The next step in IT optimization begins here

IT Service Management

Alan Ganek

CTO, Tivoli Software
VP, Autonomic Computing

Agenda

- **IT challenges and trends**

- **IBM's management vision and approach**

- **IT Service Management solutions for System z**

- **Next steps to realizing the value of ITSM**

"What matters is how satisfied customers are, how costs are being saved on the supplier side, and how to allow for more creativity and added value at all levels of the organization." --Erik Brynjolfsson, Director of the Center for eBusiness at MIT

The Challenge: IT Organizations Are Under Tremendous Pressure

- **Change:** Market demands, workloads, service levels

- **Compliance:** Regulations, security, audit capabilities

- **Complexity:** Heterogeneous resources, 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

IT Infrastructure Trends – Increasing Complexity

Complexity of today's composite applications…

"… most **Global 2000 companies support 500-1000 applications**, and the majority of these are not of the shrink-wrapped variety."

"Application Management Poll Reveals New Trends"
Cameron Haight
Gartner April 2004

…make managing IT infrastructure a different challenge every day.

"**Composite applications** have contributed to increased management complexity. Organizations need to be able to maximize the potential for these types of applications by **ensuring that robust management processes are in place – across the application lifecycle**."

Cameron Haight
Gartner February 2005

IT Infrastructure Trends – Compliance

The changing global regulatory and business environment requires security, privacy, and ongoing audit capabilities.

"On a typical day, the security team logs 38,000 attempts – by unauthorized individuals or automated probes – to access the state's networks. **That's about one every 2.3 seconds."**

"Defending Data: a Never-Ending Vigil"
Todd Spangler quoting Dan Lohrman, Chief Security Officer for the State of Michigan
*Baseline, 2004*

IT Infrastructure Trends – Speed of Change

Rising workloads in a volatile business climate, make meeting service level expectations a daunting challenge.

"… the largest z/OS installations **have more than doubled their 'MIPS to head count' ratio**."

"Find the Right Staffing Level for Your z/OS Data Center" L. Mieritz, M. Willis-Fleming Gartner, February 2004

zSeries Workloads

13,272 MIPS

5,994 MIPS

2001   2004
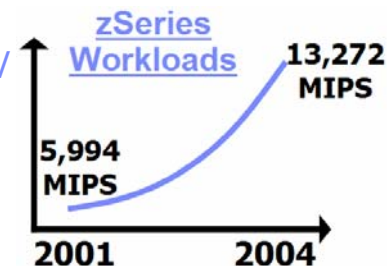
"Business activity across our applications is in constant flux. The correct settings for performance yesterday will be different from what it needs to be today, and different from what it will need to be tomorrow."
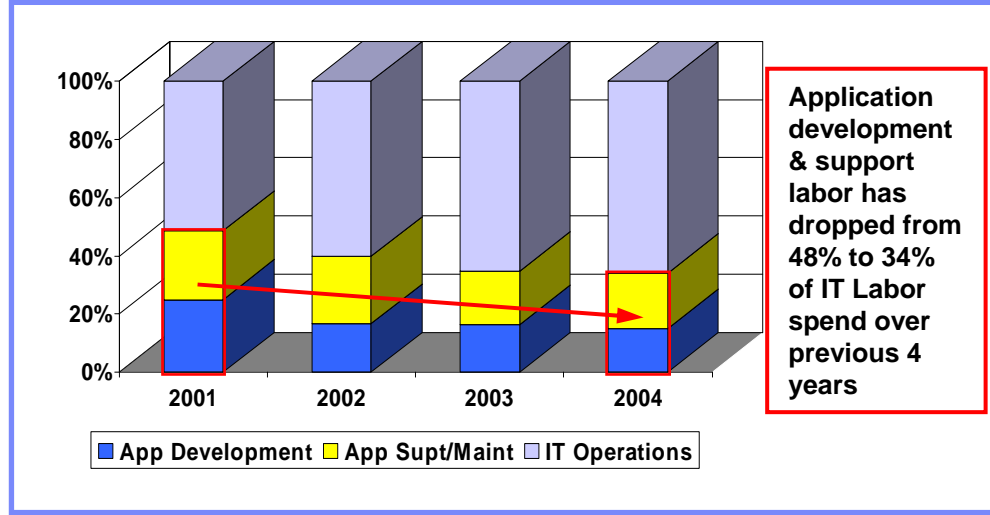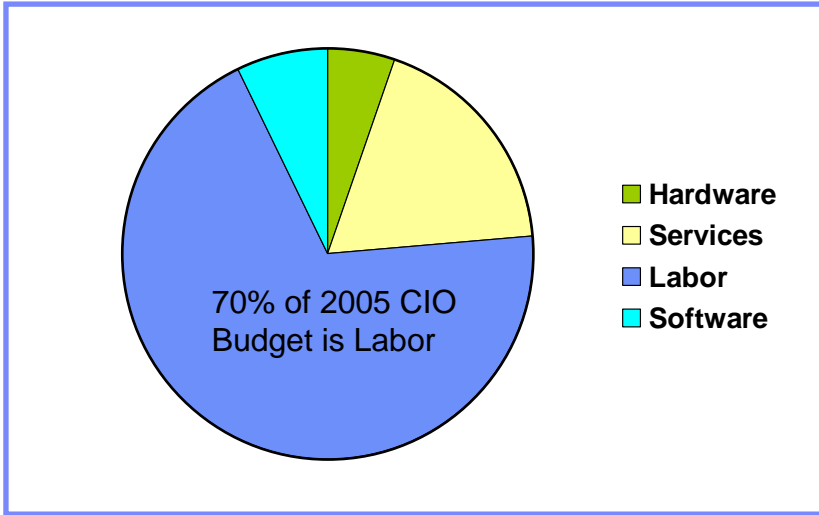
Ken Van Kley, Blue Cross Blue Shield Illinois

Distributed Server spending vs management costs

Spending (USB$)   Installed Base (M Units)

New server spending (USM$) 3% CAGR
Cost of mgmt. & admin. 10% CAGR
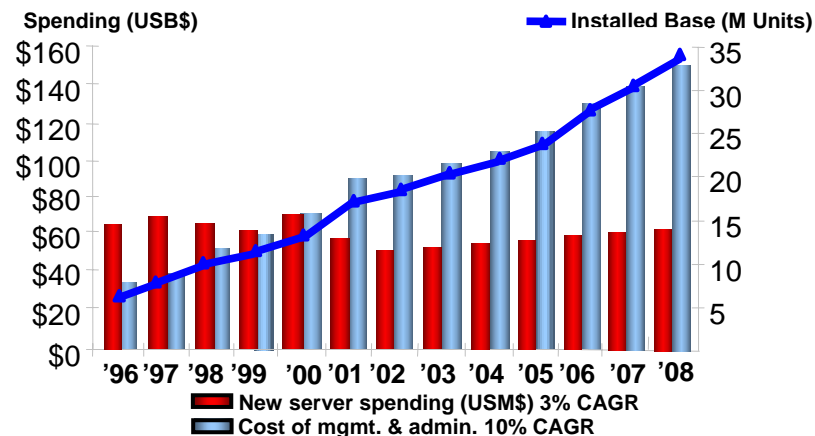
IT Infrastructure Trends – Cost

