



Delivering More Efficient and Effective IT Service Management for Your Business

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Vice President, Tivoli Software



Agenda

- **Challenges and Trends**
- **The IBM IT Service Management Strategy and Approach**
- **SOA and Tivoli Enterprise Solutions**
- **Integration Beyond Visualization**
- **Securing the Enterprise**
- **Summary**

IT Organizations Face Tremendous Challenges

Challenges are coming from many fronts:

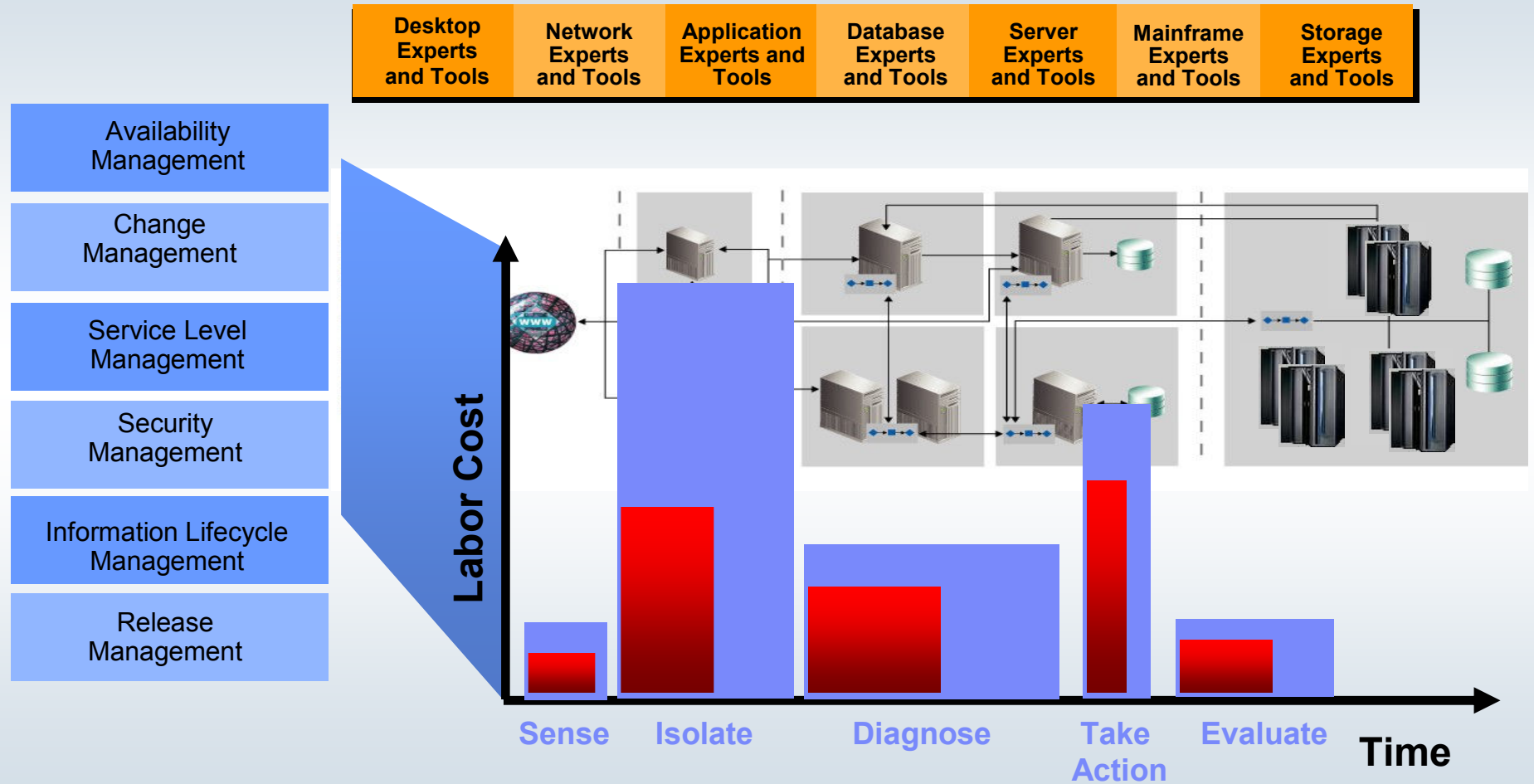
- **Change:** Market demands, workloads, service levels
- **Compliance:** Regulations, security, audit capabilities
- **Complexity:** Heterogeneous resources (eg., PDA's, kiosks, browsers servers, etc), organizational silos, composite applications
- **Cost:** Management and administration



“We’re trying to resolve a huge morass of IT complexity, while demand for our services keeps going up. We’re getting hit from both sides. So what are we doing about it? We’re delivering an adaptive IT organization that provides services on demand to support the needs of the business.” — *George Surdu, Director, Global Information Technology Infrastructure, Ford Motor Company, September 2005*

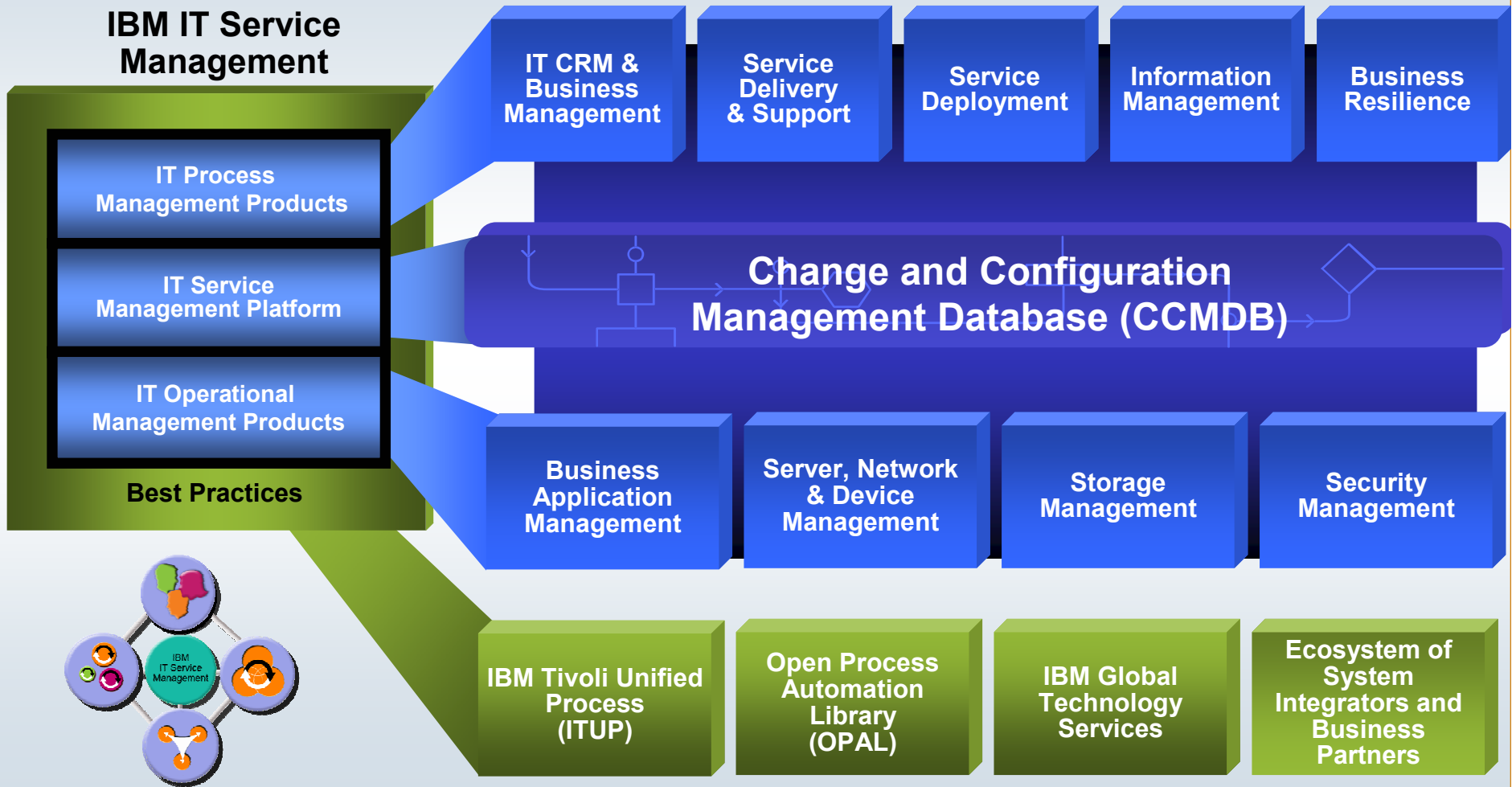
Organizational Complexity Compounds the Problem

