

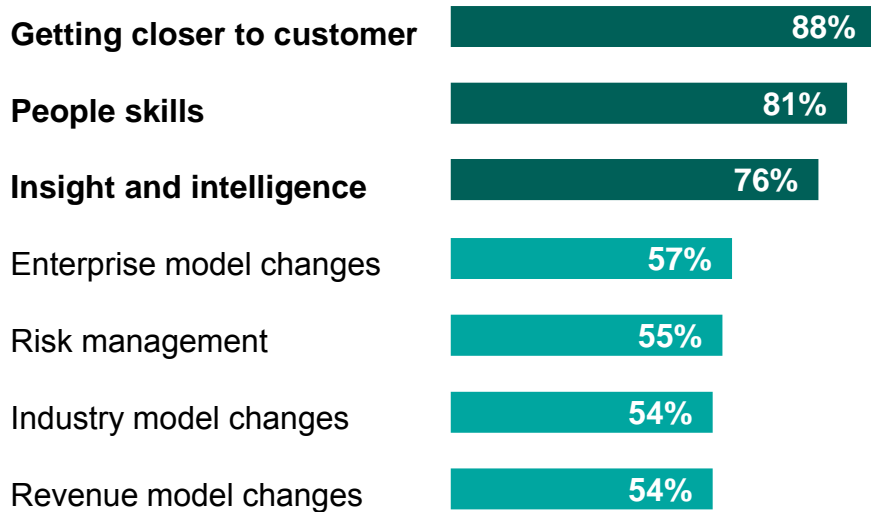


Managing infrastructure complexity and improving Business Service reliability

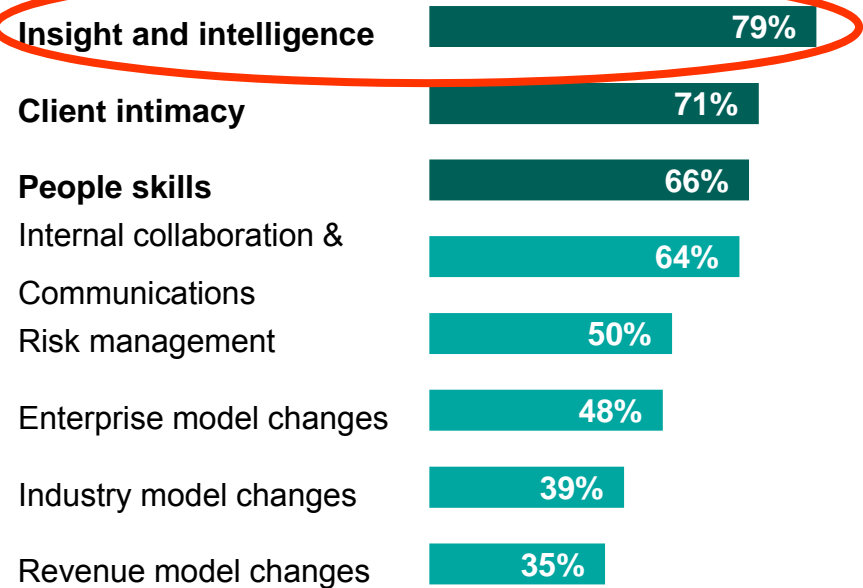
Peter Edwards
Executive Consultant, Service Management Tiger Team, Asia Pacific

The 2011 CIO Study showed that CIOs have a major focus on Insight and Intelligence

CEO focus over the next 5 years



CIO focus over the next 5 years



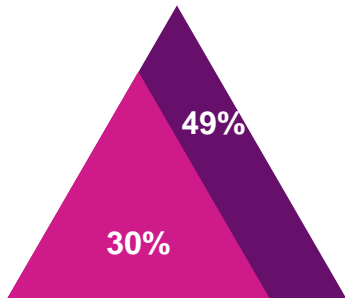
“Business Intelligence will provide information to the company that no one in the industry has ever seen, and will open up opportunities that were not previously considered.”