Decrease in Efficiency as IT Spending Shifts to Operations Labor

Pie chart legend:
- Hardware
- Services
- Labor
- Software

70% of 2005 CIO Budget is Labor

Bar chart legend:
- App Development
- App Supt/Maint
- IT Operations

Years: 2001, 2002, 2003, 2004

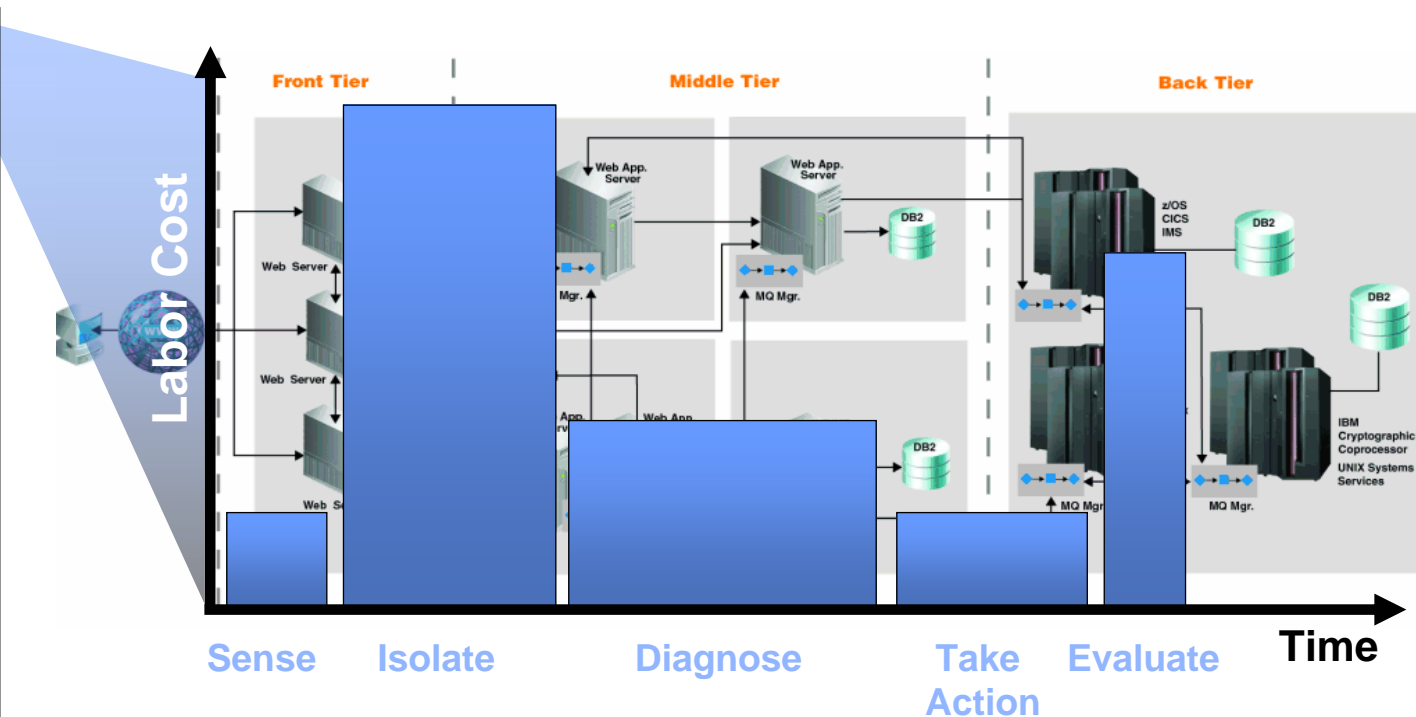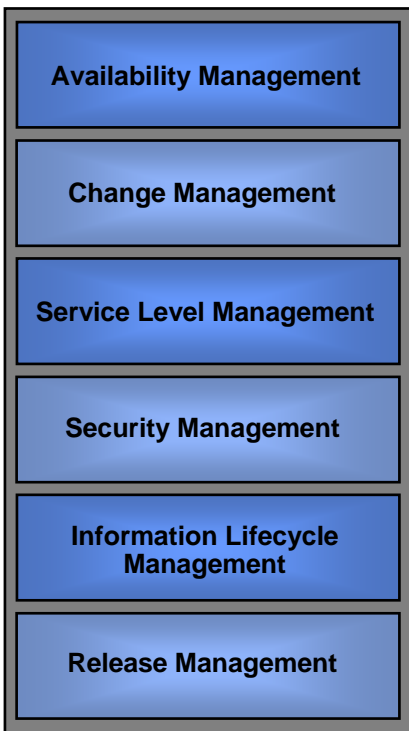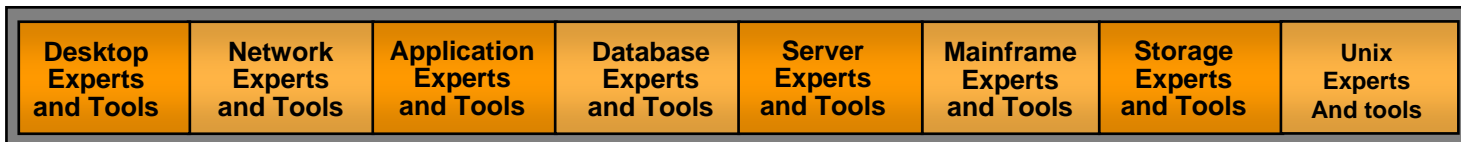Application development & support labor has dropped from 48% to 34% of IT Labor spend over previous 4 years

- 70% of CIO budget is labor
- Operations labor will be 73% of CIO labor budgets by 2008
- Application development will decline at -10% CGR to 2008
- $325B in operations labor by 2008

Bar chart legend:
- Administration
- Development
- Operations

Years: 2005, 2006, 2007, 2008
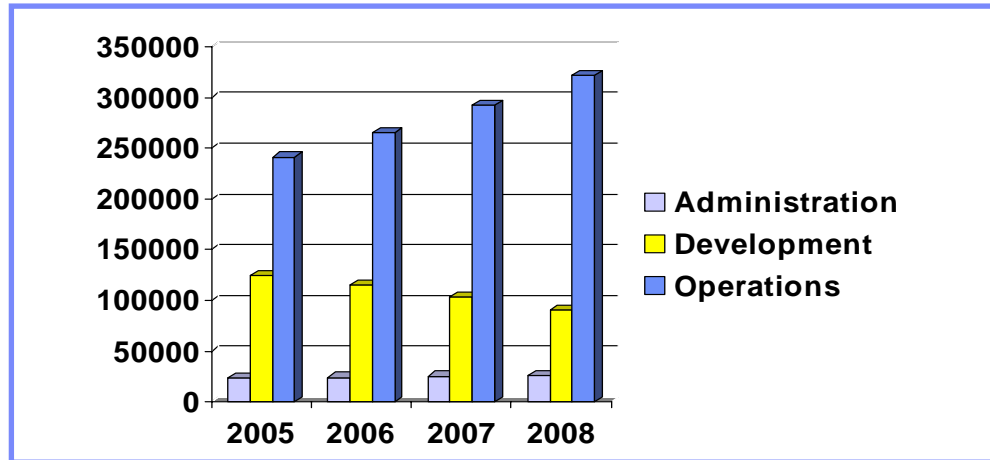
Source: Tivoli Commissioned IDC Study 1Q05

Source: Gartner Group, IT spending and staffing surveys

Architectural Complexity Exposes Organizational Complexity

Desktop Experts and Tools	Network Experts and Tools	Application Experts and Tools	Database Experts and Tools	Server Experts and Tools	Mainframe Experts and Tools	Storage Experts and Tools	Unix Experts And tools

Availability Management

Change Management

Service Level Management

Security Management

Information Lifecycle Management

Release Management

Labor Cost

Front Tier — Middle Tier — Back Tier

Web Server, Web App. Server, DB2, MQ Mgr., z/OS CICS IMS, IBM Cryptographic Coprocessor, UNIX Systems Services

Sense   Isolate   Diagnose   Take Action   Evaluate   Time

IT Vision: Managing IT Like a Business

Effective and efficient delivery of IT services in support of business goals

Desktop Experts and Tools	Network Experts and Tools	Application Experts and Tools	Database Experts and Tools	Server Experts and Tools	Mainframe Experts and Tools	Storage Experts and Tools	Unix Experts And tools