Managing systems and composite applications across IT silos is major challenge



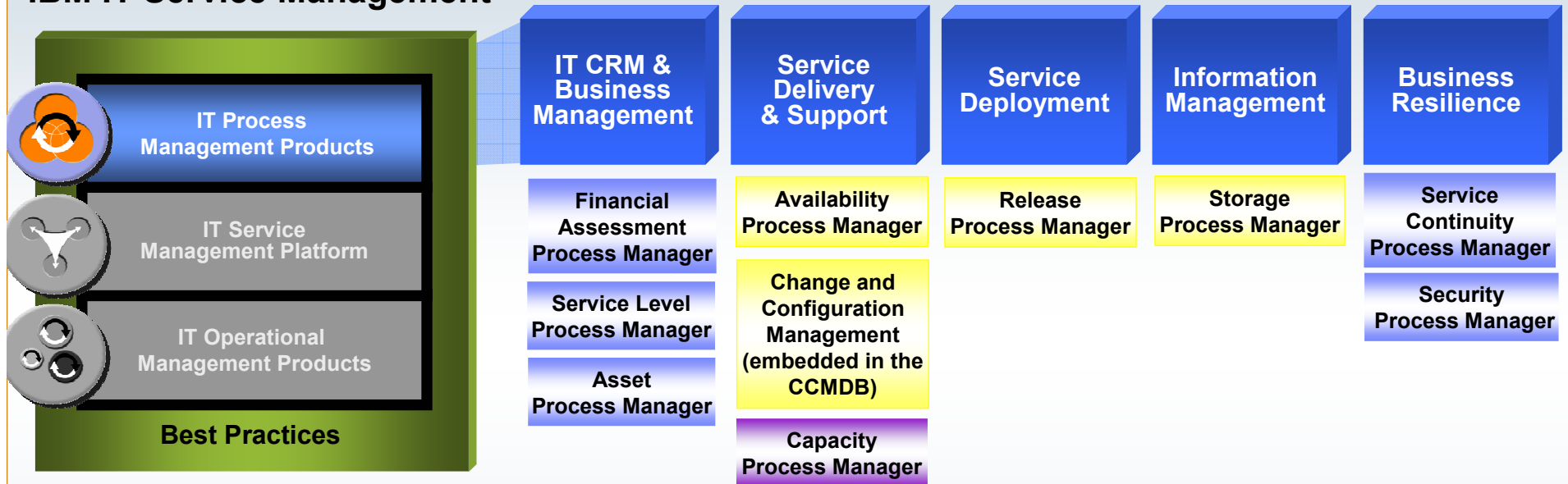
IBM IT Service Management – Innovation that Matters

The industry's most comprehensive set of products, services and solutions



IT Process Managers Bridge Organizational Silos

IBM IT Service Management



Available Now!

Available in 2H 2006!

Future Directions

- Automates IT management processes for rapid responsiveness and greater flexibility
- Based on experience applying ITIL, eTOM, CoBIT and CMMI in customer environments
- Extends autonomic computing technology experience to people, processes and information

A CMDB Needs to Do More Than Just Store Data

- **Data management and integration**
 - Integrates and shares data across complex organizational silos
 - Proactively manages data currency and accuracy
 - Is the true, authoritative source of record
- **Workflow integration**
 - Is coupled with an automated change management process to ensure integrity and consistency of configuration items
 - Increases coordination and data sharing
- **Policy integration**
 - Enforces policies for compliance with internal and regulatory requirements

IBM IT Service Management

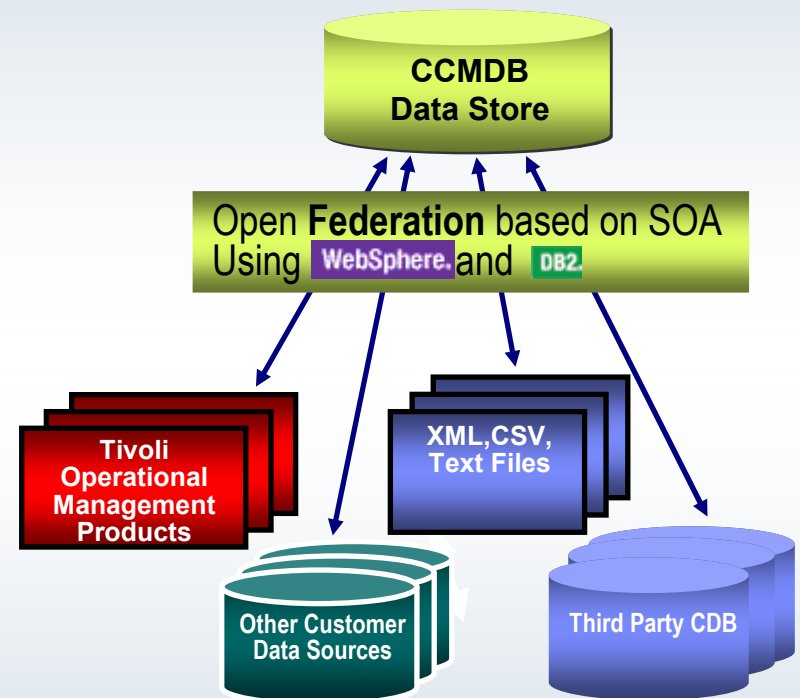


Change and Configuration Management Database (CCMDB)

Information isn't valuable until it's acted upon ...
a CMDB should facilitate action

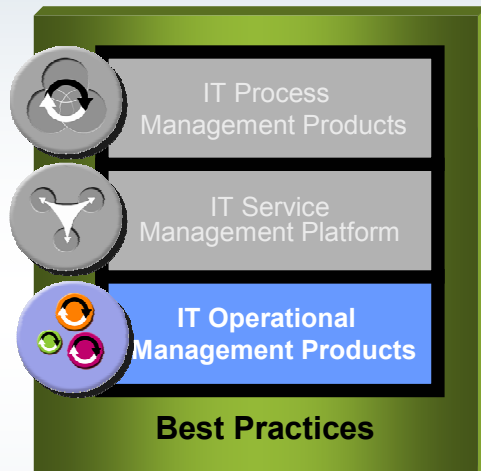
CCMDB and System z

- **z/OS Discovery Library Adapter**
 - Includes System z resources such as LPAR, z/OS, IMS, DB2, CICS, and WebSphere
- **Tivoli Business System Manager integration for Line of Business objects, etc to leverage investment in TBSM resources**
- **Discovery IP networking resources from NetView for z/OS**
- **Supports customers investment in DB2**



IT Operational Management Products

IBM IT Service Management



**Recently announced
new and enhanced
solutions for the Tivoli
portfolio**

Business Application Management	Server, Network & Device Management	Storage Management	Security Management
<p>Products include:</p> <ul style="list-style-type: none"> ▪ Tivoli Composite Application Manager Family ▪ Tivoli Business Systems Manager ▪ Tivoli Intelligent Orchestrator ▪ Tivoli Service Level Advisor ▪ Tivoli Contract Compliance Manager ▪ Tivoli License Compliance Manager Family ▪ Netcool/Impact ▪ Netcool/RAD 	<p>Products include:</p> <ul style="list-style-type: none"> ▪ Tivoli Enterprise Console ▪ Tivoli Monitoring Family ▪ Tivoli OMEGAMON Family ▪ Tivoli NetView Family ▪ Tivoli Remote Control ▪ Tivoli System Automation Family ▪ Tivoli Workload Scheduler Family ▪ Tivoli Provisioning Manager ▪ Tivoli Configuration Manager ▪ Tivoli Decision Support for z/OS ▪ Netcool/OMNibus ▪ Netcool/Proviso ▪ Netcool/Precision ▪ Netcool/Monitors 	<p>Products include:</p> <ul style="list-style-type: none"> ▪ Tivoli Storage Manager ▪ Tivoli Continuous Data Protection for Files ▪ TotalStorage Productivity Center 	<p>Products include:</p> <ul style="list-style-type: none"> ▪ Tivoli Access Manager Family ▪ Tivoli Identity Manager Family ▪ Tivoli Federated Identity Manager Family ▪ Tivoli Directory Server ▪ Tivoli Directory Integrator Family ▪ Tivoli Security Compliance Manager ▪ Tivoli Security Operations Manager ▪ Vanguard