Utilities CIO, USA

Source: 2010 CEO Study Q13: “Which of the following dimensions will you focus on more to realize your strategy in the new economic environment over the next 5 years?” (n=1,523); 2011 CIO Study, Q13: “Where will you focus IT to help your organization’s strategy over the next 3 to 5 years?” (n=3,018)

Leading CIOs are looking at business services “end-to-end” and using that information to improve the quality and efficiency of the IT services

(Leverage) Share more information with internal clients

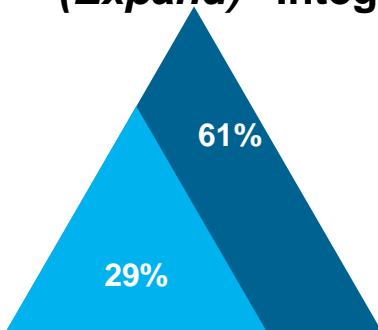


63% more

“We need to cope with change by re-engaging with our internal customers in a more intimate way - the solution is part structural and part cultural.”

Government CIO, Australia

(Expand) Integration of business and technology for innovation is a key focus



110% more

“One focus of IT is to build foundational competencies: capable individuals able to communicate effectively with business acumen.”

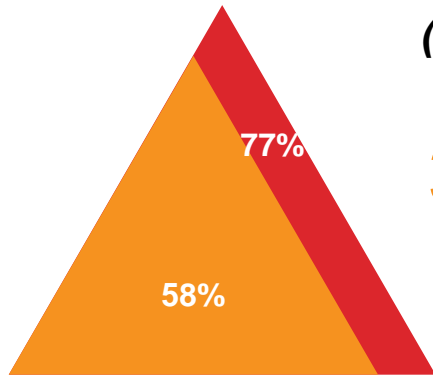
Industrial Products CIO, United States

▲ Underperformer ▲ Outperformer

Source: 2011 CIO Study, Demographic Question C: “To what extent has your organization integrated business and technology to innovate?”, Expand mandate (n=481); CIO perspective on performance position in the industry (Demographic Question H)

CIOs are driving real-time data collection and use of visual dashboards to improve decision making

(Transform) Drive better real time decisions

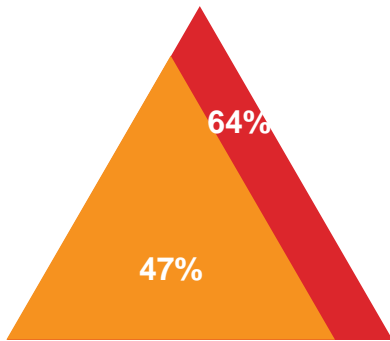


33% more

“To have real-time data feedback for the business improves visibility for better business management.”

Kenny Tsai, CIO, Inventec Appliances Corp., Taiwan

(Transform) Use of visual dashboards to support informed decision-making



36% more

“By changing IT to IT&P – Information, Technology and Process, we will drive better analytics, and drive technology transparency and increase business process expertise - all driving better business value.”