Availability Management

Change Management

Service Level Management

Security Management

Information Lifecycle Management

Release Management

Technology
- Infrastructure Management technologies and products for resilient services
- Integrates self-managing autonomic technologies

People
- Governance establishes the decision framework
- Organization functions in clearly understood roles

Information
- Information for the technologies that act on it
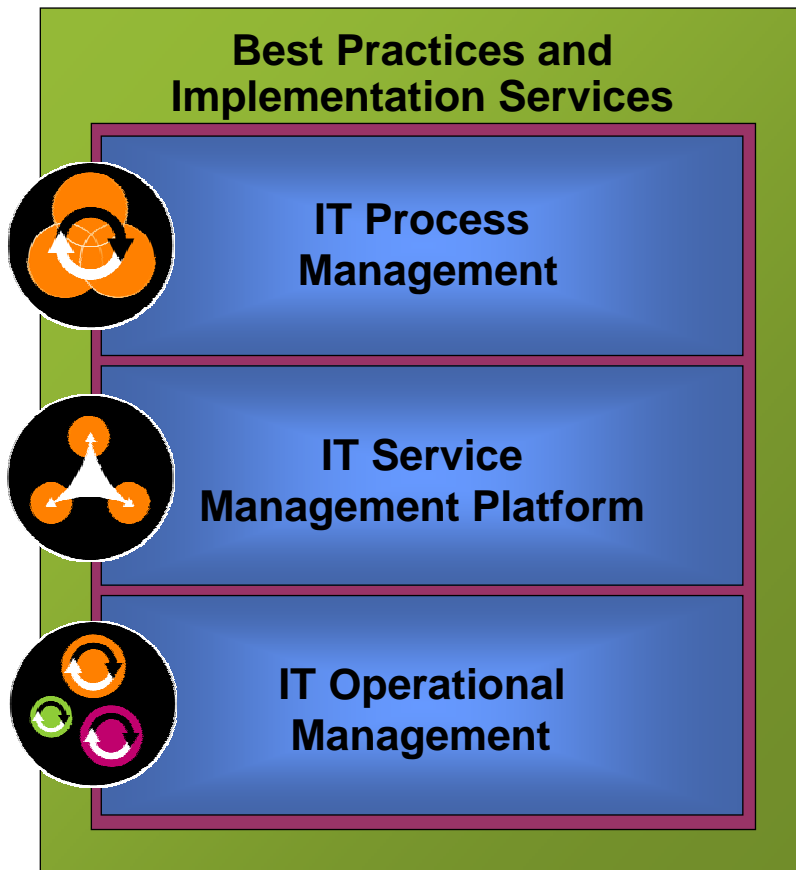- Standardized and centralized view of information

Processes
- Integrated to enable increased value add from IT Services
- Automation of process and service workflows to reduce costs

Technology

Information

IT Service Management

People

Process
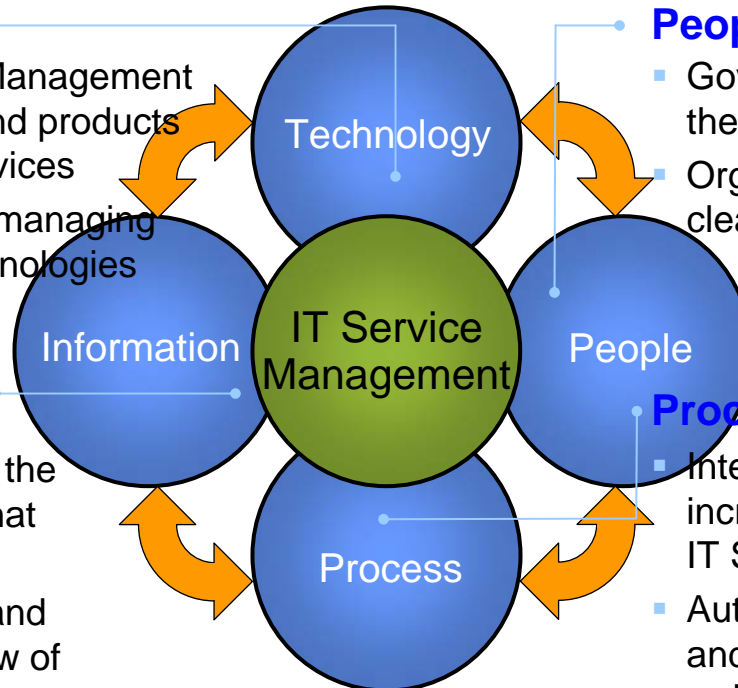
Putting IT Service Management into Action

IBM IT Service Management

Technology

Information — IT Service Management — People

Process

Best Practices and Implementation Services

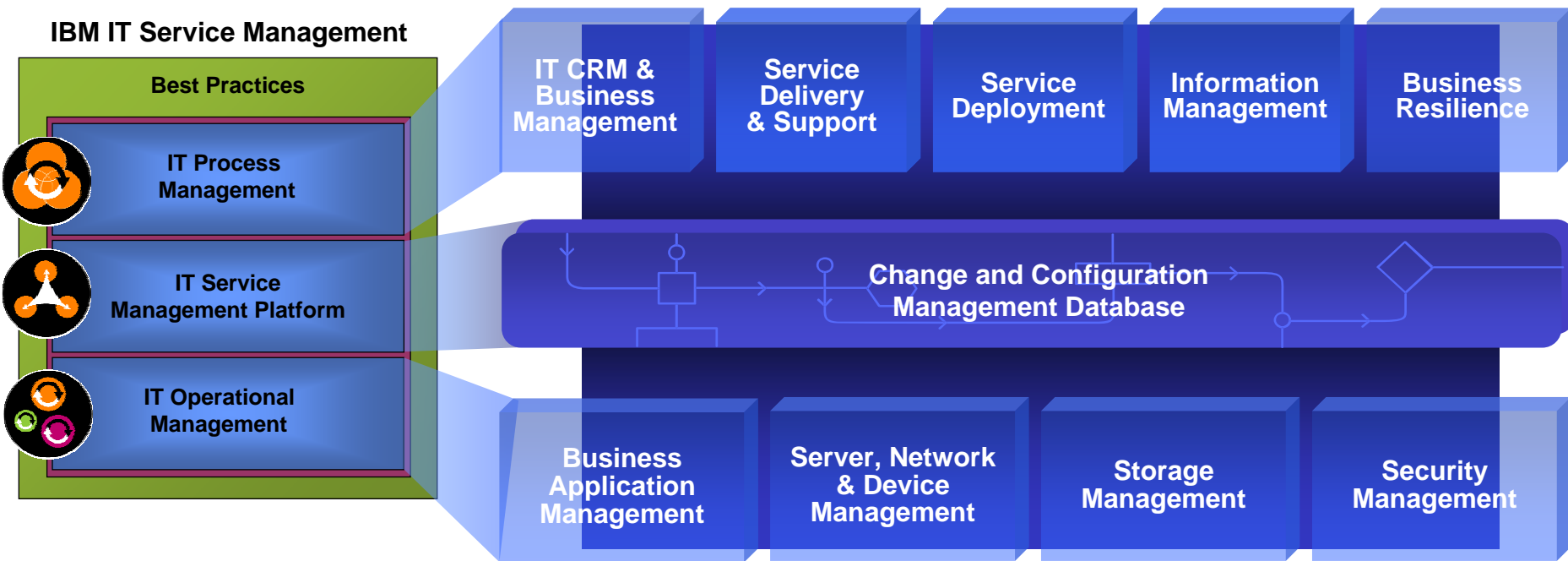**IT Process Management**

IT Service Management Platform
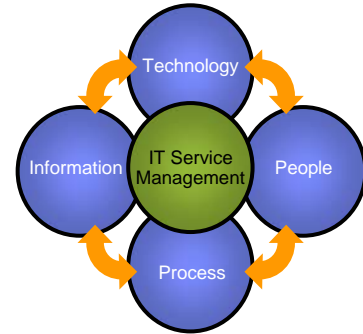
IT Operational Management

