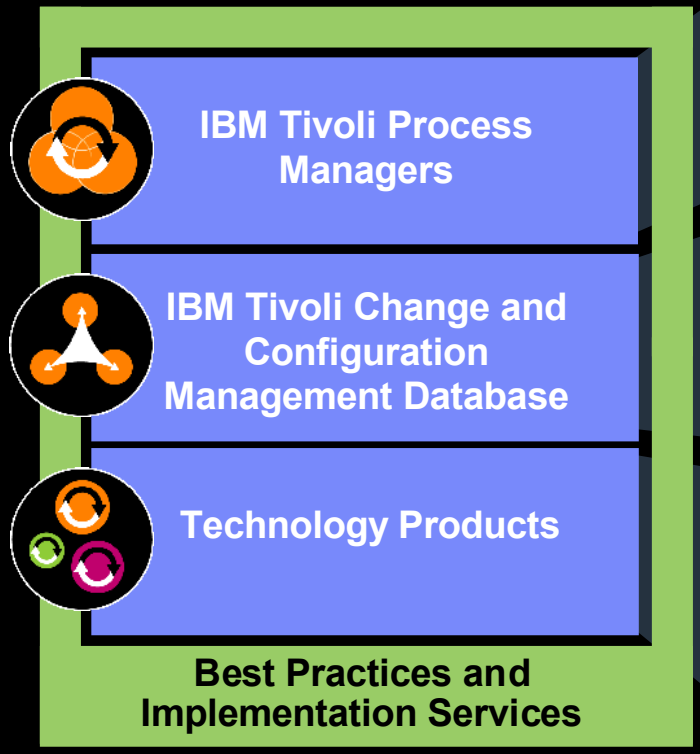
Integrated to enable increased value add from IT Services

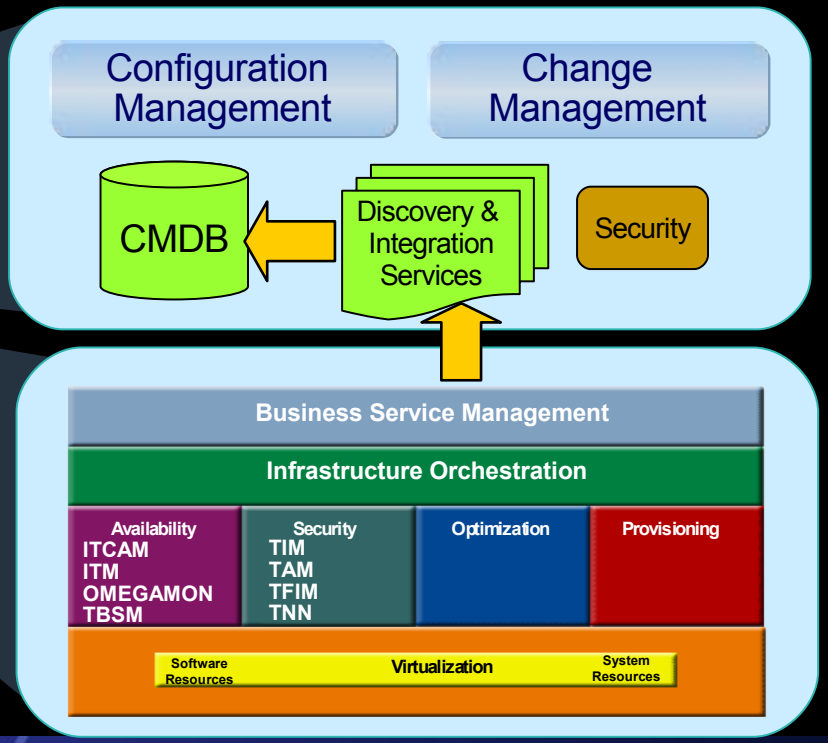
Automation of process and service workflows to reduce costs & increase reliability

IBM IT Service Management

Built on SOA to Manage SOA

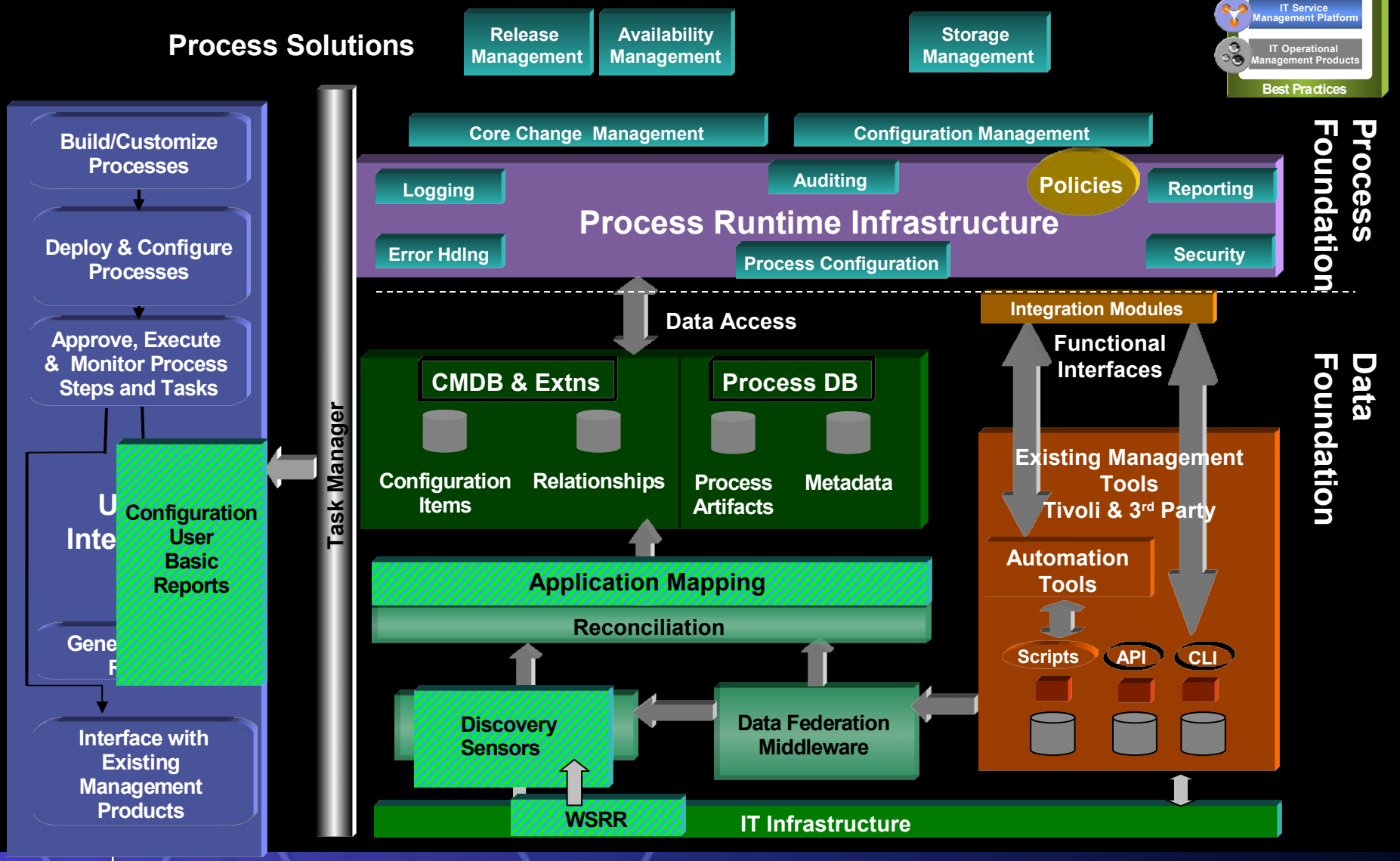
- Pre-defined, implemented processes, leveraging common data, for improved efficiency and effectiveness
  - Release Management
  - Availability Management
  - Information Lifecycle Management