Key Acquisitions Speed Customer Value

Platform allows rapid integration of new technologies

IBM IT Service Management



- Service management covering layer 1 to layer 7 network monitoring



- Application discovery and dependency mapping



- End-to-end software asset management - from Mainframe to distributed



- IT chargeback to lines of business

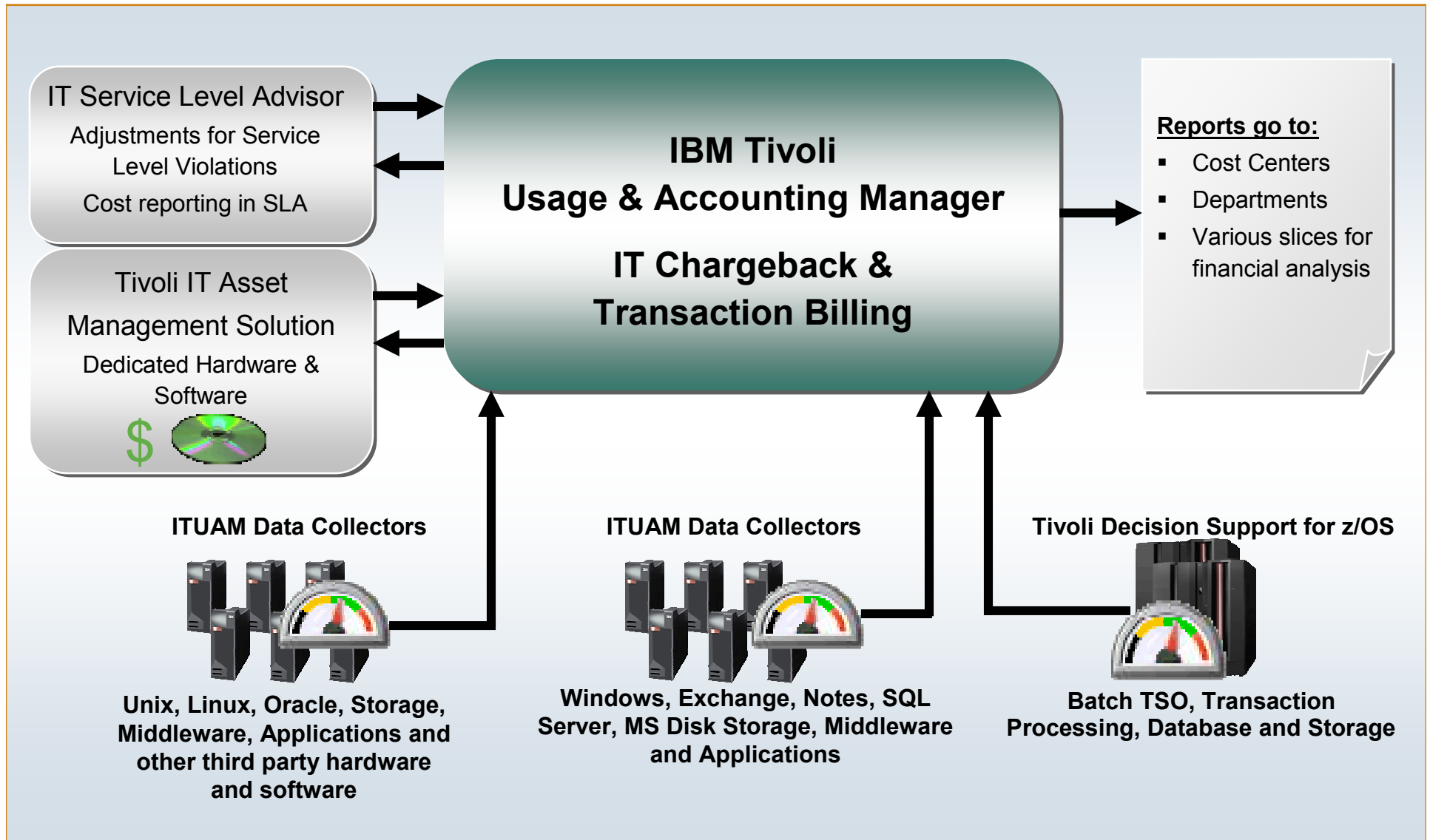


- Automatic install/upgrade operating systems on servers, laptops, desktops



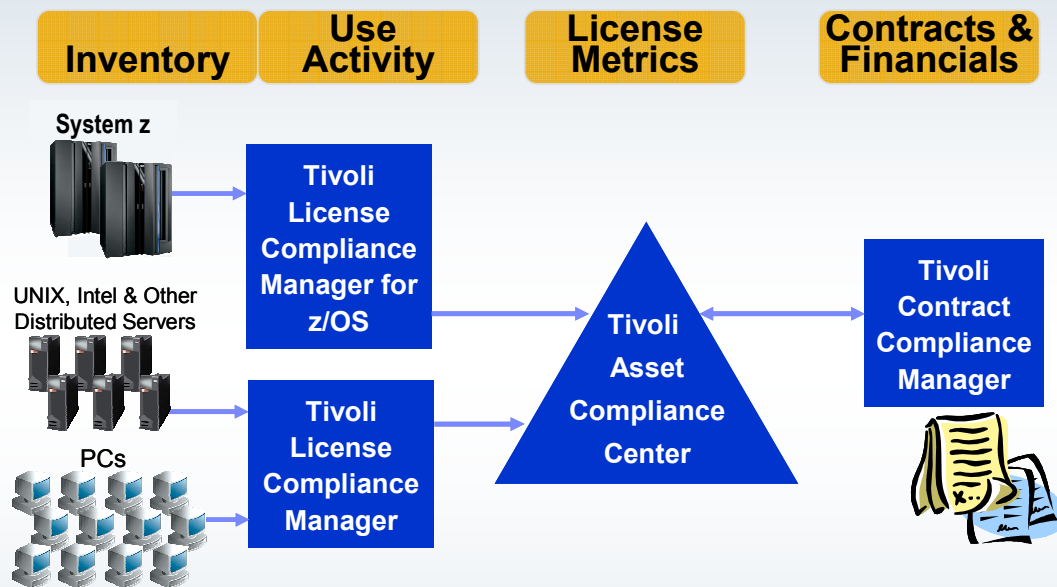
- Integrated asset and service management portfolio under the flagship Maximo® brand

Tivoli Usage & Accounting Manager (from CIMS Labs)



Tivoli End-to-End Software Asset Management

“Enterprises that begin an asset management program experience up to a 30% reduction in costs the first year.. and continue savings of 5-10% for the next 5 years” – Gartner



Business Challenges

- Software costs are difficult to “control”
- Potential for unexpected expensive software license compliance costs
- Hard to obtain essential “who uses what software” information that enables effective software asset management
- Difficult to shift software spending to align with business needs

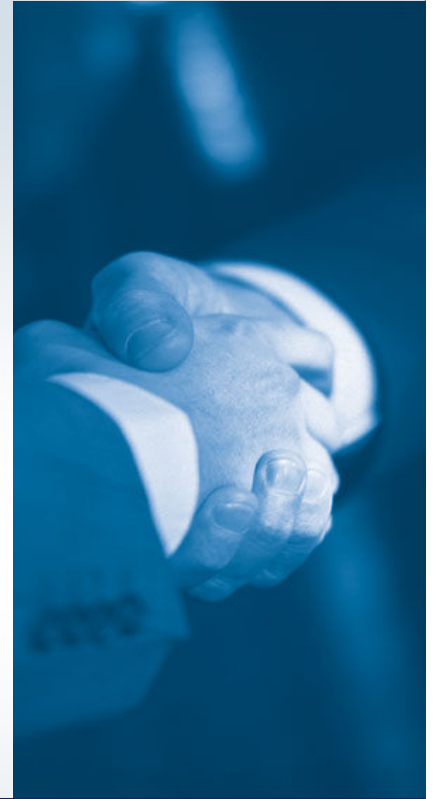
Tivoli Asset Management Benefits

- Tivoli end-to-end software asset management solutions help control software costs and license compliance exposure to free up funds for priority projects
- Helps organizations demonstrate adherence to stringent accounting standards (Sarbanes-Oxley)

Only IBM Tivoli delivers the four essential sets of integrated information required for effective Software Asset Management across all significant environments.

Introducing the Netcool Suite to ITSM

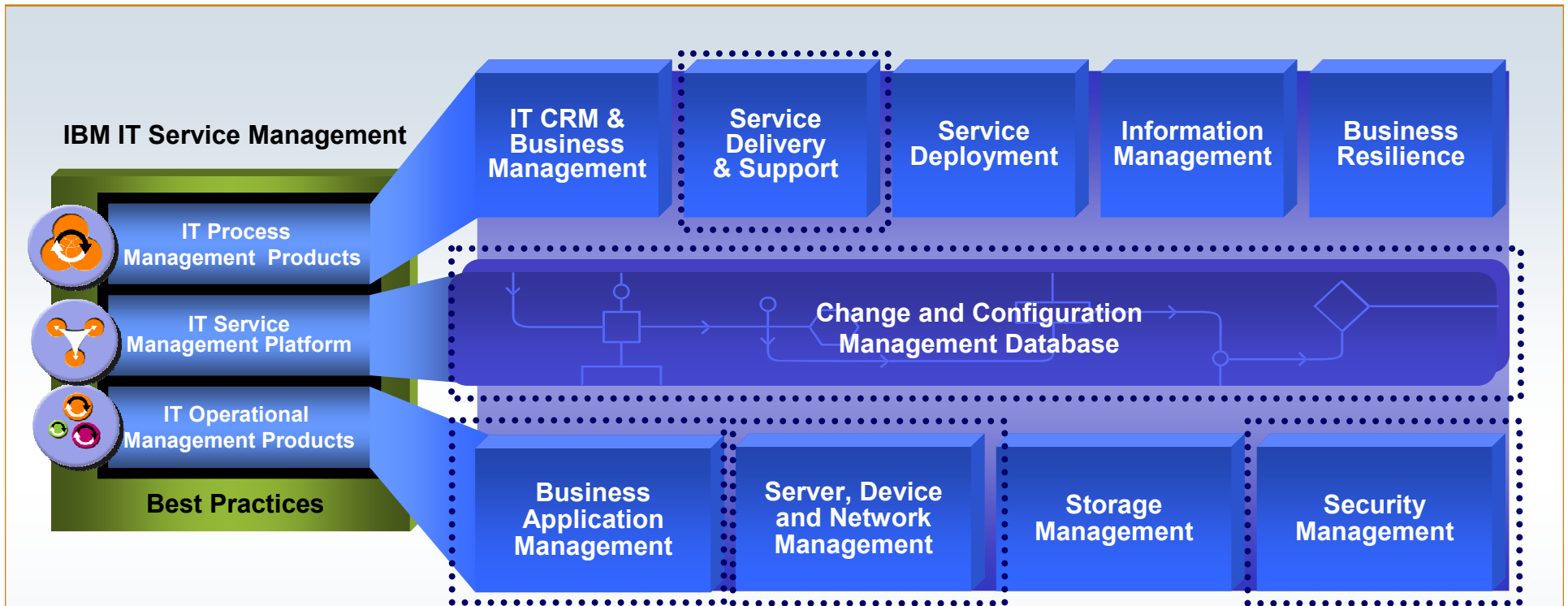
- **Extensive product portfolio under the flagship Netcool® brand**
- **Extend IT Service Management with real-time Network Service Assurance capabilities**
- **Manages the world's most complex networks and services**



“As our business grows, we must deal with increasing complexity while delivering high quality IT services to our business users. The combined Netcool and Tivoli suite will help us meet the challenge.”

— *Mr. Yuan Jun De, Deputy General Manager, Bank of China Information Center*

What Netcool Products Mean to IT Operations



Netcool Solutions bring leading management capabilities:

- Network Management
- Security Management
- Resource Monitoring
- IP Convergence
- Performance Management
- Event Consolidation
- Business Service Management

Service Oriented Architecture

Different Things to Different People

Roles

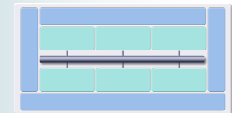
A *model of the business* and related key performance indicators

Business



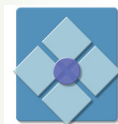
An *architectural style* which requires a service provider, requestor and a service description. It addresses characteristics such as loose coupling, reuse and simple and composite implementations.