- Automated ITIL-aligned workflows

- Open, standards-based CMDB and workflow engine

- Automated infrastructure-aligned tasks

- Best Practices and Implementation Support

- Built on SOA and Autonomic Computing Technologies

IBM IT Service Management

A Differentiated, Flexible Approach

IBM IT Service Management

Best Practices
IT Process Management
IT Service Management Platform
IT Operational Management

IT CRM & Business Management	Service Delivery & Support	Service Deployment	Information Management	Business Resilience

Change and Configuration Management Database

Business Application Management	Server, Network & Device Management	Storage Management	Security Management

ITSM Process Managers: Automated Management of Your Key Business Processes Right Out of the Box

- Packaged solutions with predefined processes
- Integrates with Tivoli and non-Tivoli products
- Improves customer focus and satisfaction
- Assists in regulatory compliance

IBM IT Service Management

Best Practices

IT Process Management

IT Service Management Platform

IT Operational Management

Application Management

Service Level Management

Availability Management

Information Lifecycle Management

Workload Management

Release Management

Service Continuity Management

Security Management

IT Financial Management

Compliance Management

Available 1H2006

Tivoli Change and Configuration Management Database – A Platform for IT Service Management

Based on <u>proven</u> IBM technology: **Tivoli** **WebSphere** **DB2.** **IBM @server**

IBM IT Service Management

Best Practices

- IT Process Management
- IT Service Management Platform
- IT Operational Management
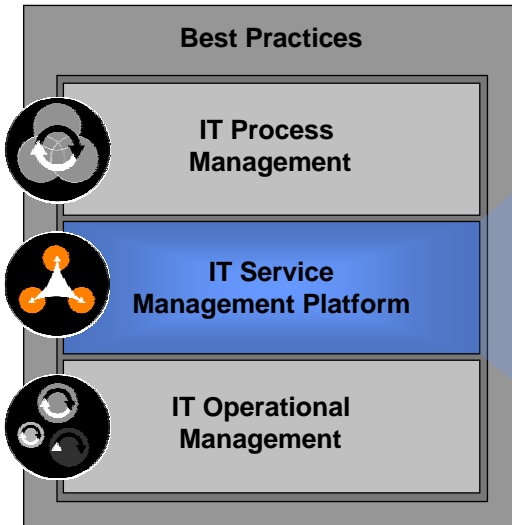
- **Configuration Management Database**
  - Open, federated model
  - API and GUI reporting access

- **Workflow Engine**
  - Based on WebSphere technology
  - Process modeling and simulation
  - Automated process execution
  - Real-time monitoring and reporting

- **Automated Process Workflows**
  - Change & configuration management

Limited availability _now_

Tivoli IT Service Management Technology & Products
– Leverage Current Technology and Products

IBM IT Service Management

Best Practices

- IT Process Management
- IT Service Management Platform
- IT Operational Management
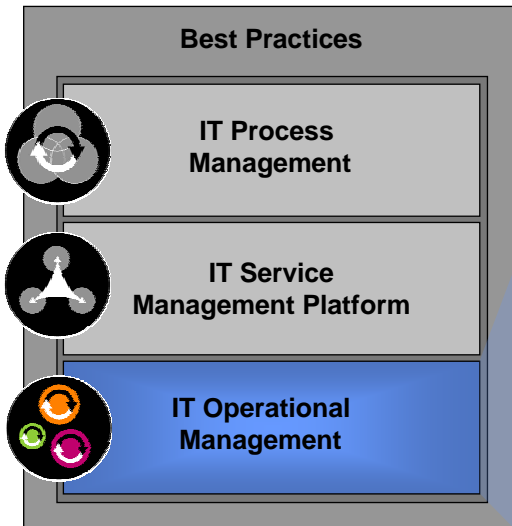
Automation

- Tivoli Business Systems Manager
- Tivoli Enterprise Console
- Tivoli Monitoring
- Tivoli NetView
- Tivoli OMEGAMON XE
- Tivoli Systems Automation
- Tivoli Workload Scheduler
- Tivoli License Management

Security

- Tivoli Access Manager
- Tivoli Identity Manager
- Tivoli Federated Identity Manager

Storage

- Tivoli Storage Manager
- Tivoli Continuous Data Protection
- Total Storage Productivity Center

Leverage Best Practices and Implementation Support from IBM

IBM IT Service Management

Best Practices

- IT Process Management
- IT Service Management Platform
- IT Operational Management

Open Process Automation Library (OPAL)

IBM Global Services
- Innovation Workshops
- Infrastructure Services Readiness Engagement
- IT Service Management Design
- Implementation Services

Ecosystem of System Integrators and Business Partners
- Vision Creation Workshops
- Readiness Assessments
- ITIL Process Design
- Consulting and outsourcing services
- Implementation and deployment services

IBM Tivoli Unified Process
- IBM Process Reference Model for IT incorporates ITIL, COBIT, and IBM best practice processes in a complete, cohesive model
- Tools Mentor - make ITIL actionable!

What Our Customers Are Saying…

" *The IBM approach to IT Service Management is taking Enterprise Systems Management at Ford to a new level. Optimization of both the IT infrastructure and IT processes will help to make ITIL best practices a reality and Ford a more flexible, dynamic organization.*"

Ford

- George Surdu, Director Information Technology Infrastructure, Ford Motor Company

" *With their new IT Service Management strategy, IBM Tivoli is now really focused on the big picture – not only delivering tools, but an integrated combination of tools, sharing their data through a central database and supporting ITIL processes.*"

COMMERZBANK

- Andres Golombek, IT Production, Commerzbank

" *IT Service Management is a never ending story, and while implementing ITIL best practices has value, they are only part of the story. The IBM IT Service Management strategy promises to provide greater value through enhanced process integration and visualization.*"

belgacom

- Yves Vlamijnck - Team manager Network & IT Monitoring, Belgacom

DMdata Improves Problem Determination with Autonomic Computing Technology

The Challenge

Problem determination and resolution across a large scale heterogeneous complex infrastructure must be efficient and fast to maintain a high level of service for customers

The Solution

Autonomic Computing Technology from IBM to import and convert multiple log files in different formats using the *Generic Log Adapter* to a standardized structure enabling cross-domain, chronological correlation with the *Log and Trace Analyzer*

DMdata

Technology Benefits:

- z/OS and TBSM log conversion to industry standard WSDM Event Format (WEF), for a consistent view across multiple components

- Use of the Log Analyzer for a consistent log view and time-based correlation of log data across the infrastructure

On demand Business Benefits

- Improved availability and resilience for DMdata's customers

- Improved problem determination process

'It is not just about the fact that use of Common Base Events and the Log Analyzer reduces the time required for causal analysis of problems by at least 50% - but that it removes the need for Swat Teams searching across multiple logs for hours. Problem Determination is more or less impossible for some outages – this approach makes it possible!' – *Kurt Kristiansen, General Manager, DMdata*

ITSM Maximizes The Value of IBM Mainframes for Your On Demand Business

- ▶ **IT Service Management: The future of systems management**

- ▶ **No better foundation for ITSM than the mainframe and System z**

- ▶ **In an industry bombarded by constant change, mainframe remains a dependable platform**

- ▶ **Many reasons behind mainframe's enduring success:**
  - Low cost of ownership
  - High availability …reliability … scalability … and security
  - The benchmark in Autonomic Computing capability

- ▶ **We're committed to bringing mainframe solutions that:**
  - Expand mainframe capabilities while enhancing its proven strengths
  - Reduce the costs associated with operations and systems management

Most Extensive Portfolio for Mainframe Management

BUSINESS SERVICE MANAGEMENT

- IBM Tivoli Business Systems Manager
- IBM Tivoli Service Level Advisor

INFRASTRUCTURE MANAGEMENT

- IBM Tivoli Information Management for z/OS
- IBM Tivoli Performance Modeler for z/OS
- IBM Tivoli Decision Support for z/OS
- IBM Tivoli Decision Support Accounting Workstation