Chemicals and Petroleum CIO, United States

▲ Underperformer ▲ Outperformer

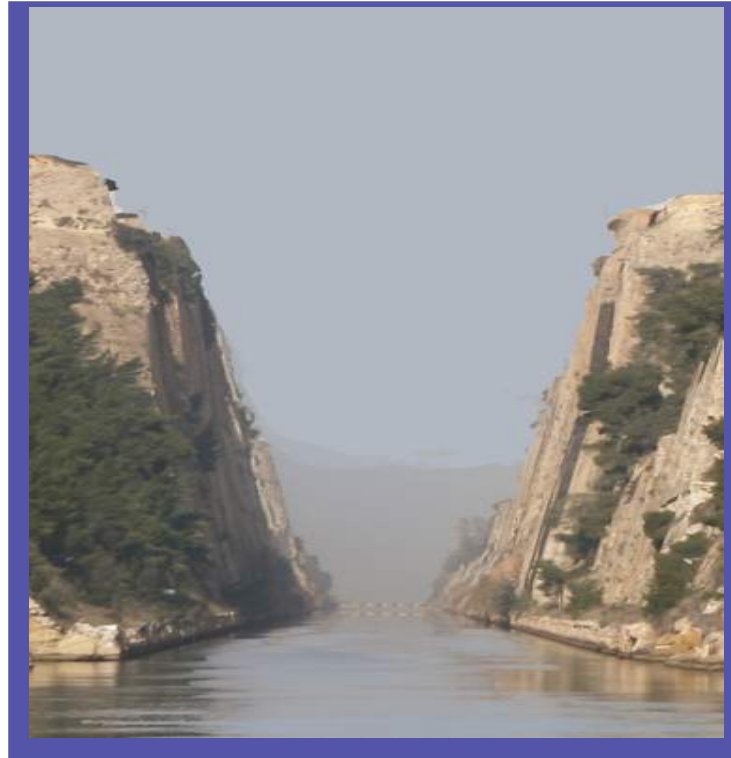
Source: 2011 CIO Study, Q10: “To enable and improve your organization’s operations, how will you help drive the following initiatives?”, Transform mandate (n≤229); CIO perspective on performance position in the industry (Demographic Question H)

However CIO's are Inhibited by the Gap between Business & IT



Business User

Business people know which business processes are critical, but aren't aware of the IT impact on business performance



"...Benchmarking success will move from using IT-centric metrics to business-oriented metrics derived directly from the correlation of BSM data with business process data."

IDC; Business Service Management Study; Oct. 2007

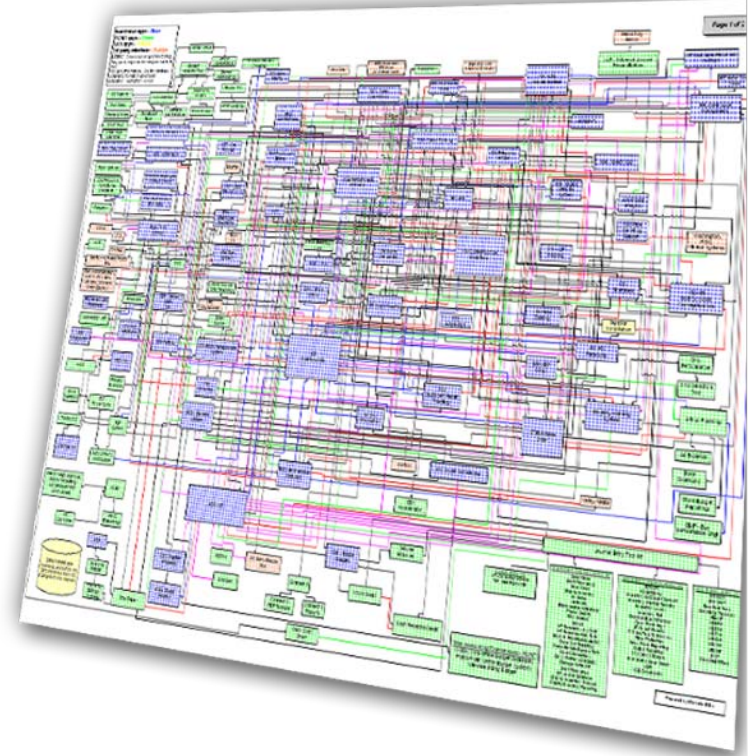


IT Operations

IT people often lack the visibility into business processes and activity to effectively prioritize decisions that support business objectives

The disconnect between business and IT is often the result of growing complexity in the IT environment

- **Lack of Architectures & Standardization:** Disparate technologies across business units, multiple service infrastructures
- **Rapid, Constant Change:** Change may result from changes in business requirements, mergers & acquisitions technology advances, etc
- **Lack of Service Context:** Silos of people, process, technology, information make it difficult to take a service centric view
- The result is rising costs due to process inefficiencies and complexity of supporting the IT environment



An Integrated Service Management architecture will provide the capabilities that enable a holistic view of the environment

Business Service Dashboards

Event Correlation, De-Duplication & Enrichment

Service Desk

Asset & Configuration Management

Event Detection

Asset & Configuration Discovery

Monitors & Probes



Applications



Servers



Mainframe



Storage



Network



Voice



Wireless



Security



Energy



Buildings

These capabilities support an Integrated Service Management process framework (e.g. ITIL, ISO/IEC 20000, Cobit, etc.)