Architecture



A *programming model* complete with standards, tools, methods and technologies such as Web services

Implementation

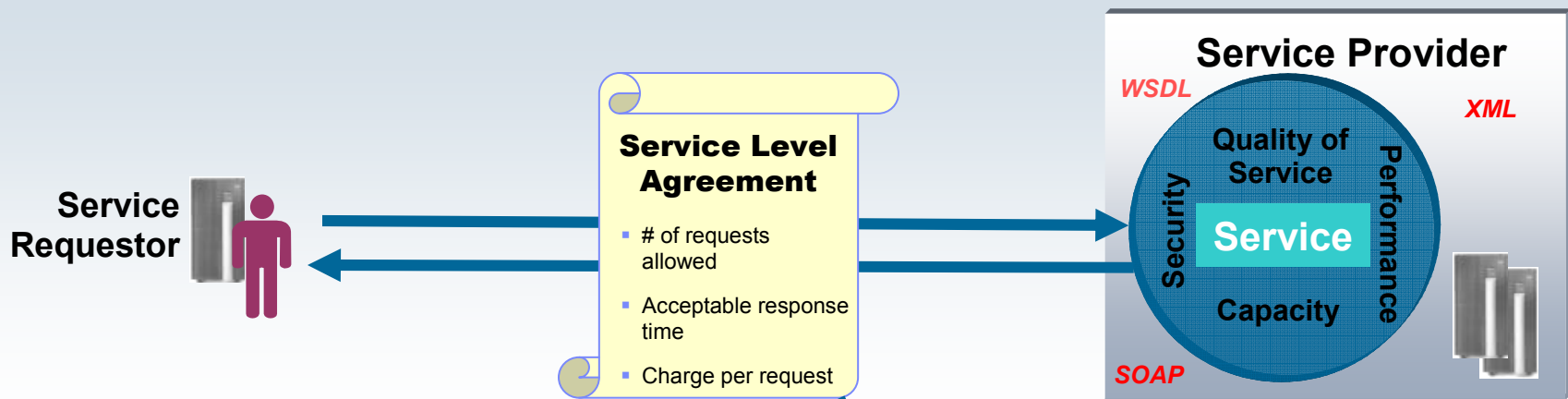


A *set of agreements and contracts* among service requestors and service providers that specify the quality of service.

Operations



Desired End State for Managing Services



- “Contracts” are established between service requestors and providers, they include the Service Level Agreements
- Management focus turns to monitoring for compliance to agreed upon service levels
- “Active” management optimizes systems to avoid service violations

IBM Tivoli Service Level Advisor

Filter Criteria: Time Period: [Today 7 days] Start Date: [2005-10-21] End Date: [2005-10-27] SLA Type: [All]

SLA Status by Customer: 10/21/05 12:00:00 AM EDT to 10/27/05 7:39:43 AM EDT

	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	0.0	0.2	
NewOrder - Average Round Trip Time							

Legend: Critical (red), Warning (yellow), Normal (green), Not Active (grey)

OMEGAMON XE Monitoring Solutions

**IBM Tivoli OMEGAMON XE
on z/OS v4.1.0**

**IBM Tivoli OMEGAMON XE
for CICS on z/OS v4.1.0**

**IBM Tivoli OMEGAMON XE
for IMS on z/OS v4.1.0**

**IBM Tivoli OMEGAMON XE
for DB2 Performance Expert
on z/OS v4.1.0**

**IBM Tivoli OMEGAMON XE
for DB2 Performance
Monitor on z/OS v4.1.0**

**IBM Tivoli OMEGAMON XE for
Mainframe Networks v4.1.0**

**IBM Tivoli OMEGAMON XE for
Storage on z/OS V4.1.0**

**IBM Tivoli OMEGAMON XE for
z/VM and Linux V4.1.0**

**IBM OMEGAMON z/OS
Management Console V4.1.0**

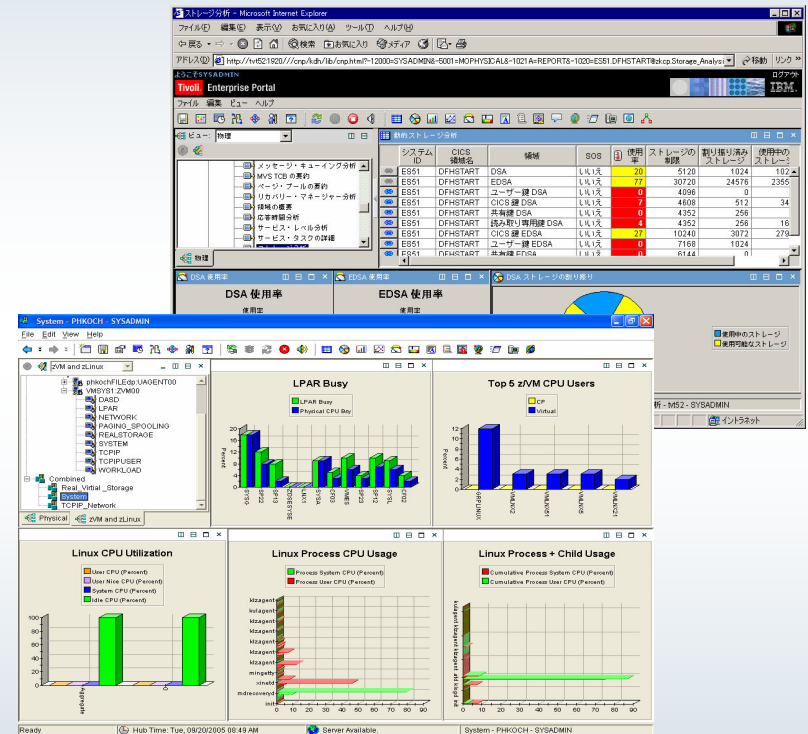
**Diagnose IT problems
across applications,
middleware and
systems**

**SOA-enabled or
traditional computing
infrastructures**

New OMEGAMON XE Capabilities

Common across the OMEGAMON portfolio of solutions

- **CCMDB Integration**
- **Language globalization**
 - French, German, Italian, Spanish, Portuguese, Chinese (simple & traditional), Japanese, Korean
- **Advanced interoperability via workspace linkages**
 - Enhances and improves problem resolution
- **Problem Determination Guides**
 - Improves diagnose and operational problem solving
- **Multi-product version support**
 - Enables incremental deployment of products
- **IBM zIIP monitoring**



Composite Application Management Solutions

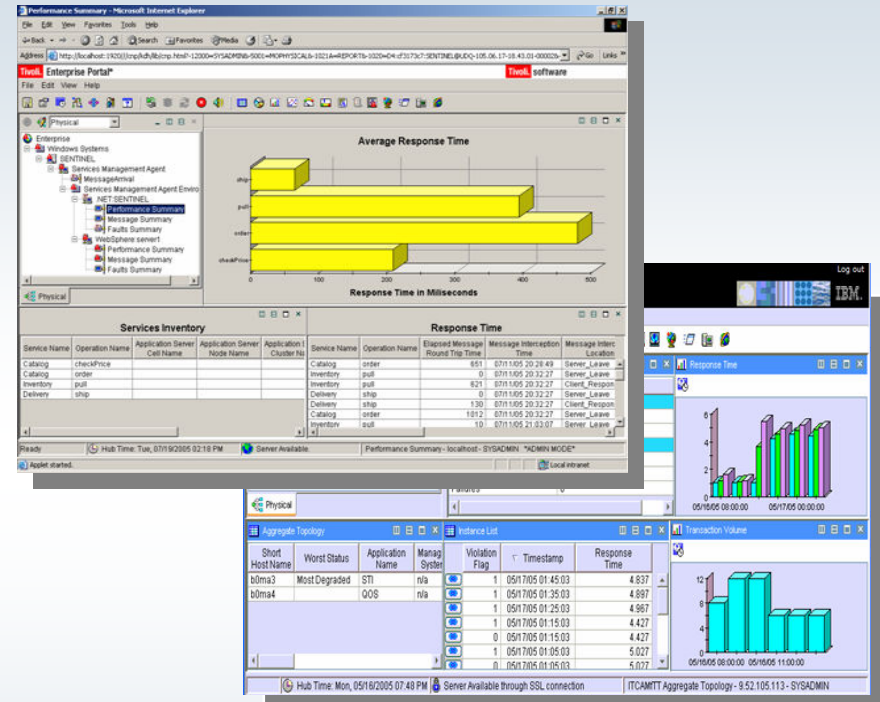
IBM Tivoli Composite Application Manager for WebSphere v6.1

IBM Tivoli Composite Application Manager for J2EE v6.1

IBM Tivoli Composite Application Manager for SOA v6.1

IBM Tivoli Composite Application Manager for Response Time Tracking v6.1

IBM Tivoli OMEGAMON XE for Messaging v6.0

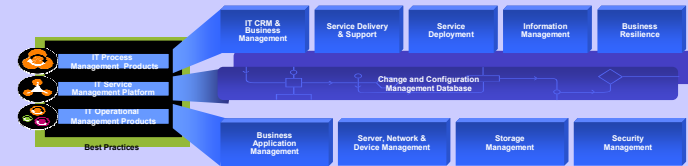


Automatically monitor, analyze and resolve problems within component-based applications regardless of their cause

Composite Application Manager for SOA v6.1

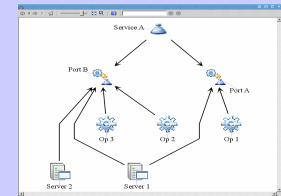
Support for ITSM strategy

- Discovery Library Adapters add discovered Service information to CCMDB



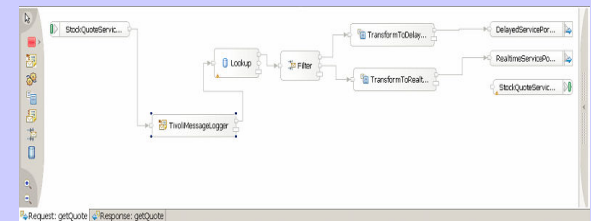
Integration with WebSphere Service Registry and Repository

- Reconciliation of registered services with those monitored by TCAM
- Tivoli Enterprise Portal views show business process relationships for impact analysis



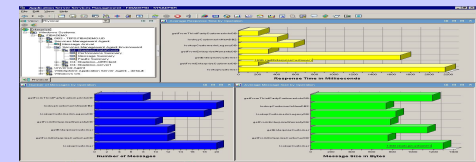
Integration with WebSphere Enterprise Service Bus SCA runtime