AVAILABILITY PERFORMANCE MANAGEMENT

- IBM Tivoli OMEGAMON XE on z/OS
- IBM Tivoli OMEGAMON XE for CICS on z/OS
- IBM Tivoli OMEGAMON XE for IMS on z/OS
- IBM Tivoli OMEGAMON XE for DB2 on z/OS
- IBM Tivoli OMEGAMON XE for Databases
- IBM Tivoli OMEGAMON XE for Mainframe Networks
- IBM Tivoli OMEGAMON XE for Storage on z/OS
- IBM Tivoli OMEGAMON XE for USS
- IBM Tivoli OMEGAMON XE for Linux on zSeries
- IBM Tivoli OMEGAMON for z/VM
- IBM Tivoli Monitoring for Web Infrastructure for z/OS
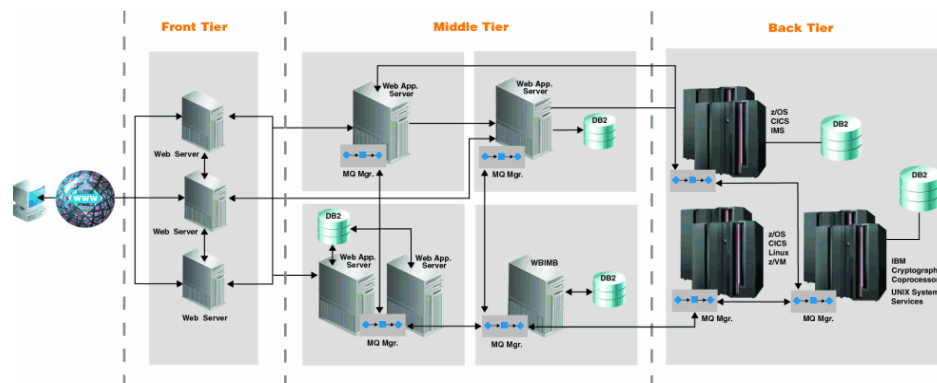
COMPOSITE APPLICATION MANAGEMENT

- IBM Tivoli Composite Application Manager for SOA on z/OS
- IBM Tivoli OMEGAMON XE for WebSphere Application Server on z/OS
- IBM WebSphere Studio Application Manager
- IBM Tivoli Monitoring for Transaction Performance for z/OS

OPERATIONS MANAGEMENT

- IBM Tivoli NetView for z/OS
- IBM Tivoli System Automation for z/OS
- IBM NetView Access Services for MVS
- IBM Tivoli AF/Operator
- IBM Tivoli AF/Remote

Continued Commitment to Our Mainframe Customers

SECURITY MANAGEMENT

- IBM Tivoli Access Manager for Business Integration
- IBM Tivoli Access Manager for e-Business
- IBM Tivoli Security Administrator for RACF
- Vanguard Security Center
- Vanguard Administrator
- Vanguard Analyzer
- Vanguard Enforcer
- Vanguard Advisor

OPTIMIZATION PRODUCTION CONTROL

- IBM Tivoli Workload Scheduler for Host Edition
- IBM Tivoli Output Manager for z/OS
- IBM Tivoli Automated Tape Allocation Manager for z/OS
- IBM Tivoli Allocation Optimizer for z/OS
- Diversified Software Systems (DSSI)
- Job/SCAN
- Docu/TEXT

COMPLIANCE

- IBM Tivoli License Compliance Manager for z/OS
- IBM Tivoli Contract Compliance Manager

STORAGE MANAGEMENT

- IBM Tivoli Storage Manager for z/OS
- IBM Tivoli Storage Optimizer for z/OS

Simplify z/OS Operations with Tivoli Enterprise Portal
-- New management console integrates tools, data and processes

Business Services   Distributed Resources   J2EE Transactions   Mainframe Resources
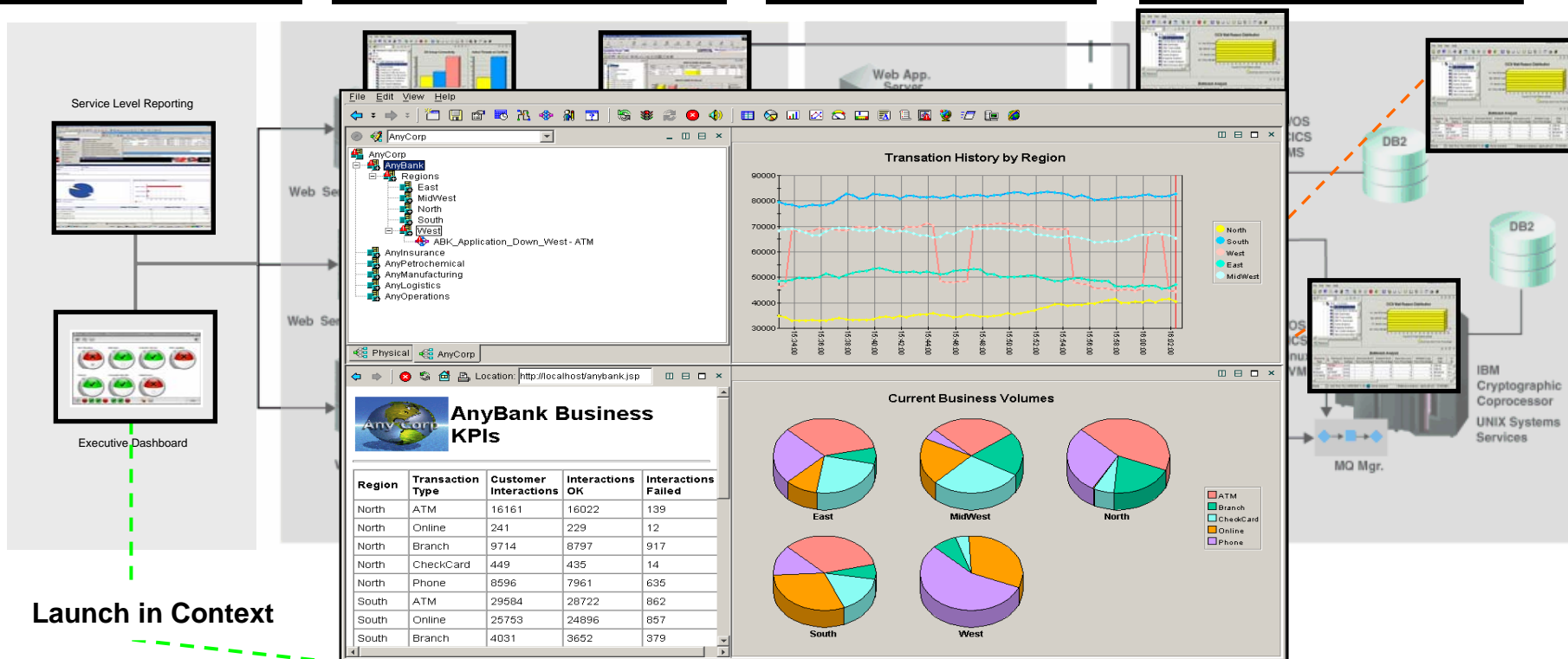
Launch in Context

Everything at your Fingertips

End-to-End Management

Advanced Monitoring and Managing of Mainframe Performance

Enhanced!
IBM Tivoli OMEGAMON XE for IBM System z9 and eServer zSeries

- Proactively manage your mainframe infrastructure

- Quickly identify and solve system delays by analyzing bottlenecks and building a detailed picture of resource usage