IBM

ITSM for SOA – a service oriented approach



SOA on your terms and our expertise

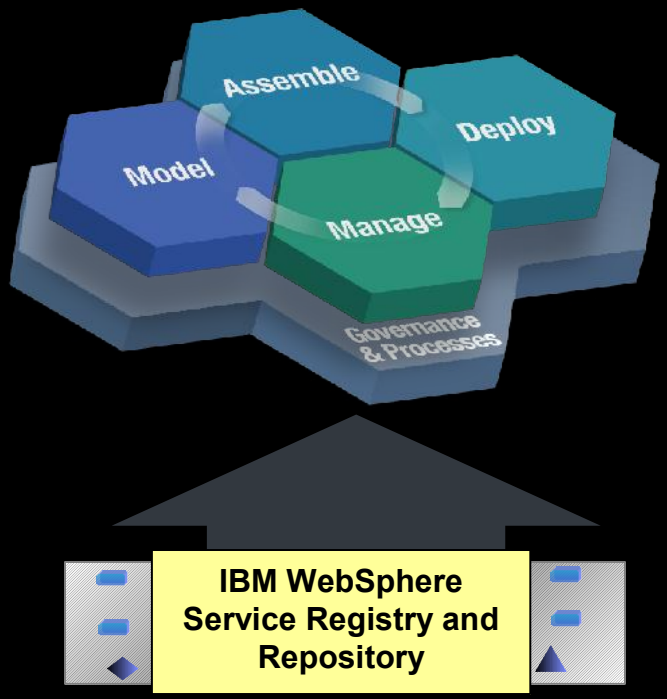
ON DEMAND BUSINESS

Business Service Repository
IBM's Service Registry Solution

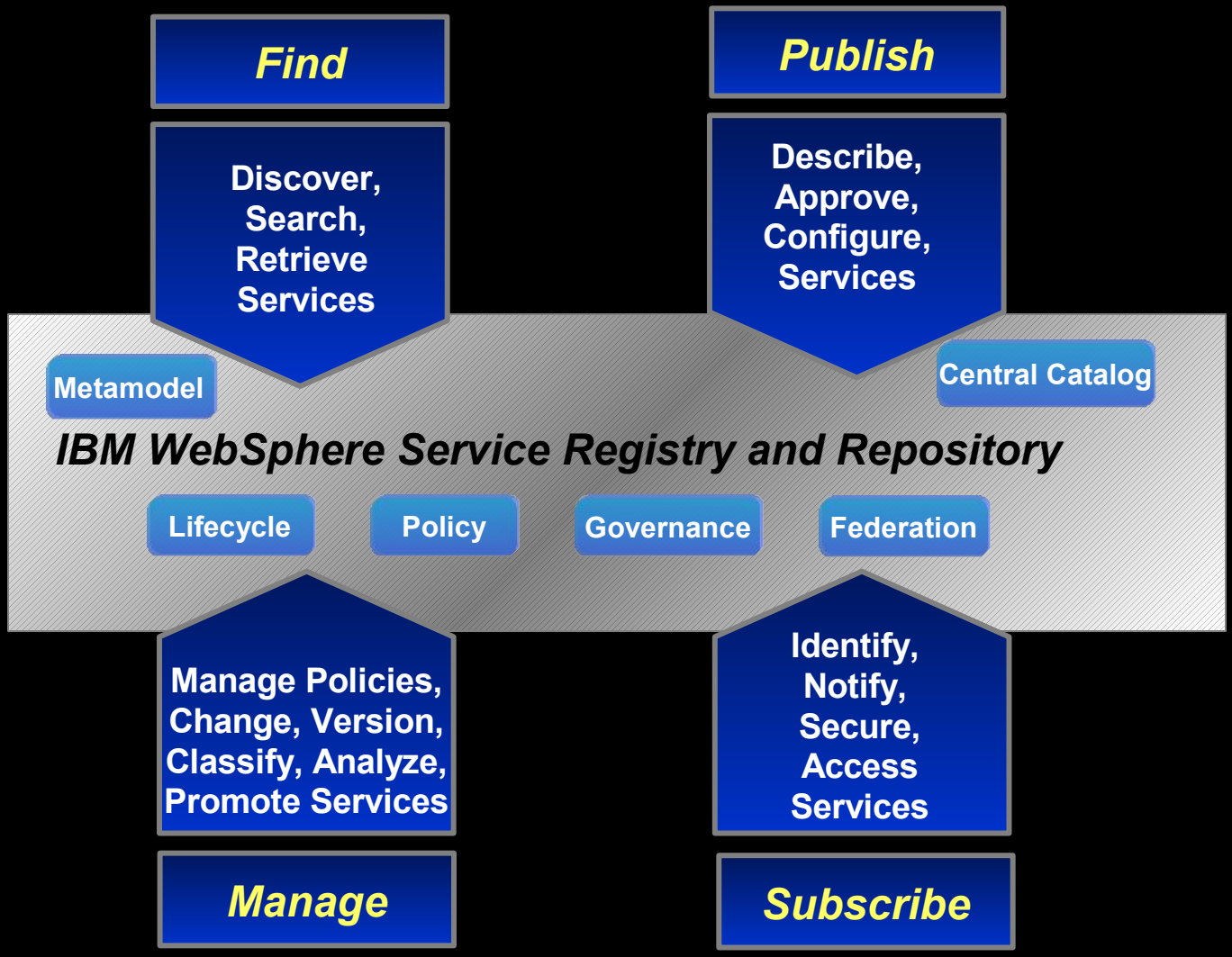
- **A Business Service Repository is an enterprise-wide service metadata repository that securely registers services and relevant information, enabling SOA lifecycle and governance by:**
  - Publication of service endpoint capabilities
  - Management of service metadata
  - Finding and subscribing to the services
  - SLA and Policy enforcement

- **A key component to bolster Governance Processes underpinning of SOA foundation**