- Provides SCA-based mediation primitives for enhancing management functions (monitoring, logging, routing and transformation)



New Platform support

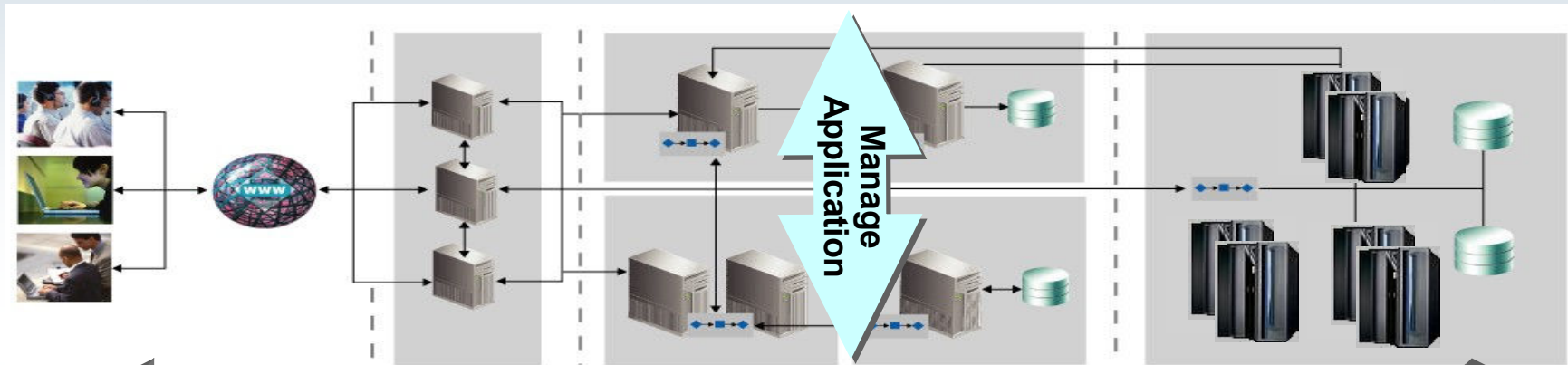
- CICS TS 3.1, DataPower SOA Appliances, WebSphere ESB, WebSphere CE, JBOSS Application Server, SAP NetWeaver



Tivoli Composite Application Management Portfolio

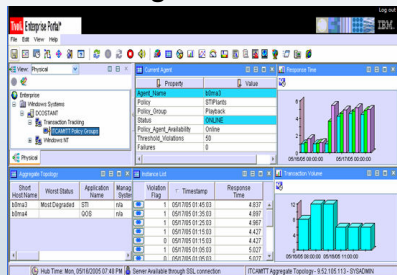
Delivering high-performing composite applications

Analyze and Measure Transactions & Services

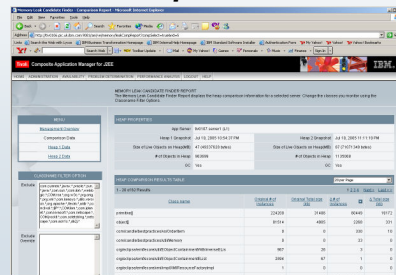


Monitor Infrastructure

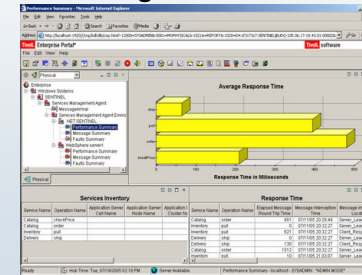
Composite Application Manager for RTT



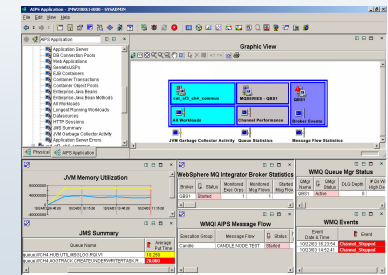
Composite Application Mgr for WebSphere & J2EE



Composite Application Manager for SOA



OMEGAMON XE and ITM



Workload and System Automation Solutions

**IBM Tivoli Workload Scheduler
for z/OS v8.3**

**IBM Tivoli Dynamic Workload
Broker v8.3**

**IBM Tivoli System Automation
for Multiplatforms v2.2**

IBM Tivoli AF/REMOTE 1.0.1

**IBM Tivoli System
Automation for z/OS v3.1
(for TWS integration)**

**Monitor, manage and automate workloads
across traditional infrastructure and SOA-
enabled environments**

**Extends the automatic clustering,
scheduling and management capabilities of
TWS to virtual computing and SOA**

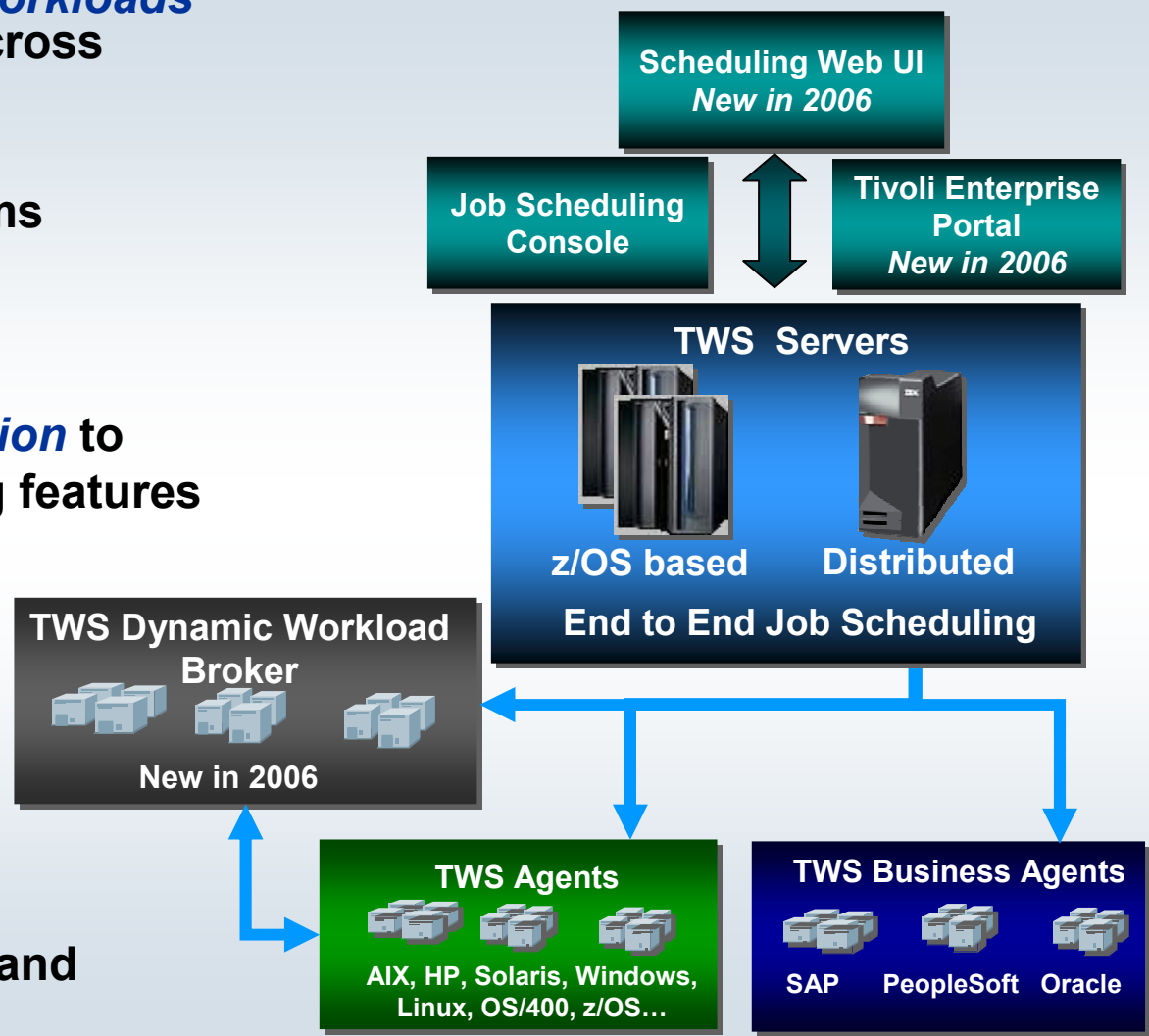
**Automate I/O operations, Sysplex
resources, and system operations from a
single point of control**

**Enhanced alerting, notification and
escalations**

**Automatically start and stop application
groups according to planned, event-based
or ad hoc TWS workload schedules**

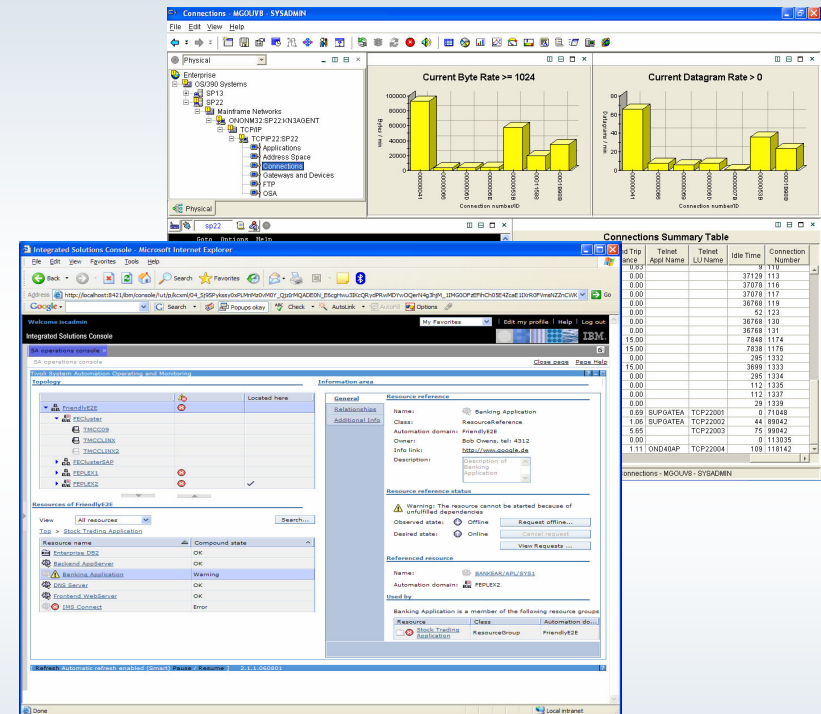
IBM Tivoli Workload Scheduler

- **Single solution to integrate workloads** from multiple applications, across multiple platforms.
- **Improves availability and integrity** of production systems
- **High Availability and Fault Tolerant** architecture.
- **Enhanced TWS-WLM integration** to support new WLM scheduling features
- **New TEP integration** to monitor the status of TWS critical jobs
- **Dynamic real-time workload automation** in addition to traditional calendar and event-based scheduling
- **New Critical Path Monitoring** and management feature for TWS