- Integrates with Tivoli Enterprise Portal
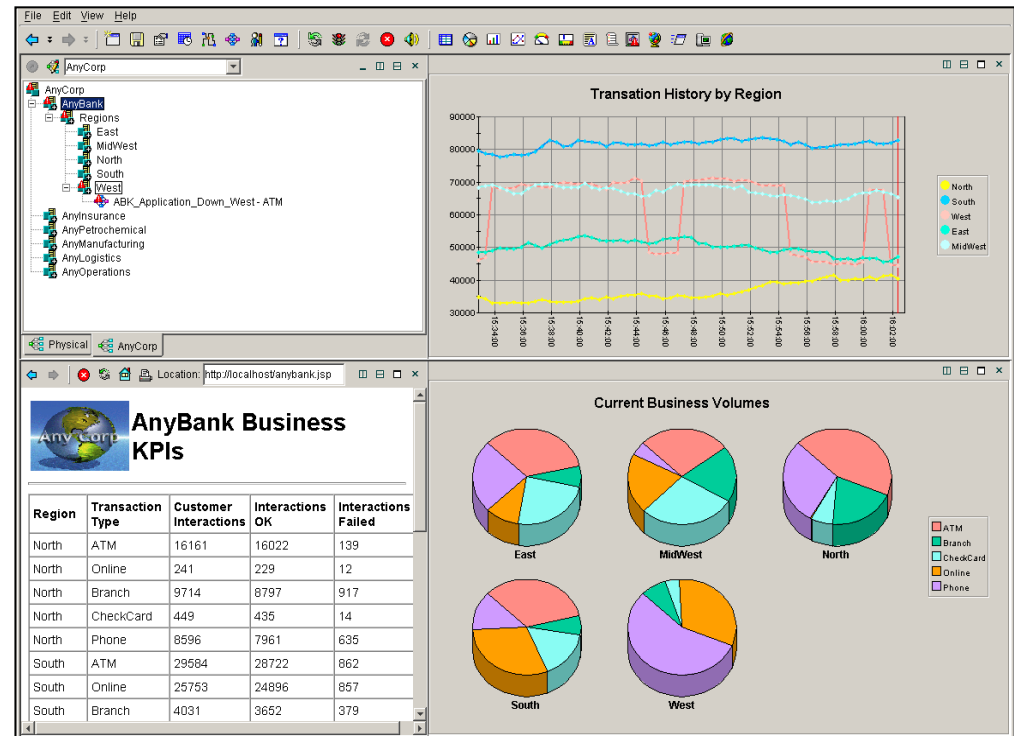
Exceptional Availability Management of Mainframe Networks

Enhanced!

IBM Tivoli NetView for z/OS

- Improve network and system availability by managing both mainframe TCP/IP and SNA networks

- Manage larger networks, more resources and more systems with fewer resources and personnel

- Integrates with Tivoli solutions to provide comprehensive, seamless availability management across your IT environment
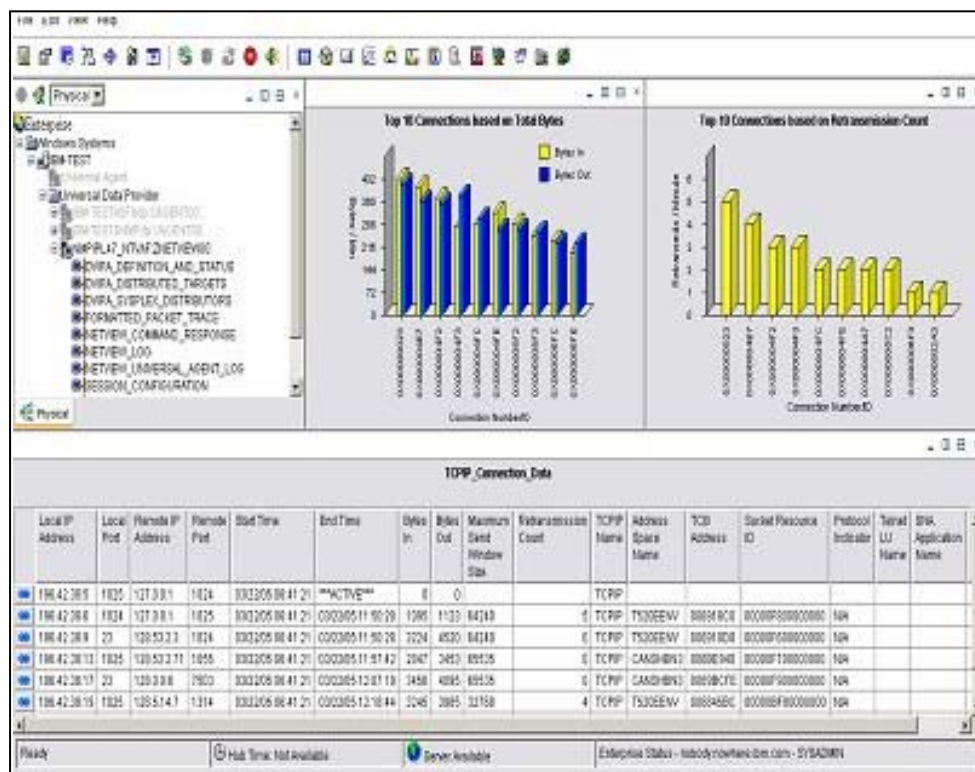
Automated Management for z/OS and Multiplatform Environments

Enhanced!

IBM Tivoli System Automation z/OS & Multiplatform

- High availability for critical business applications through policy-based self-healing

- Automate the process of bringing up and down composite applications and supporting resources

- Pre-packaged best practices for SAP, Siebel, WebSphere and more
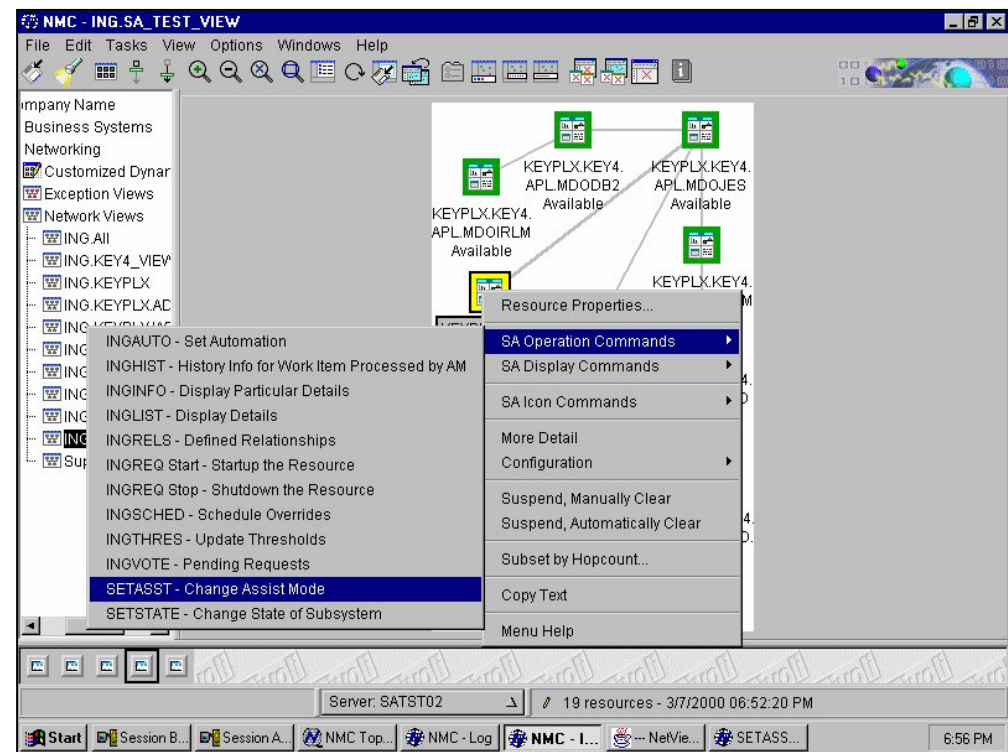
System Automation for z/OS in the TEP (4Q06)

The ITCAM Solution Portfolio

Managing high-performance composite applications.