Business Service Dashboards

Availability Reporting

Performance Reporting

Svc. Level Reporting

Event Correlation, De-Duplication & Enrichment

Monitoring & Event Management

Service Desk

Incident Mgmt

Problem Mgmt

Service Catalog

Request Fulfillment

Asset & Configuration Management

Asset Mgmt

Config. Mgmt

Change Mgmt

Event Detection

Monitoring & Event Management

Asset & Configuration Discovery

Asset Mgmt

Configuration Mgmt

Monitors & Probes

Monitoring & Event Management



Applications



Servers



Mainframe



Storage



Network



Voice



Wireless



Security



Energy



Buildings

IBM Tivoli has an integrated suite of products that deliver these capabilities, depending upon your requirements

Business Service Dashboards

TBSM

Event Correlation, De-Duplication & Enrichment

Netcool Omnibus & Impact

Service Desk

TSRM

Asset & Configuration Management

CCMDB

TAMIT

Event Detection

ITM
TEM

ITM
TEPS

Omnibus
Collection

Z Event
Pump

Asset & Configuration Discovery

TADDM

TAD4D

TAD4Z

Monitors & Probes

Omega
mon

ITM OS

ITM DB

ITM VM

ITNM

ITCAM

ITM
Energy

Other
IBM

Other 3rd
Party



Applications



Servers



Mainframe



Storage



Network



Voice



Wireless



Security



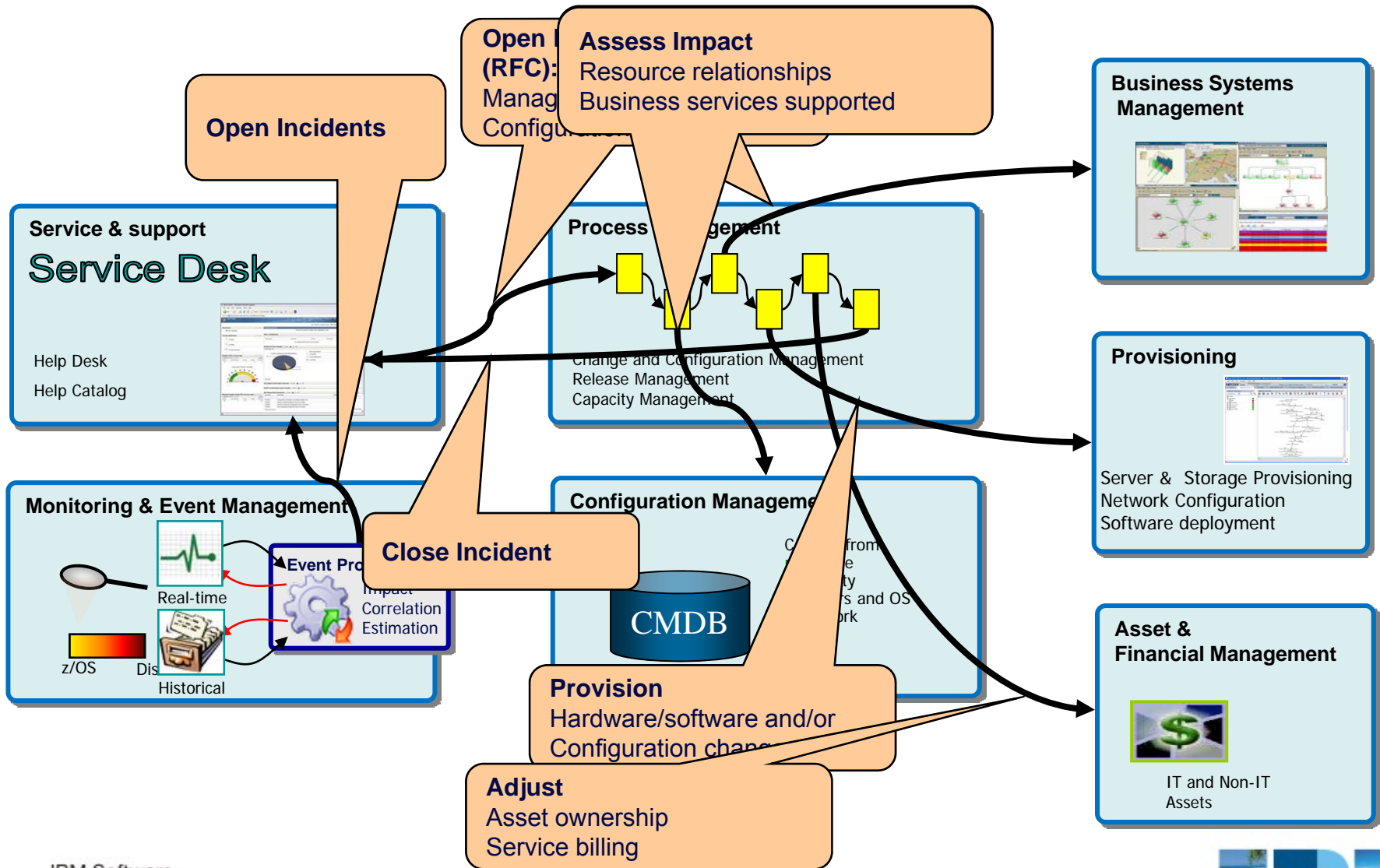
Energy



Buildings

The Value of Architected Integration

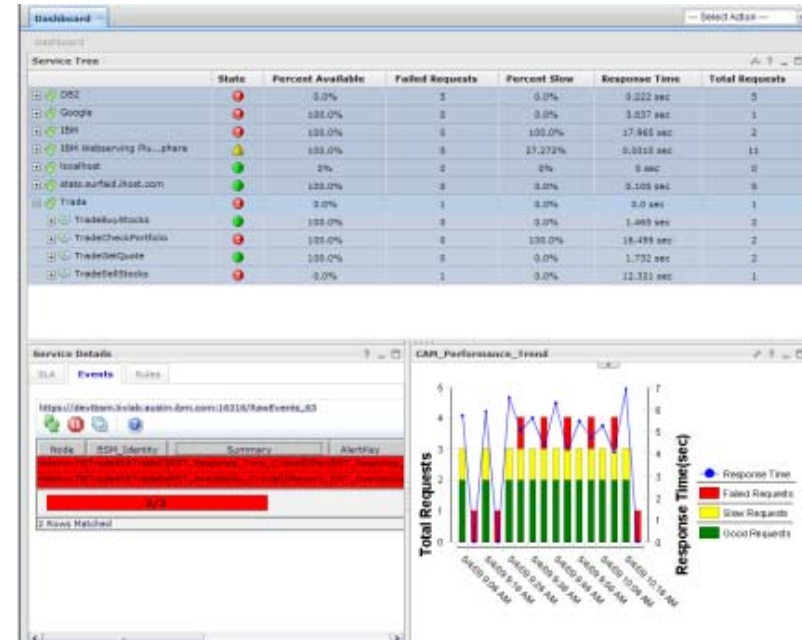
Automated processes that improve Business Service reliability



Monitoring Framework

Identifying events as they occur, rather than waiting for user feedback

- **Identify reactive, proactive & predictive events for all important business services.**
 - Will normally include monitors from multiple vendors.
 - Collect metrics across physical and virtual infrastructure & applications
- **See what your users are experiencing and identify problems before they affect users and have an impact on SLAs:**
 - Implement end-to-end monitoring
- **50% of problems in most companies are found through customer complaints to help desk**



Event Management

Consolidating events from multiple sources to produce useful business context information