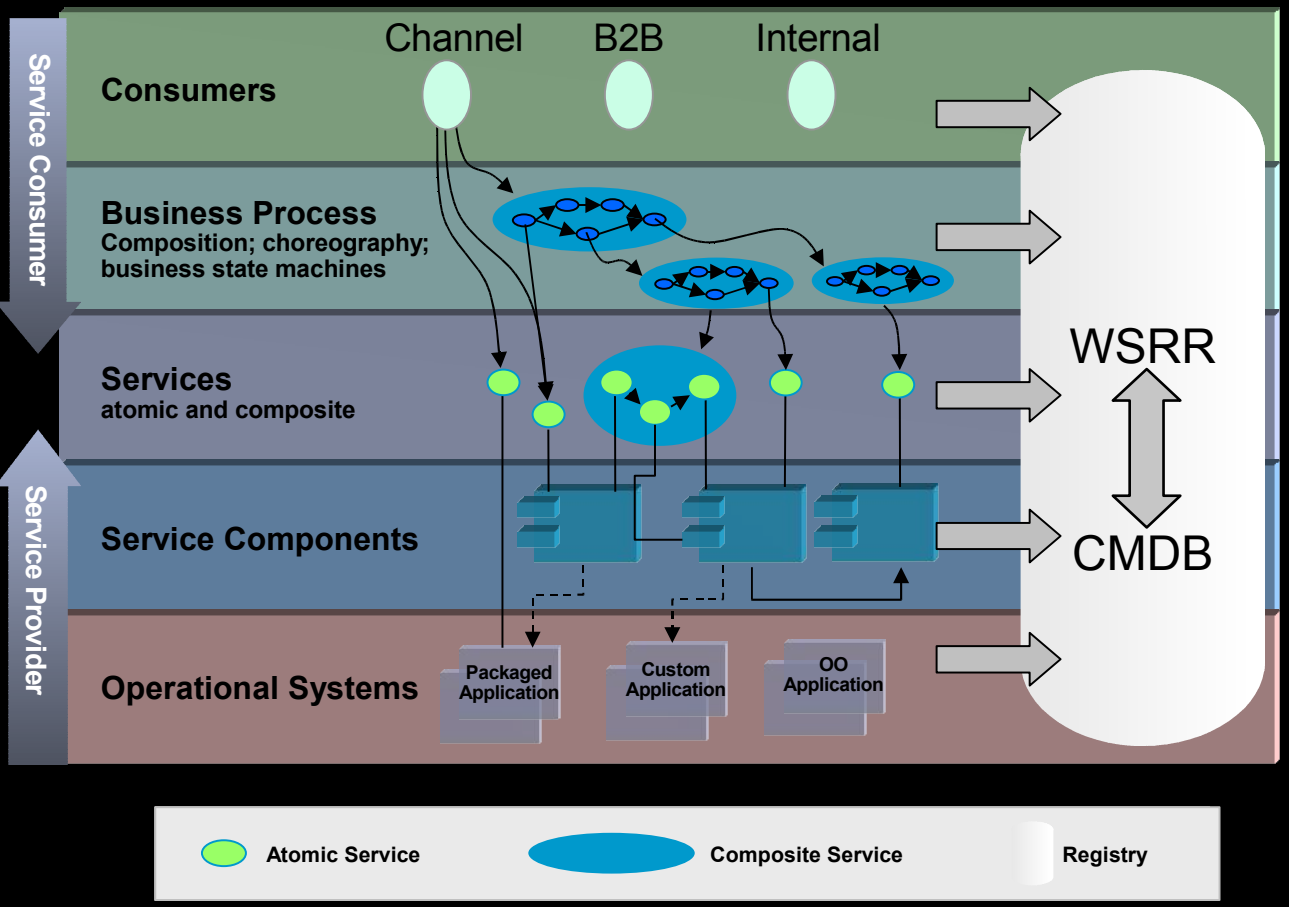
- **Deliver Time-to-Benefit of SOA deployments**
  - Business process vitality
  - Reuse of investment
  - Incremental adoption



Business Service Repository usages in SOA deployments



SOA Management Abstraction Layering



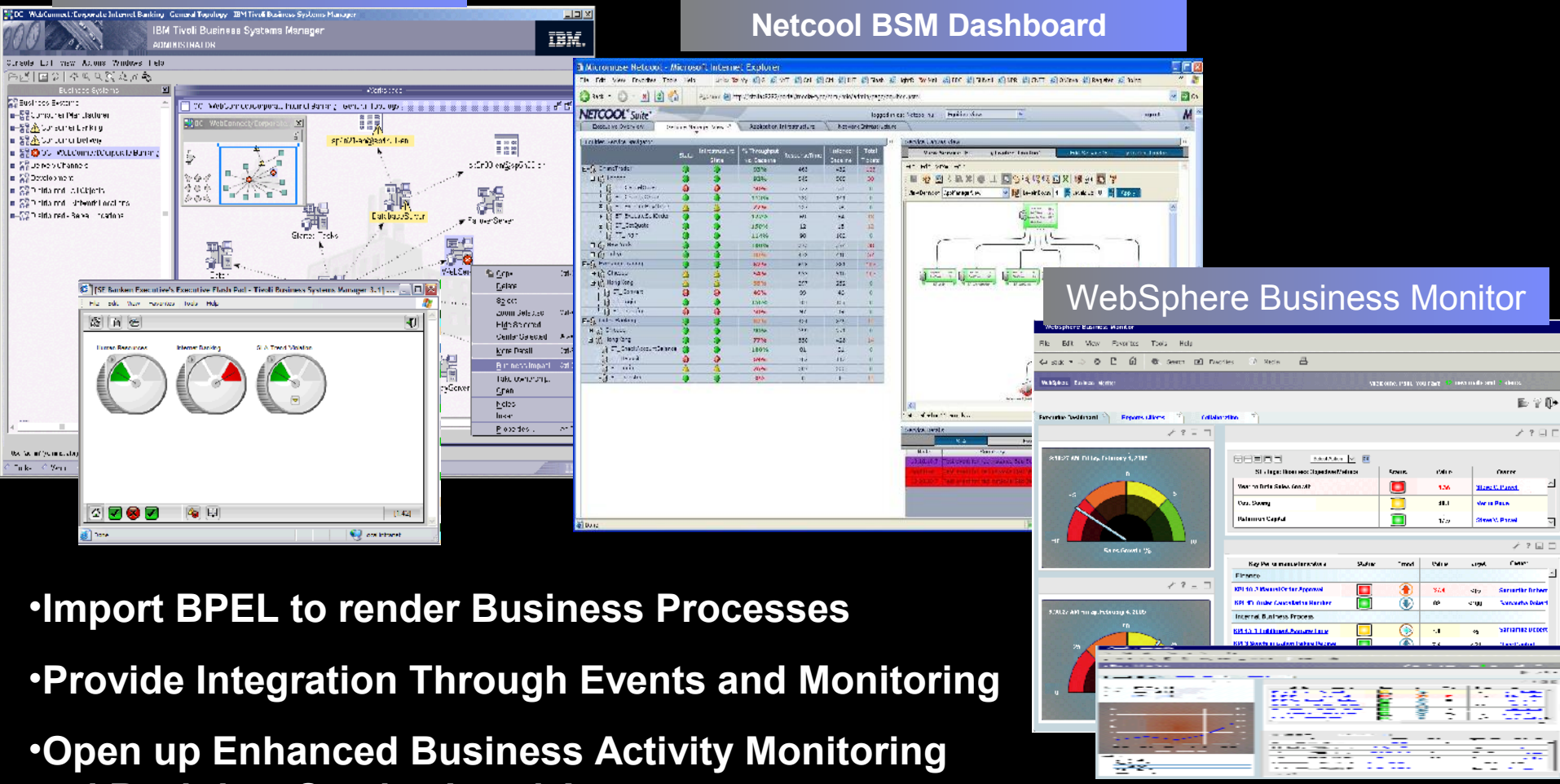
- **ITCAM for RTT**
  End-to-end response time
- **TBSM**
  Monitor state of business processes
- **ITCAM for SOA**
  Web Services automated mediation and problem identification
- **ITCAM for Websphere**
  Drill down diagnostics for WebSphere
- **ITM, OMEGAMON**
  Resource analysis for WebSphere MQ, Message Broker, OS and DB