Analyze and Measure Transactions & Services

Manage Application
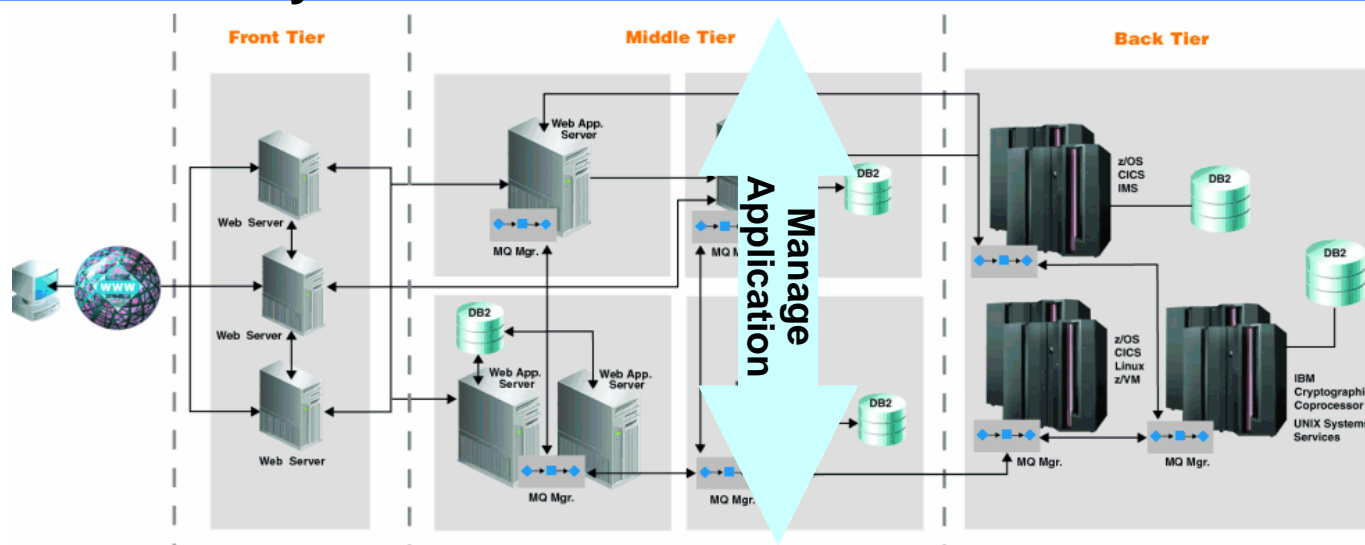
Monitor Infrastructure

ITCAM for RTT	ITCAM for WebSphere	ITCAM for SOA	ITM, OMEGAMON XE
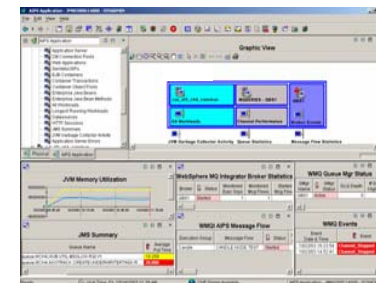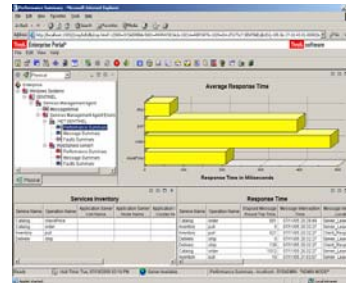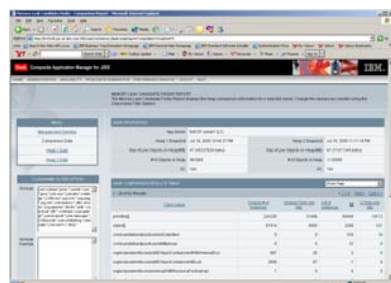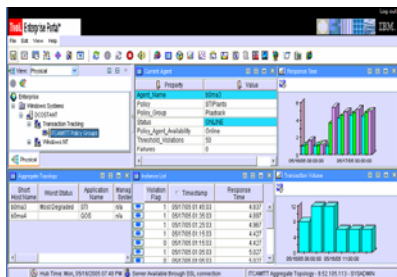
Expanded Software Asset Management Solutions

Help Control Costs, Meet Compliance Challenges

IBM Tivoli License Compliance Manager for z/OS

(formerly Isogon SoftAudit)

- Auto-discovery, centralized, accurate software inventory and usage information

IBM Tivoli Contract Compliance Manager (formerly Isogon Vista)

- Manage contractual and financial details of IT software and hardware agreements


Manage software inventory, usage and licenses
- Complete, accurate reporting on software assets and usage
- Manage software costs by learning which software justifies more investment …or less
- Demonstrate adherence to stringent accounting standards
- Better planning, budgeting and control of enterprise software costs based on business needs

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The only vendor with solutions spanning mainframe and distributed platforms

Tougher Security Solutions Strengthen Protection from Intrusion and Help Manage Compliance Requirements