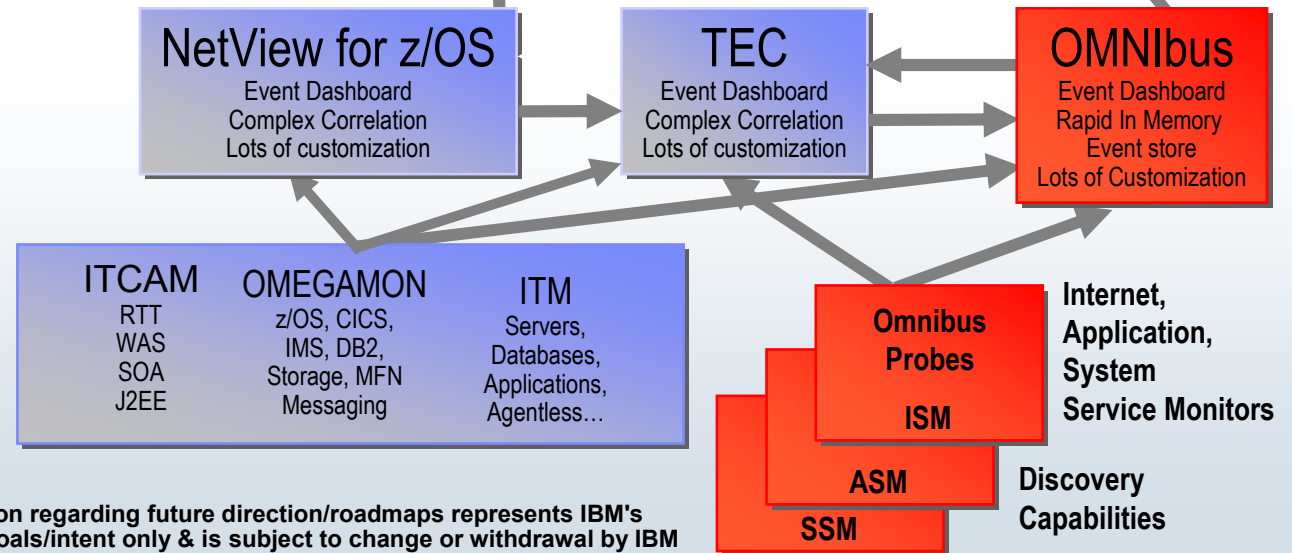
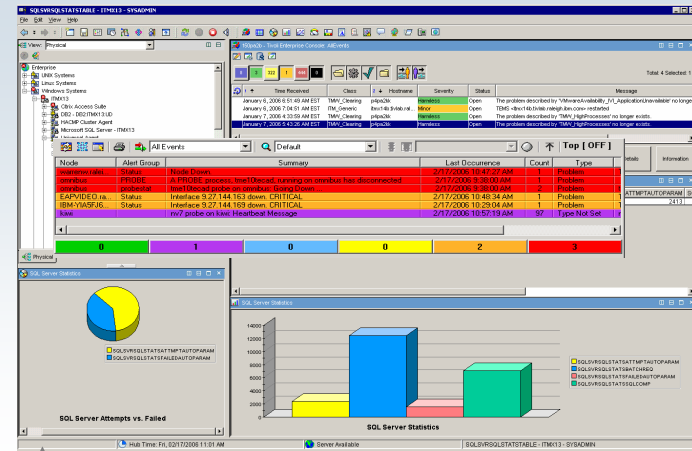
System Automation & NetView for z/OS

- Enhanced *Tivoli System Automation on z/OS* (TSA) integration with Tivoli Workload Scheduler (TWS)
- Tivoli System Automation for Multiplatforms* provides integration with IBM High Availability Cluster Multiprocessing (HACMP) and Microsoft Server Cluster Service (MSCS)
- Tivoli NetView on z/OS* enhanced TEP integration improved network availability and performance management



Event and Automation Roadmap

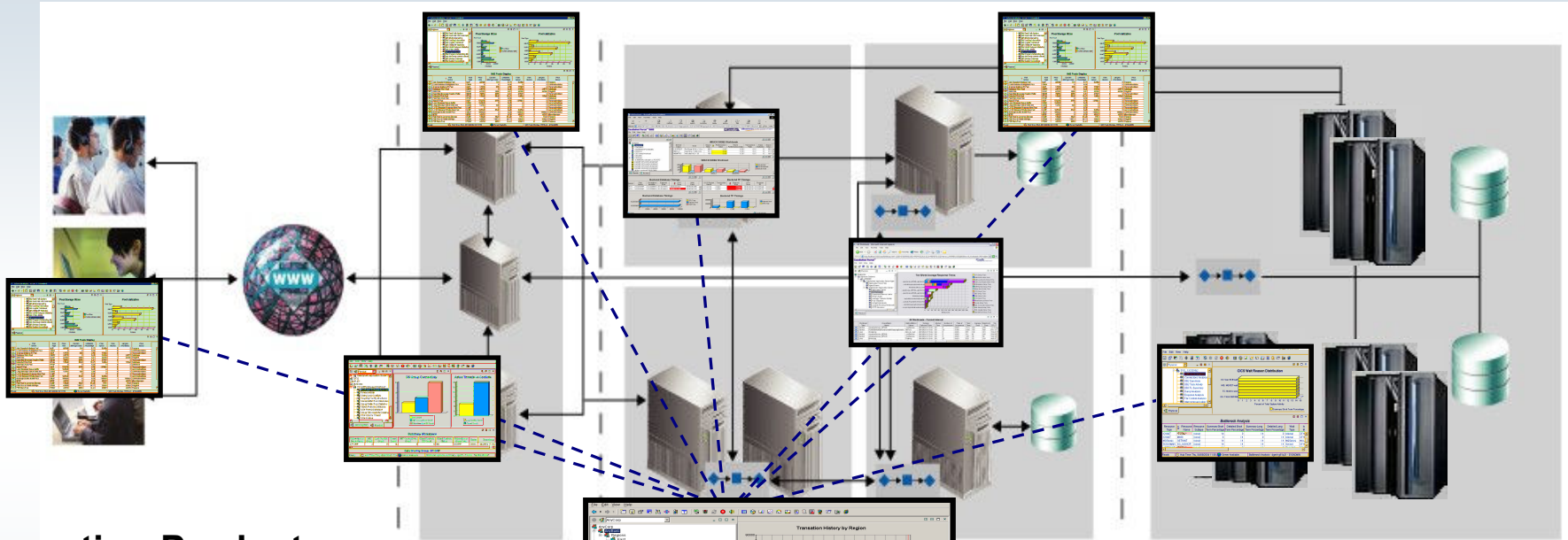
- **Critical Concepts**
 - Moving to *Single Console*
 - Everything to Event MoM
 - The Event Infrastructure is just plumbing
 - Flexibility of Correlation
- **Converged Event Manager**
 - Performance, Scalability, Resiliency
- **Protect Existing Investment:**
 - TEC Rulesets
 - OMNibus Integration, scale and availability



Information regarding future direction/roadmaps represents IBM's current goals/intent only & is subject to change or withdrawal by IBM

Complete View Of Application Performance

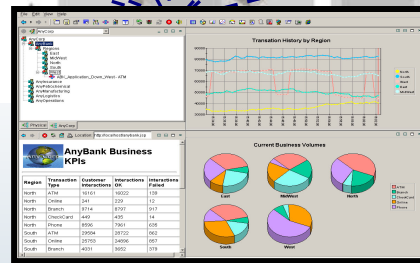
A Dynamic Role-based Policy Workspace for Integrating IT Operations Silos



Integrating Products

- Tivoli Enterprise Console
- NetView for z/OS
- System Automation
- Tivoli Workload Scheduler
- Tivoli Monitoring Version 5
- Tivoli Service Level Advisor
- Tivoli Business Systems Manager
- Netcool OMNibus Active Event List