How do I manage my Business Processes?

Tivoli BSM Dashboard

Netcool BSM Dashboard

WebSphere Business Monitor

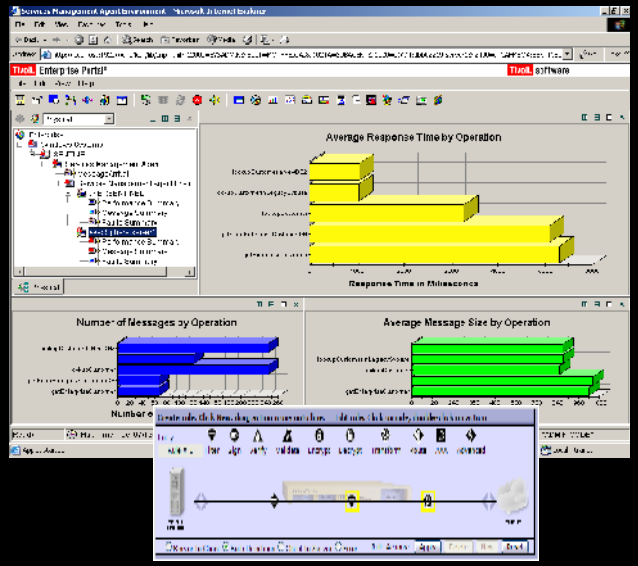


- Import BPEL to render Business Processes
- Provide Integration Through Events and Monitoring
- Open up Enhanced Business Activity Monitoring and Real-time Service Level Agreements
- Track Business KPIs

How do I manage my Web Services?

ITCAM for SOA manages the SOA environment

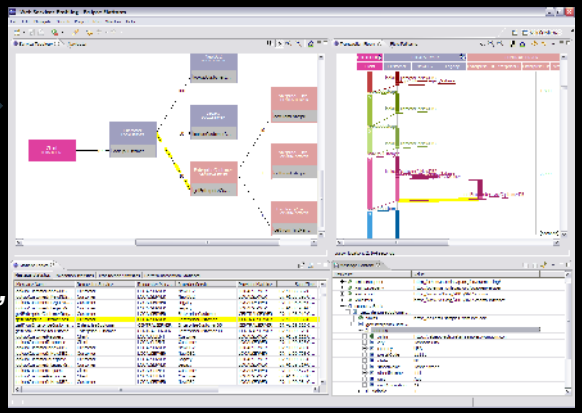
- Integrated view from services to transactions and resources
  - Integrated views of web services data through a centralized portal
  - Aggregate web services data with other IT infrastructure monitoring
- Improve service flows dynamically
  - Take corrective action through situations, workflow and mediation
  - Views and analysis of web service interactions
- In depth services analysis
  - Detailed views of operational SOAP/XML message content, flow patterns and topology for Web services experts and support teams



IT Operations

"Don't give me another console"

Web Services Expert



"Show me the service details!"

How do I manage my SOA Infrastructure?

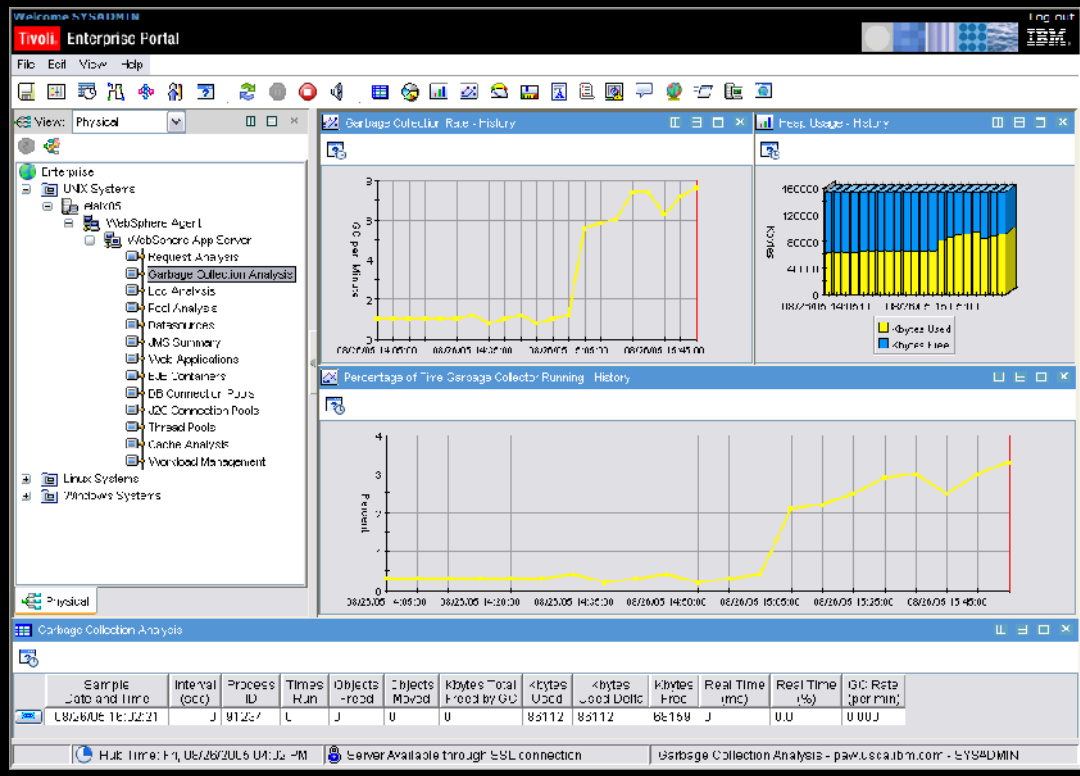
ITCAM for WebSphere delivers J2EE Monitoring and Deep-dive diagnostics

Problem

- "The billing servcice slows down and then hangs intermittently. I don't know where to begin to look at what cause the problem!"