• Event Collection

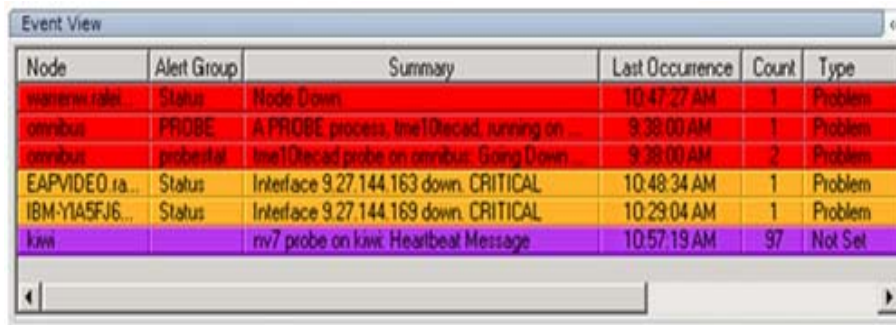
- Collect and consolidate event information from the all monitoring tools.
- A “Single Pane of Glass” to present comprehensive real-time status

• Consolidate events for correlation

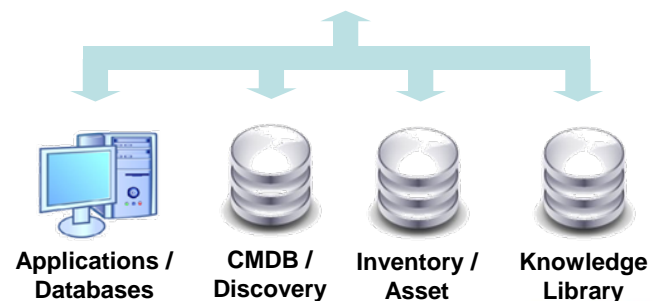
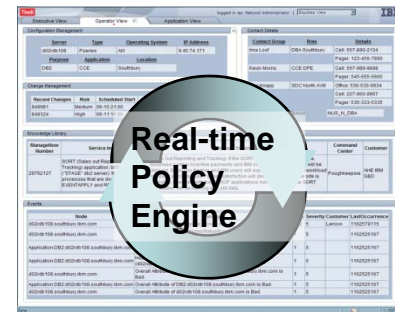
- Reduce “event noise” through de-duplication and correlation
- Use rules and topology based root cause analysis (RCA) to resolve incidents faster

• Event Enrichment

- Enrich events with information about the service, redundancy, priority, etc. to obtain events with a business context
- Enable automated incident ticket creation in the Service Desk



Node	Alert Group	Summary	Last Occurrence	Count	Type
warmen1.rakel	Status	Node Down	10:47:27 AM	1	Problem
omnibus	PROBE	A PROBE process, time1Decad, running on	9:38:00 AM	1	Problem
omnibus	proberlat	time1Decad probe on omnibus. Going Down	9:38:00 AM	2	Problem
EAPVIDEO ra...	Status	Interface 9.27.144.163 down. CRITICAL	10:48:34 AM	1	Problem
IBM-YIA5FJ6...	Status	Interface 9.27.144.163 down. CRITICAL	10:29:04 AM	1	Problem
kawi		nv7 probe on kawi: Heartbeat Message	10:57:19 AM	97	Not Set



Asset and Configuration Discovery

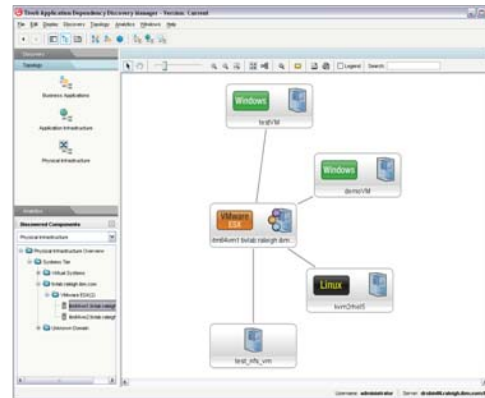
Managing Agile Environments requires an accurate and up-to date view of the environment

- **Universal Discovery Engine**

- Discover configuration items and their actual state. Provide Topology Views and relationships between items.