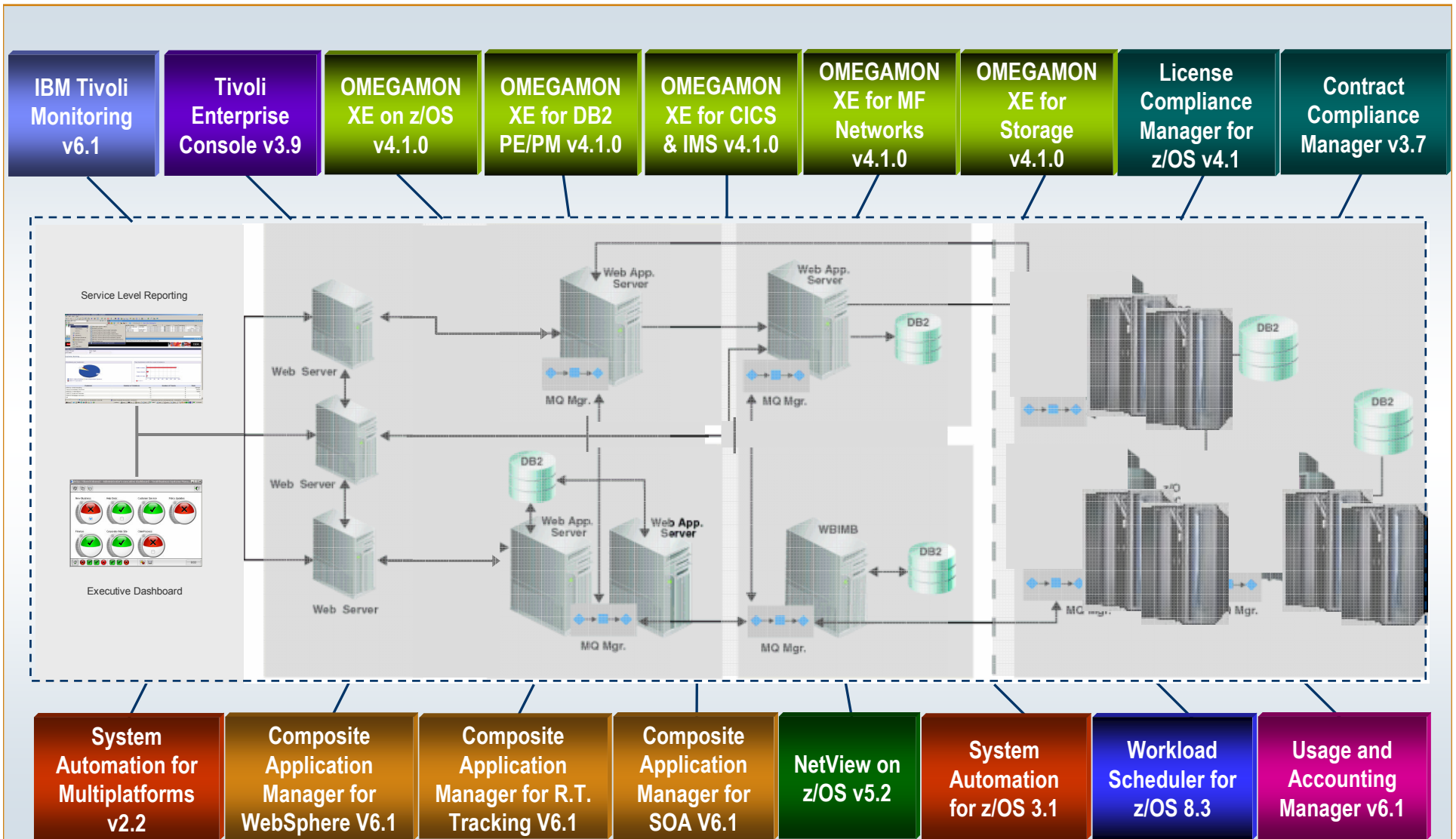
Tivoli Enterprise Portal (TEP)



Embedded Portal for

- Tivoli OMEGAMON for System z
- Tivoli Monitoring Version 6
- IBM OMEGAMON z/OS Management Console
- Tivoli Composite Application Manager Family

End to End Management from Tivoli



View: Physical

- Enterprise
 - UNIX Systems
 - Linux Systems
 - Windows Systems
 - ITMX13
 - Citrix Access Suite
 - DB2 - DB2:ITMX13:UD
 - HACMP Cluster Agent
 - Microsoft SQL Server - ITMX13
 - Universal Agent
 - 9-42-48-0:SNMP-MANAGER00
 - candlex13:MICROMUSESSM00
 - AVAILABILITY
 - EVENT_LOG
 - GENALARMCONTROLTABLE
 - GENALARMDATATABLE
 - IISFTP
 - IISFTPSITETABLE
 - IISGLOBAL
 - IISSMTPSERVERTABLE
 - IISWEB
 - IISWEBASP
 - IISWEBSITETABLE
 - PERFORMANCE_OBJECT_STATUS

f50pa2b - Tivoli Enterprise Console: AllEvents

Total: 4 Selected: 1

Time Received	Class	Hostname	Severity	Status	Message
January 6, 2006 6:51:49 AM EST	TMW_Clearing	p4pa2kk	Harmless	Open	The problem described by 'VMwareAvailability_IVI_ApplicationUnavailable' no longer exists.
January 6, 2006 7:04:51 AM EST	ITM_Generic	itm14b.tivlab.ral...	Minor	Open	TEMS <itm14b.tivlab.raleigh.ibm.com> restarted
January 7, 2006 4:33:59 AM EST	TMW_Clearing	p4pa2kk	Harmless	Open	The problem described by 'TMW_HighProcesses' no longer exists.
January 7, 2006 5:43:26 AM EST	TMW_Clearing	p4pa2kk	Harmless	Open	The problem described by 'TMW_HighProcesses' no longer exists.

Buttons: Custom Button, Acknowledge, Close, Details, Information

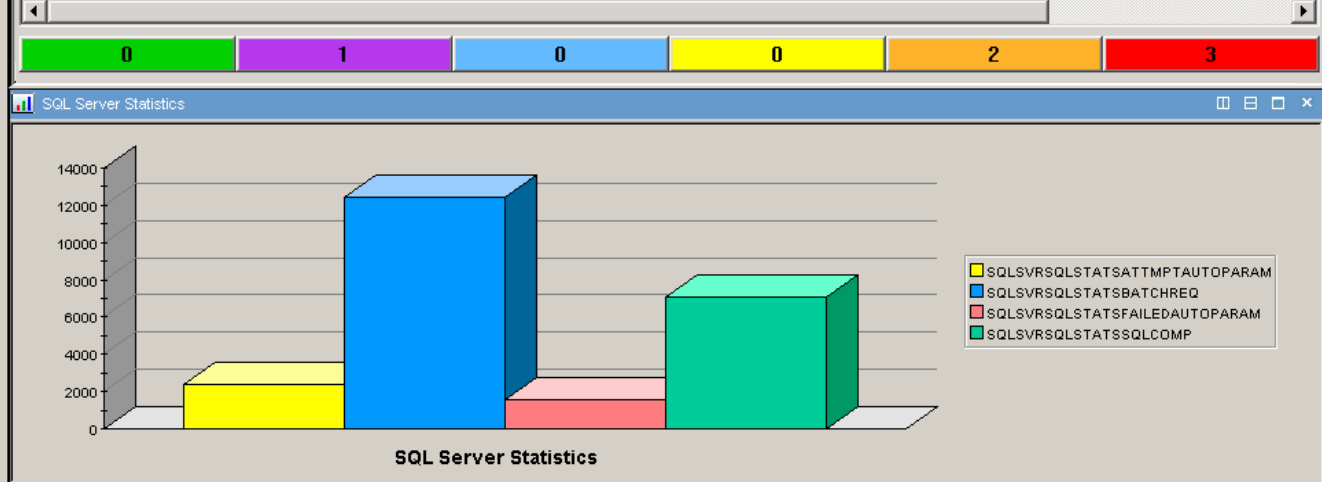
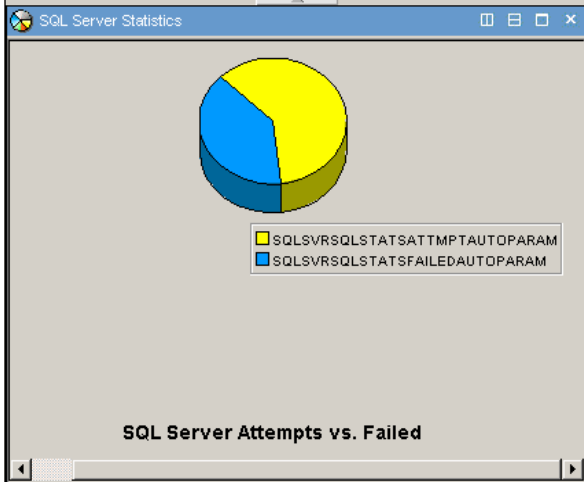
Micromuse Active Event List

All Events | Default | Top [OFF]

Last Occurrence	Count	Type
2/17/2006 10:47:27 AM	1	Problem
2/17/2006 9:38:00 AM	1	Problem
2/17/2006 9:38:00 AM	2	Problem
2/17/2006 10:48:34 AM	1	Problem
2/17/2006 10:29:04 AM	1	Problem
2/17/2006 10:57:19 AM	97	Type Not Set

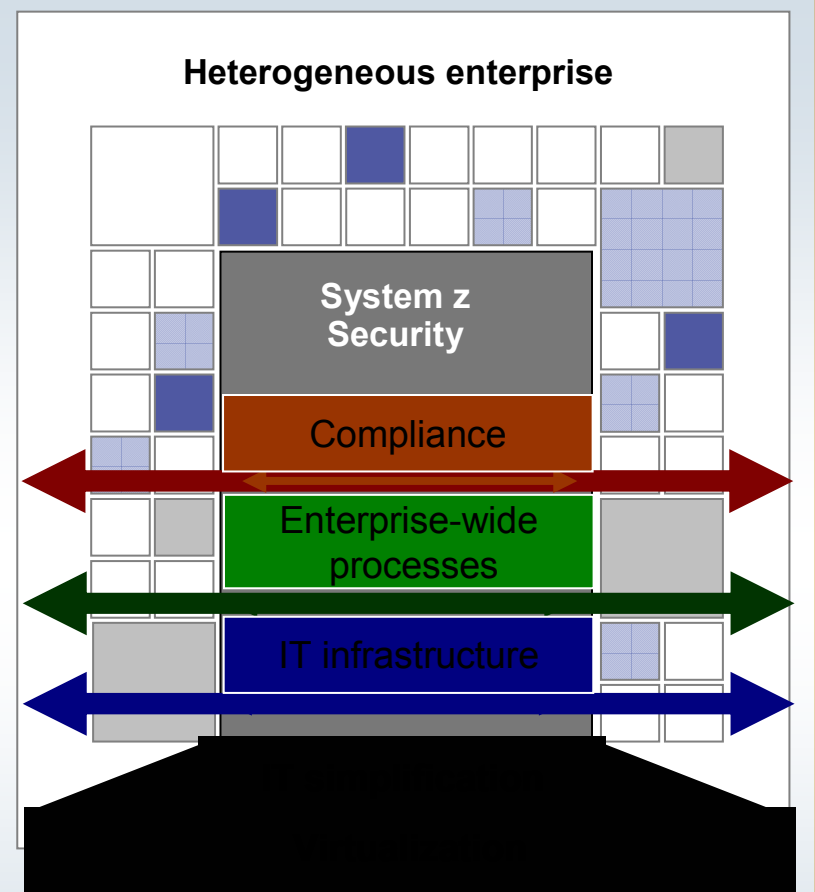
Tivoli Enterprise Portal

Everything at your Fingertips



IBM System z Security

Our goal is to continually **increase value** to protect our customers' investments by **extending** premiere System z **capabilities** across **heterogeneous platforms** to become the '**Enterprise Trust Authority**' for On Demand Business.