Solution

- ITCAM for WebSphere provides comprehensive in-flight transaction display and can tell you the name of the hung class/method.



Value

- ITCAM for WebSphere can significantly improve the performance and availability of your web application by reducing problem identification and resolution time

How do I manage my Advanced ESB?

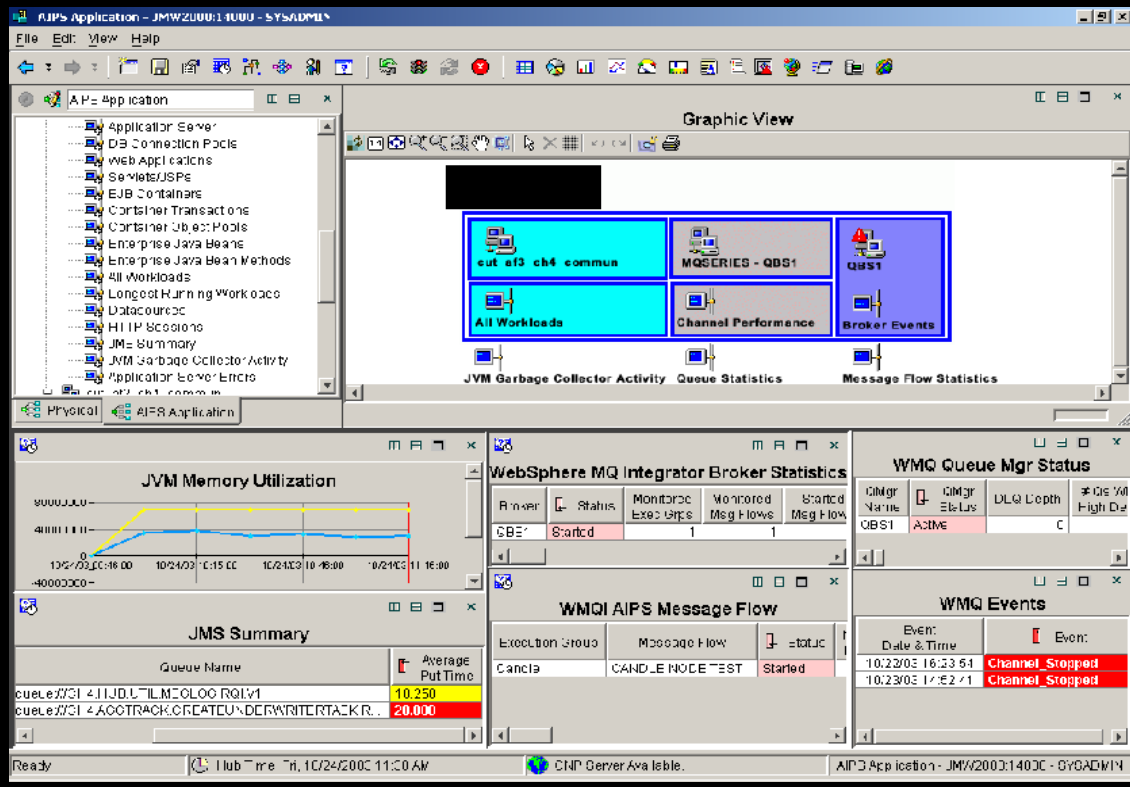
IBM Tivoli OMEGAMON XE for Messaging alerts you to problems and fixes them

Problem

- I have MQ Channels that are supposed to be active 24X7. Occasionally, these channels go down and I don't know about it for a while.

Solution

- IBM Tivoli OMEGAMON XE for Messaging will detect when the channel goes down and alert an operator. The operator can then restart the channel. In most cases, this channel restart can be performed automatically, informing the operator that there was a problem and it has been resolved.

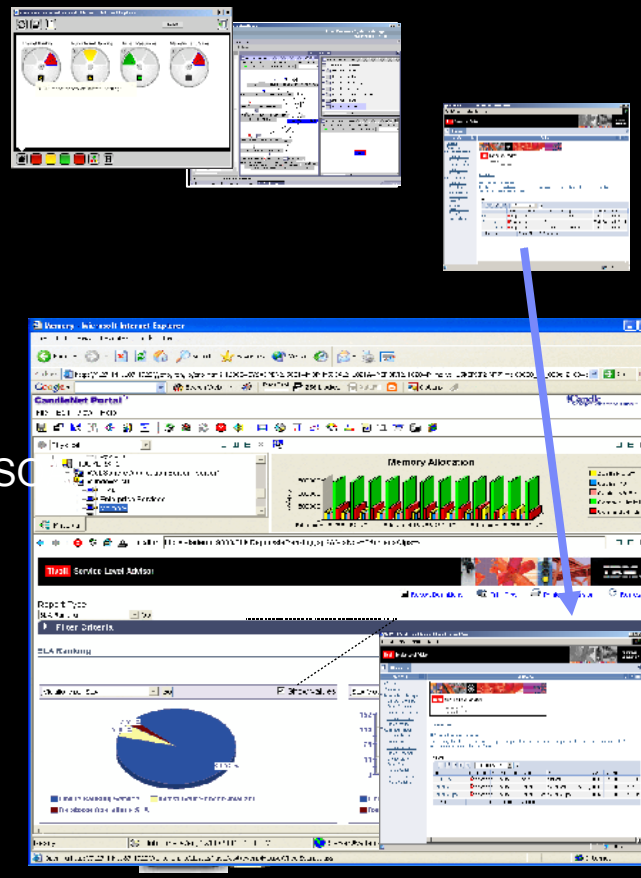


Value

- IBM Tivoli OMEGAMON XE for Messaging will detect and repair a problem before it impacts your business applications

How do I manage Services Levels across my SOA?