- **Configuration Auditing**

- Show changes to configuration items over time and report on the history of configuration changes over time

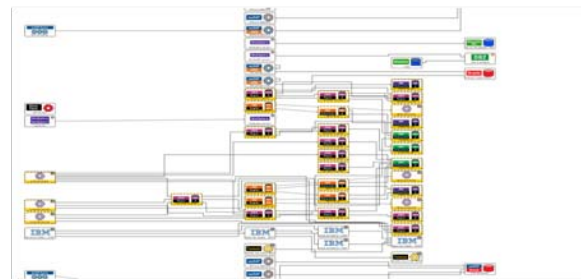


- **Application Mapping with Dependencies**

- Discover interdependencies between applications, and infrastructure and generate service models

- **Compliance**

- Compare discovered CIs to a "reference configuration" and determine variations from a policy



A screenshot of the IBM Configuration Manager interface showing a detailed configuration audit report. The report is presented as a table with multiple columns, including 'Configuration Item', 'Configuration Item ID', 'Configuration Item Name', 'Configuration Item Type', 'Configuration Item State', and 'Configuration Item Details'. The table contains several rows of data, with some rows highlighted in yellow. The interface includes a sidebar with 'Discovery Components' and a top menu bar with 'File', 'Edit', 'View', 'Tools', 'Help'.

Asset & Configuration Management

Providing the “single source of truth” about the IT environment

- **Configuration Item (CI) Management**

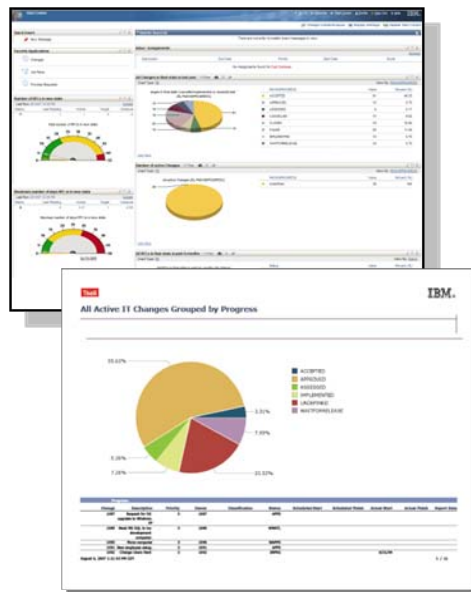
- Manage CI data and the relationships with other CI’s.

- **Asset Management**

- Manage financial information for assets, through all the stages of their lifecycle
- Software License Management

- **Asset to CI Reconciliation**

- Link CIs to Assets based on key fields
- Identify discrepancies between Assets and CIs
- Compare Asset and CI attributes / specifications



- **Change, Release & Configuration Processes**

- Manage approval of Changes and Releases and updates to Configuration through workflow