- **Reseller Agreement with Vanguard Beefs Up Security Management Solution**
  - ▶ Security administration, integrity auditing, and intrusion detection and management
  - ▶ Helps address the most stringent security rules and regulations
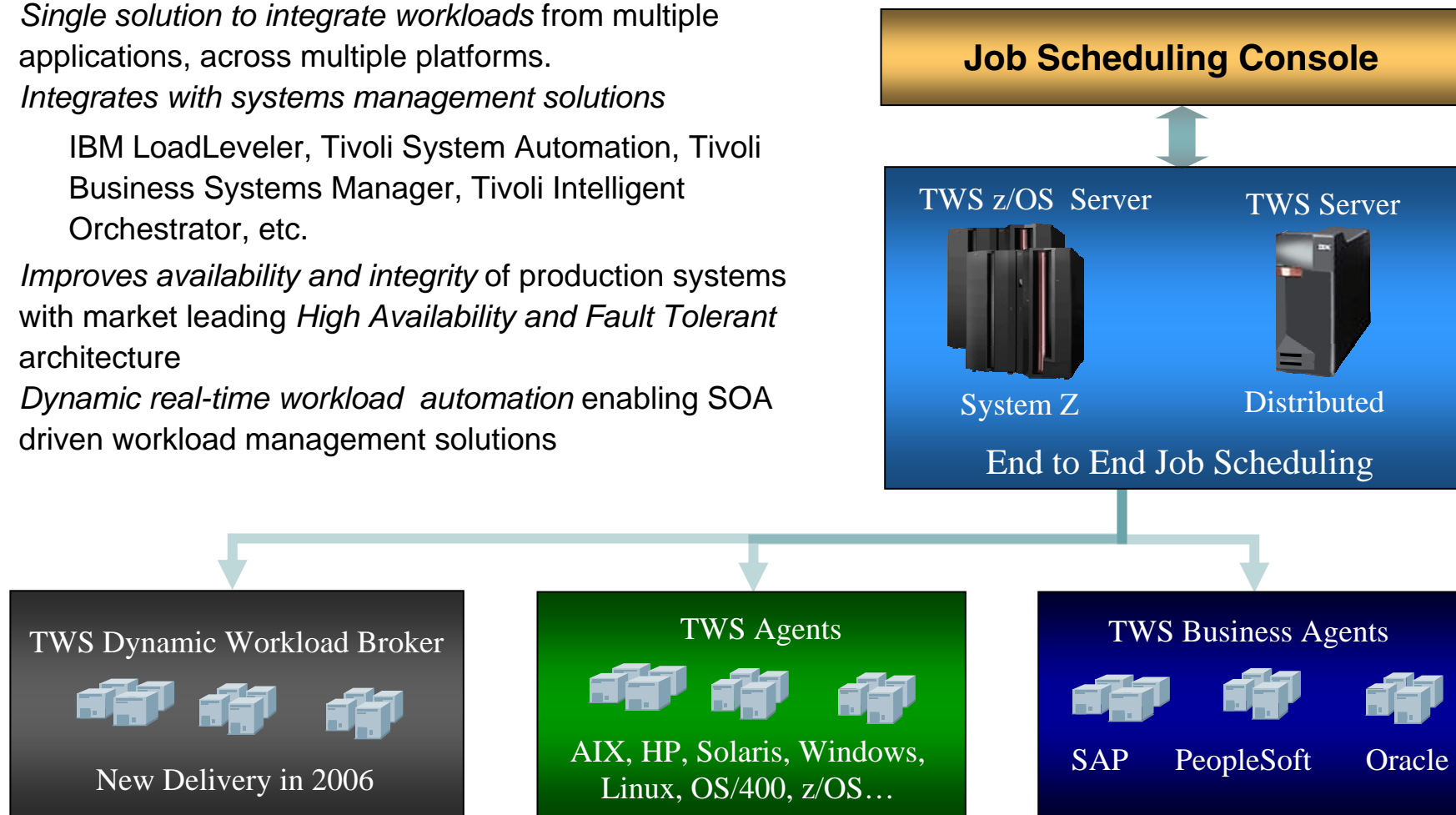 - ▶ Reduce complexities of RACF security administration and enforce best practices
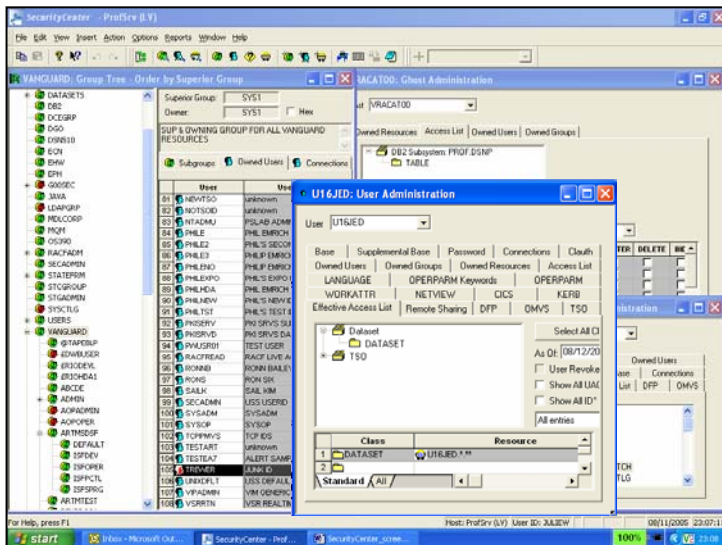
- **IBM and Vanguard Security Solutions**
  - ▶ **Vanguard Security Center** offers an easy-to-use graphical user interface for RACF and DB2 security administration on z/OS
  - ▶ **Vanguard Administrator** provides advanced security server management and analysis with automation and power utilities
  - ▶ **Vanguard Analyzer** assists with security system snapshots or full-scale System z9 security audits
  - ▶ **Vanguard Enforcer** manages and enforces security policy on z/OS and RACF
  - ▶ **Vanguard Advisor** provides event detection, analysis and reporting capabilities for z/OS and RACF
  - ▶ **IBM Tivoli Security Administrator for RACF** is designed to provide a low-cost RACF management solution
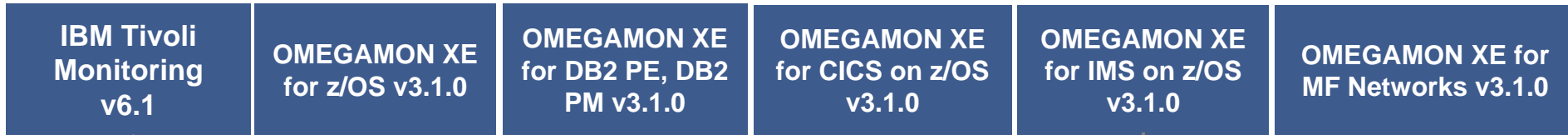
Centralized End-to-End Job Scheduling Management
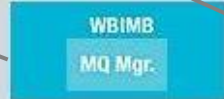
IBM Tivoli Workload Scheduler

- *Single solution to integrate workloads* from multiple applications, across multiple platforms.
- *Integrates with systems management solutions*

  IBM LoadLeveler, Tivoli System Automation, Tivoli Business Systems Manager, Tivoli Intelligent Orchestrator, etc.

- *Improves availability and integrity* of production systems with market leading *High Availability and Fault Tolerant* architecture
- *Dynamic real-time workload automation* enabling SOA driven workload management solutions

Job Scheduling Console

TWS z/OS Server

TWS Server

System Z

Distributed

End to End Job Scheduling

TWS Dynamic Workload Broker

New Delivery in 2006

TWS Agents

AIX, HP, Solaris, Windows, Linux, OS/400, z/OS…

TWS Business Agents

SAP PeopleSoft Oracle

Making End-to-End Management a Reality
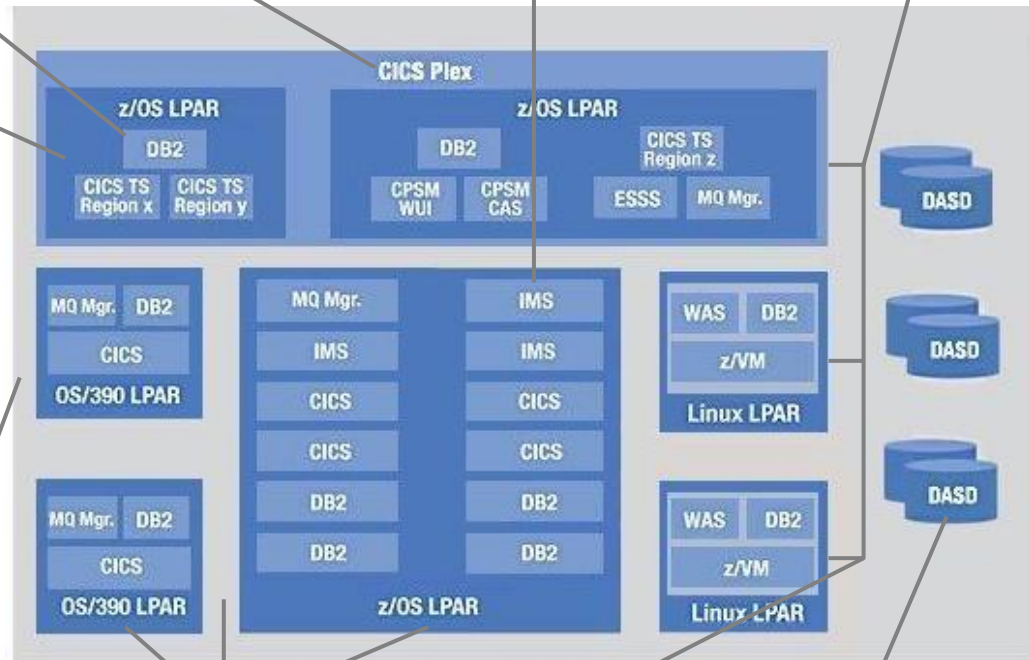
IBM Tivoli Unified Process (ITUP) Knowledgebase

Four Points to Take Away

- **End-to-End Management Solutions**

  Providing System Z and distributed management to find and fix problems quickly

- **IBM Mainframe Leadership**

  Continued investment in hardware and software to integrate and interoperate with new platforms and applications

- **Delivering on ITIL Best Practices with ITSM**

  Improving service delivery with solutions that manage IT processes, based on ITIL best practices

- **Cost Effective IT Service Management**

  Effective and efficient delivery of IT services in support of business goals

Technology

Information

IT Service Management

People

Process