IBM Tivoli Service Level Advisor v2.1.1 - Time to Value and Flexible Reporting

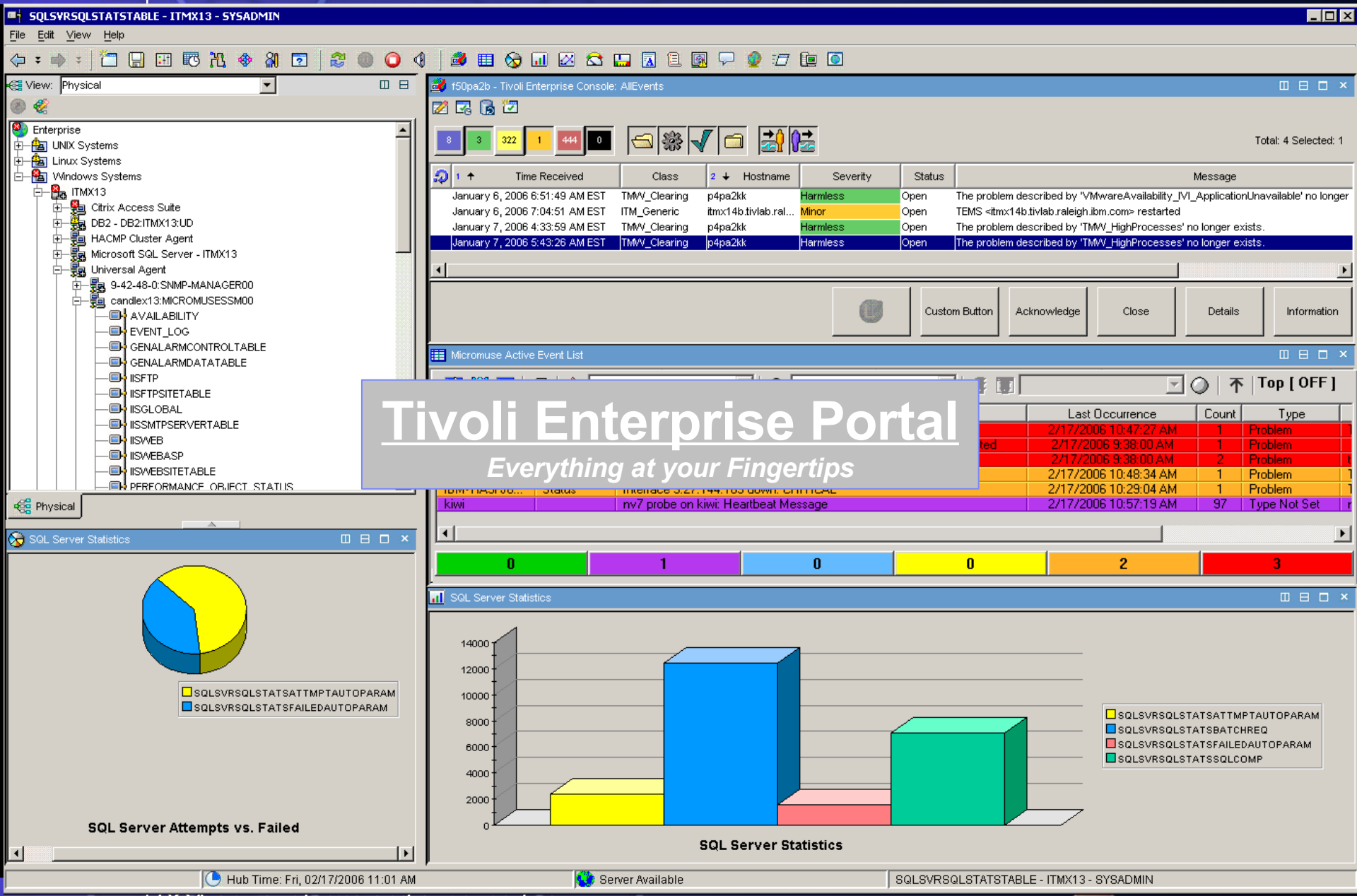


New with v2.1.1:

- Leverage TDW 2.1 in TEP to gain value
- Up to the Hour SLA Evaluations
  - Supports ITCAM family, ITM 5&6 and OMEGAMON
  - Works (concurrently) with TWD 1.X and new TDW 2.1
- Direct Feed SLA Metric Filters now possible
  - Pre built ITM, OMEGAMON, ITCAM for RTT, ITCAM for SC TBSM feeds
  - Wizard Based SLA Creation

Define and Monitor Service Level Objectives

- Provide Customer Specific Views of SLA (ITIL Aligned)
- Supports ITIL Service Catalog
- Predictive Analysis based on Trending of Collected Data
- Integrate Data from Multiple Operations Domains



Tivoli Enterprise Portal

Everything at your Fingertips

Integrated Application Management Vision for 2006 and Beyond

Transactions
- Monitoring & Management
- CICS

Resources
- Systems Management
- Middleware
- Storage
- Network

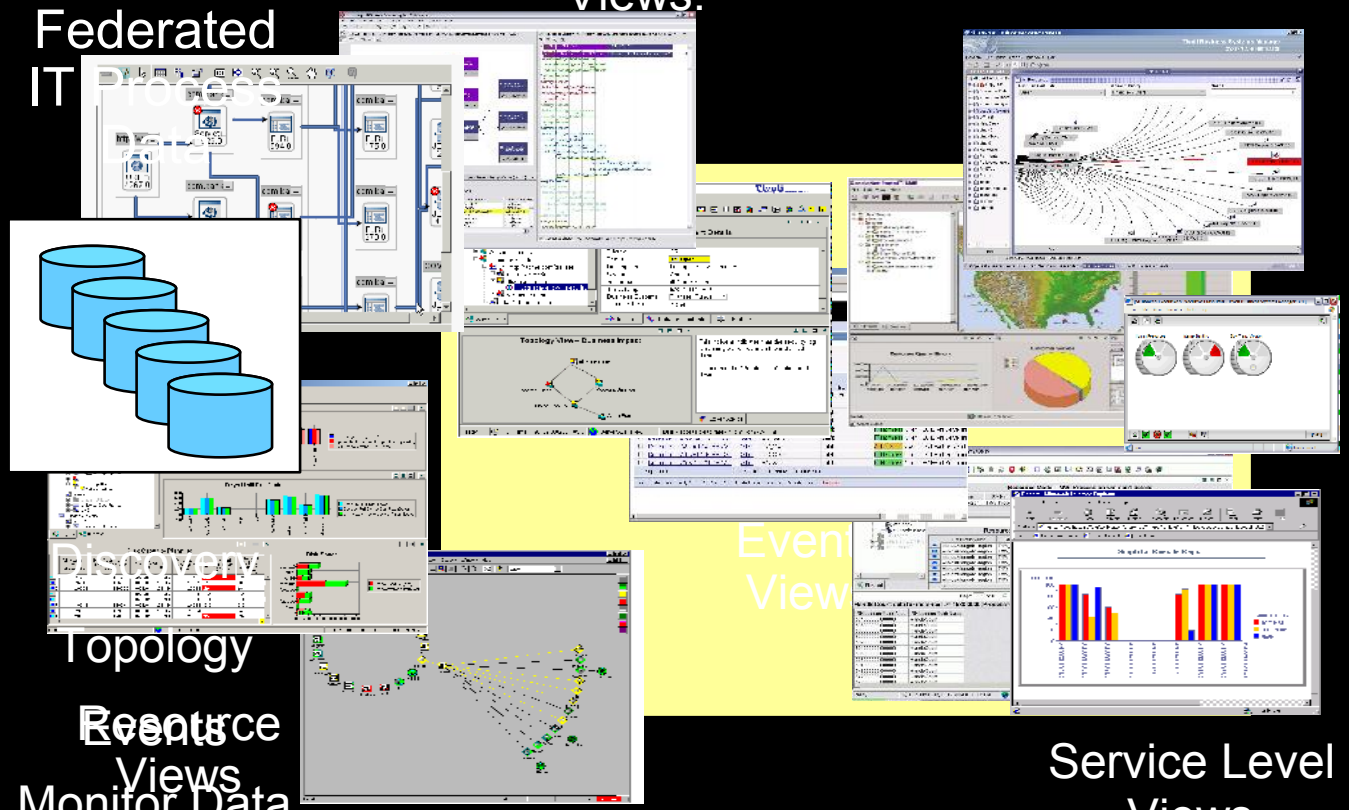
SOA Monitoring & Management

Transaction Views

Tivoli Enterprise Portal Views:

Business Service Views

Federated IT Process Data



Topology

Resource Views

Events

Monitor Data

Event Views

Service Level Views

Diagnostic Views

Customer Story: Advanced Integrated Solutions (AIS)

Computer Services Industry (< 99 employees)

"If you can improve processes and better manage the infrastructure, you will invariably reduce costs and be able to invest that money in business-relevant IT activities. IBM IT Service Management solutions make this possible."

— Jeff Stoddard
CEO and President
Advanced Integrated Solutions

Business Challenge

Help companies achieve service-level requirements while reducing the cost of IT management

Business Benefits

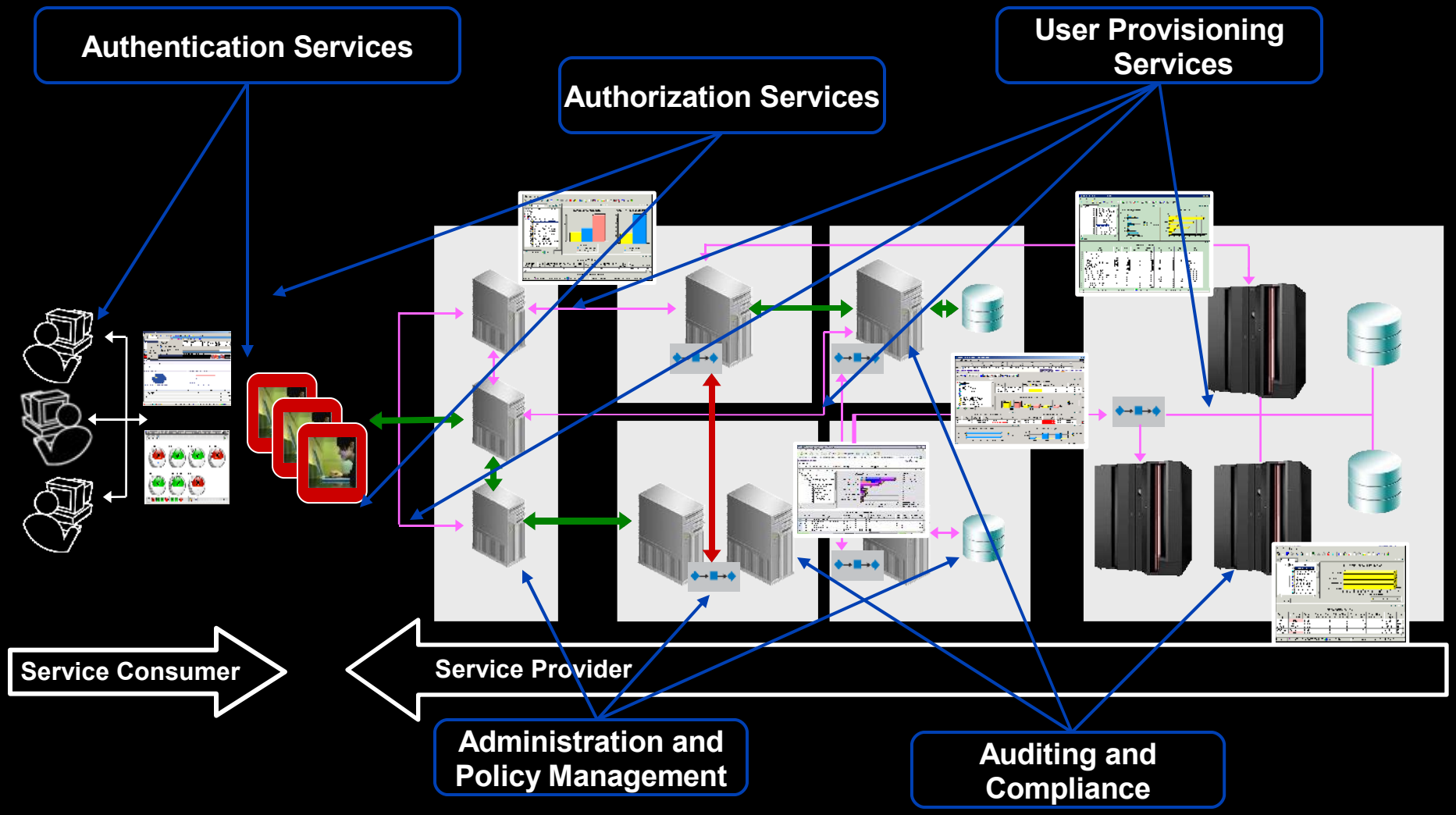
Decreases the time and cost of infrastructure management
Frees up IT staff for strategic projects
Reduces IT complexity for increased business flexibility