“Whilst the performance and resilience characteristics (of the System z9 109) are formidable, it is the security features that are likely to attract most attention”

Tony Lock – Chief Analyst, Bloor Research 2005

Securing The Enterprise

- System z has 40 years proven experience in securing complex commercial applications
 - **It is the world's most secure platform!**
- Tivoli has proven experience in securing distributed computing environments
- Both solutions embrace standards, common criteria
- The strengths of System z and Tivoli are best when leveraged together
 - **Solution greater than the sum of its parts**



- Modern computing environments require a paradigm shift in security
- End to end security requires a seamless and complete security approach
- New solutions integrate IBM capabilities....
- A combined approach for the best in policy, auditing, identity, access and risk management....and more

Security Management Solutions

IBM Tivoli Federated Identity Manager for z/OS v6.1

Federated Identity Manager spans both System z and distributed environments to help manage SOA security

IBM Tivoli Directory Integrator for z/OS v6.1

Directory Integrator synchronizes information across applications and platforms

IBM Tivoli Identity Manager for z/OS v4.6

Identity Manager addresses the full lifecycle management of users

System z centralized key management

Highly secure and available key data store using tamper-resistant hardware

Federated Identity Manager for z/OS

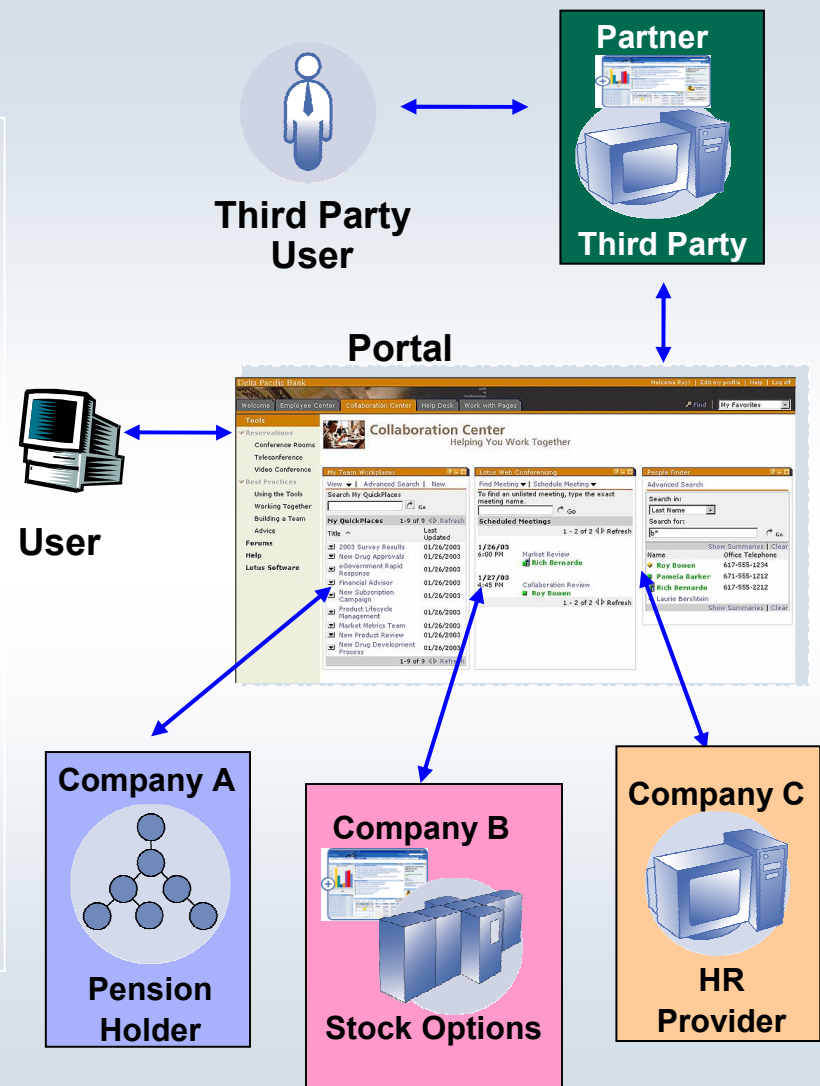
Allows web services, backed by z/OS subsystems such as CICS, to be secured by z/OS Security Services

Preserves identity at the granularity of the requesting user for audits

Uses z/OS auditing (SMF) to improve regulatory compliance

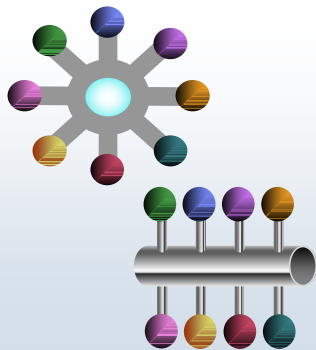
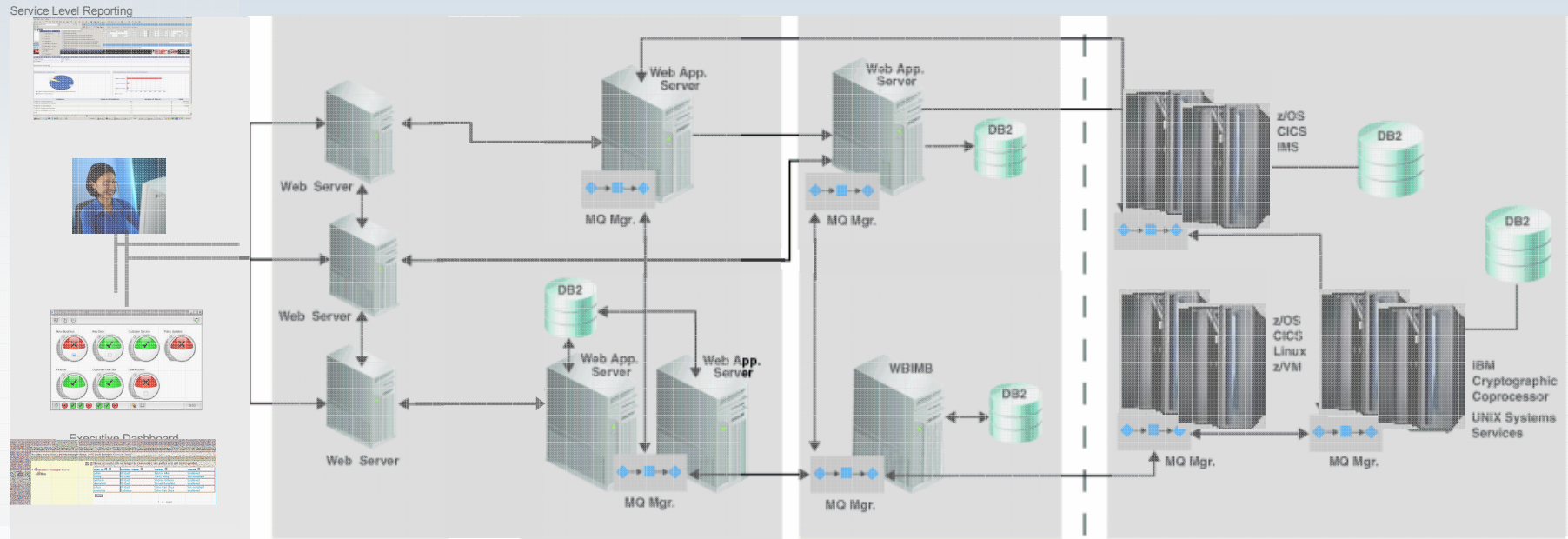
Improves integration and user experience

Can be used between business partners or between multiple lines of business within an enterprise enabling secure, trusted transactions



End to End Security

Secure Business Processes in a SOA Environment



- Secure Web Services integration with business partners and within the enterprise
- Data confidentiality with secure key management
- End-to-end security management and credential transform in an SOA environment

End to end tape encryption solution: An Industry First!

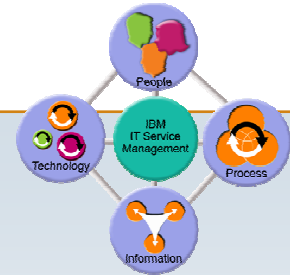
- **IBM System Storage TS1120 Tape Drive**
- **New Encryption Key Manager program**
- **Manage tape encryption based on security policies**
- **Integration with IBM tape systems, libraries**
- **Enhancements to Tivoli Storage Manager**
- **Integration with System z security and encryption capabilities**



**Available
Now!**



IT Service Management Summary



- **IBM Tivoli is committed to bringing System z solutions that:**
 - Expand System z capabilities while enhancing its proven strengths
 - Reduce the costs associated with operational and systems management
- **Integrate and Interoperate**
 - Maintaining our leadership in enhancing System z hardware and software to integrate and interoperate with new platforms and applications
- **End to End Solutions**
 - Providing End-to-End management solutions to find and fix problems quickly, leveraging System z and Tivoli solutions
- **IT Service Management Solutions**
 - Delivering IT Service Management solutions that can meet your key IT challenges cost effectively



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