Solution

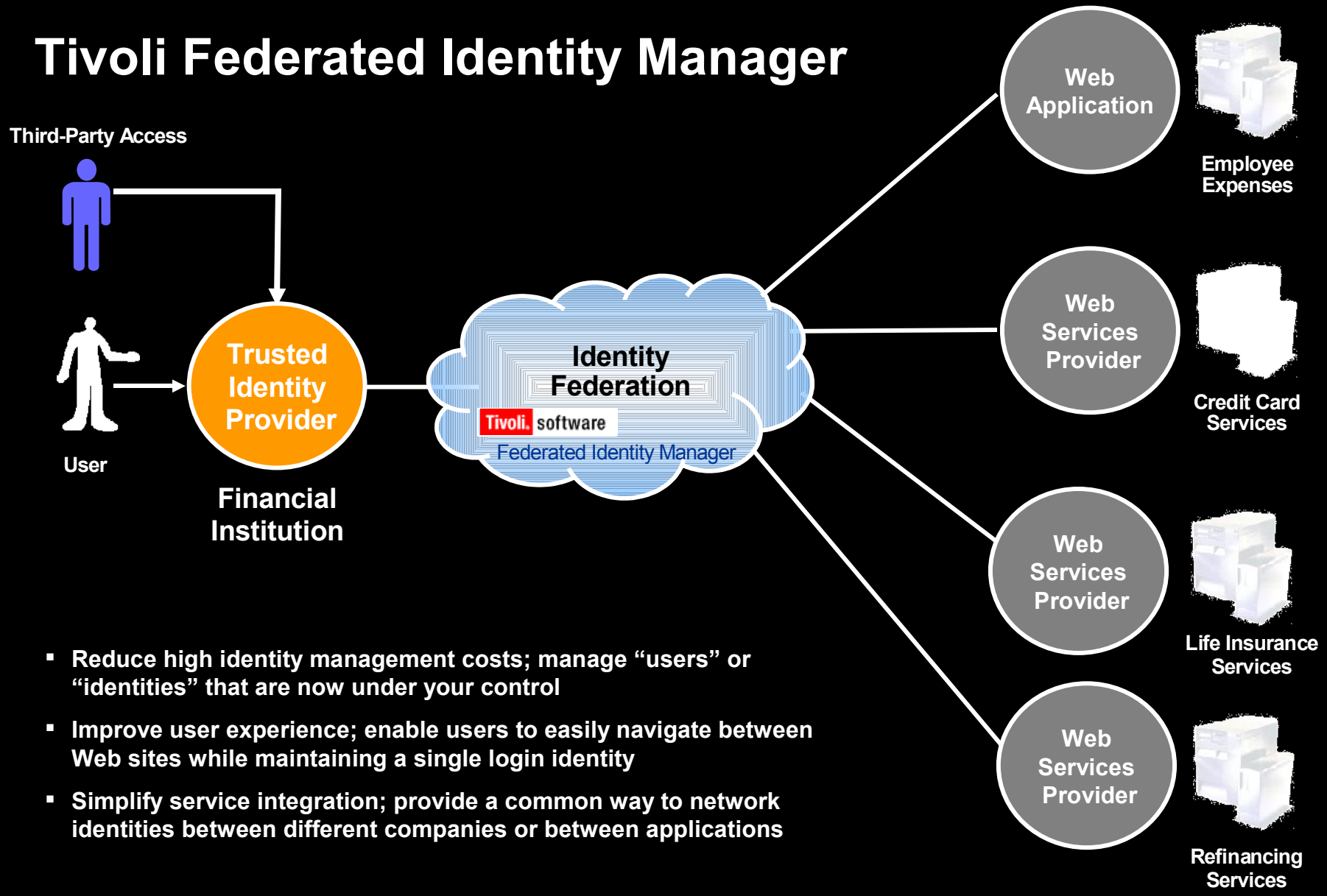
IT service management solutions based on IT Infrastructure Library (ITIL) best practices:

- IBM Tivoli Business Systems Manager
- IBM Tivoli Change and Configuration Management Database
- IBM Tivoli Composite Application Manager
- IBM Tivoli Configuration Manager
- IBM Tivoli Enterprise Console®
- IBM Tivoli Monitoring
- IBM Tivoli Unified Process tool

Securing Service Oriented Architectures



Tivoli Federated Identity Manager



- Reduce high identity management costs; manage “users” or “identities” that are now under your control
- Improve user experience; enable users to easily navigate between Web sites while maintaining a single login identity
- Simplify service integration; provide a common way to network identities between different companies or between applications

The role of the Appliance in SOA Management and Security

XA35 XML Accelerator

- Offload XML processing
- No more hand-optimizing XML

XI50 Integration Appliance

- XML-to-'Any' Conversion at Wirespeed
- Groundbreaking DOP architecture
- Integrated message-level security

XS40 XML Security Gateway

- Enhanced Security Capabilities
- Agility – future-proof
- Easy Deployment

XG4 XML-aware subsystems

- First to break XML gigabit barrier
- Highly embeddable OEM solution
- Broad applications

SOA Openness Enables flexibility and reuse

A Portable and Interoperable Services Model

- **Building on IBM's Strengths In Standards**
  - New & Enhanced Web Services Support
    - Reliable Messaging
    - Security Extensions (Trust, SecureConversation)
    - Transactions (AtomicTransaction, Business Activity)
    - WS-Distributed Management - ratified standard
    - RAMP Profile
- **Supporting and shaping Industry-based XML Standards**
- **Contributing to work around SOA Maturity Model**

- SOA Management and Security
  - *WSDM (SDD)*
  - WS-Security, SAML, Liberty, UDDI, WSRP
  - WS-Federation
  - WS-Security Policy
  - WS-Trust
  - ARM
  - JMX
- Business Process Management
  - *UML/Business Modeling Notations*
  - *BPEL Extensions for People and Sub Processes*
- Interoperability in Heterogeneous Environments
  - *Web Services Profiles*
  - *Open Document and XForms*
- Simplified Implementation
  - *SCA/SDO*
  - *Open Ajax*

ITCAM for SOA 6.1 Beta Program

We will have an ITCAM for SOA 6.1 managed beta program, and we are looking for a limited number of customers to participate.

For the duration of the beta program we will provide participants with:

- Code and documentation
- Support for questions and bug reports
- Opportunity to validate the new release in your environment
- Enhanced ability to influence future releases

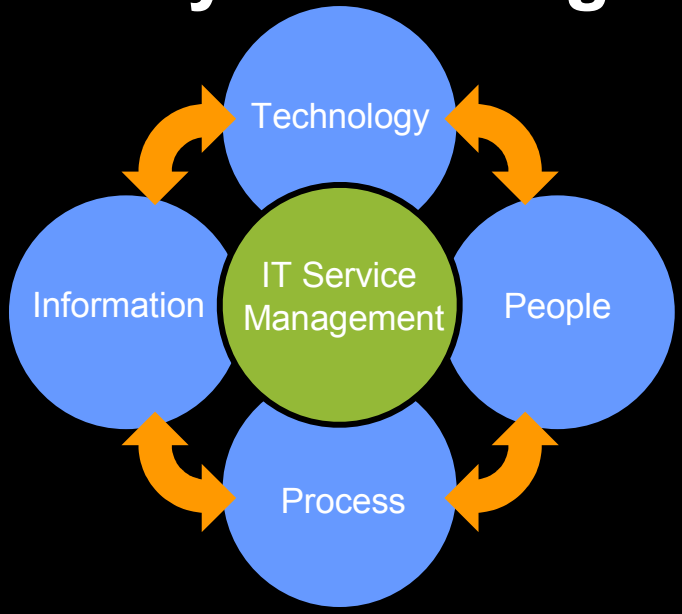
You need not commit now, but if you might be interested:

- Please send a note to John Irwin (irwinjo@us.ibm.com)
- Please include the name of your Tivoli representative

Next steps for those that express an interest in the beta:

- We will contact you in mid-July with more information
- Beta code is expected to be available starting mid-September

IBM Tivoli – Whole story for management of SOA



Management and Security for SOA Applications **TIVOLI** ***Products that integrate into a single pane of glass***

- **A Holistic comprehensive approach to managing SOA**
- **An Open platform based on Industry standards & best practices**
- **Consistent and high performance Security and Compliance for Applications and Users**
- **Management products for all phases of the SOA lifecycle**