- **Change Impact Analysis**

- Conduct Technical and Business Impact Analysis

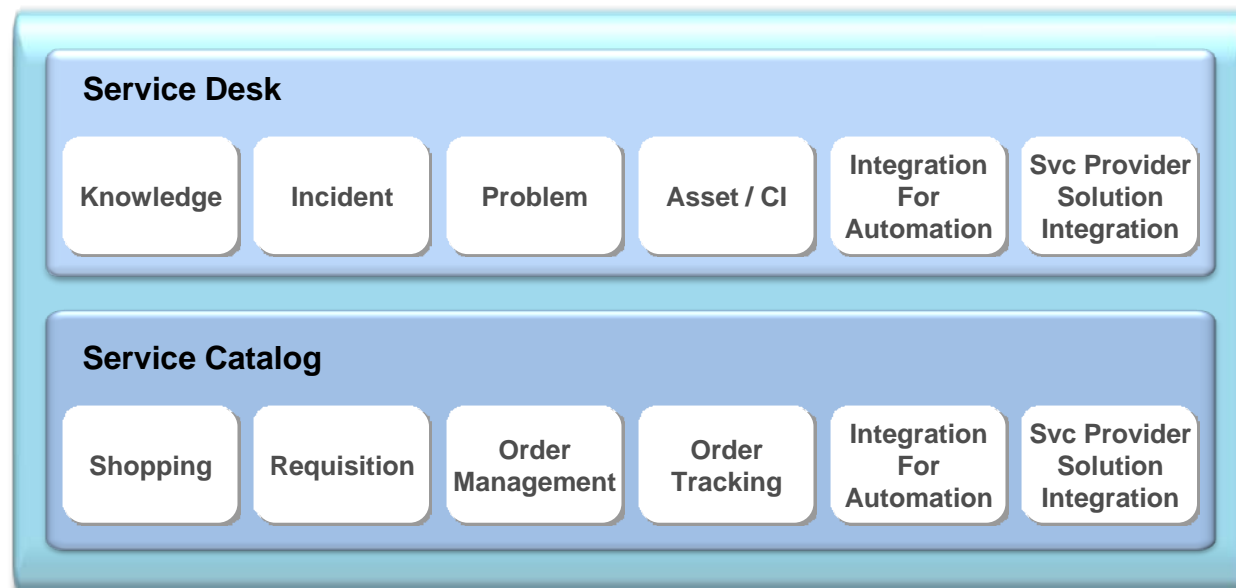
- **Change Implementation Schedules**

- Use calendaring to manage change windows, including human and resource scheduling

Service Desk

Managing the interactions with IT's customers

- **Combined service desk & service catalog for management of ITIL Service Operations processes**
- **Service Level Management**
 - Compare actual performance with SLAs and manage escalations
- **Workflow based processes**
- **Dashboards and reports for analysis**
- **Knowledge Management**
 - Searchable solutions database that enables agents to resolve issues faster, improving first call resolution rates.
- **Self Service**
 - Web-based portal that enables users to access the service catalog, create service requests, log incidents, find ticket status, search for solutions, and view a bulletin board.



Business Service Management (BSM)

Giving IT and Business real-time visibility and actionable insight

BSM provides business & operational dashboards, service modeling, impact & root cause analysis, and tracking of key performance indicator (KPIs) & SLAs.

- Real-time Business and IT information consolidated into customizable dashboards
- Allows Business and IT leaders to monitor SLAs and KPIs and receive alerts



Consolidated Operations Management Single-Pane-of-Glass

Service Tree

The screenshot displays the Tivoli Service Manager interface with the following components:

- Service Tree:** A hierarchical tree view of services.

Service	State	Time	Events
Customer Service	Green	Green	Green
Mobile Integration	Green	Green	Green
Online Ordering	Green	Green	Green
Phone Ordering	Green	Green	Green
Travel Insurance	Green	Green	Green
Insurance Integration ...ation	Yellow	Green	Yellow
Legacy Insurance I...ation	Green	Green	Green
rtp-WAS-Cell	Green	Green	Green
WAS-RTP-Server1	Green	Green	Green
RTP DB2 Server	Green	Green	Green
was-rtp-host...l.com	Green	Green	Green
- Urgent Services:** A table listing services with red status indicators.

Service	State	Last Changed
CICS-TORS	Red	5/2/08 10:20 AM
RefreshALot	Red	5/2/08 10:20 AM
Broker Wealth Management	Red	5/2/08 10:20 AM
Production CICS Regions	Red	5/2/08 10:20 AM
IA - Image Archive	Red	5/2/08 10:20 AM
Production Mainframe Systems	Red	5/2/08 10:20 AM
Mainframe Operating	Red	5/2/08 10:20 AM
- Service Map:** A geographical map of the United States with service locations marked by colored pins.
- Service View:** A diagram showing the relationships between services, including a 'Down 3 Up 1' status indicator.
- Charts & Graphs:** A bar chart titled 'Memory Allocation' for 'Primary:FLORP.NT'.

Category	Value
Available...	~100,000
Cache_kBytes	~1,000,000
Commit_L...	~5,000,000
Committe...	~2,500,000

Service Maps

Urgent Services

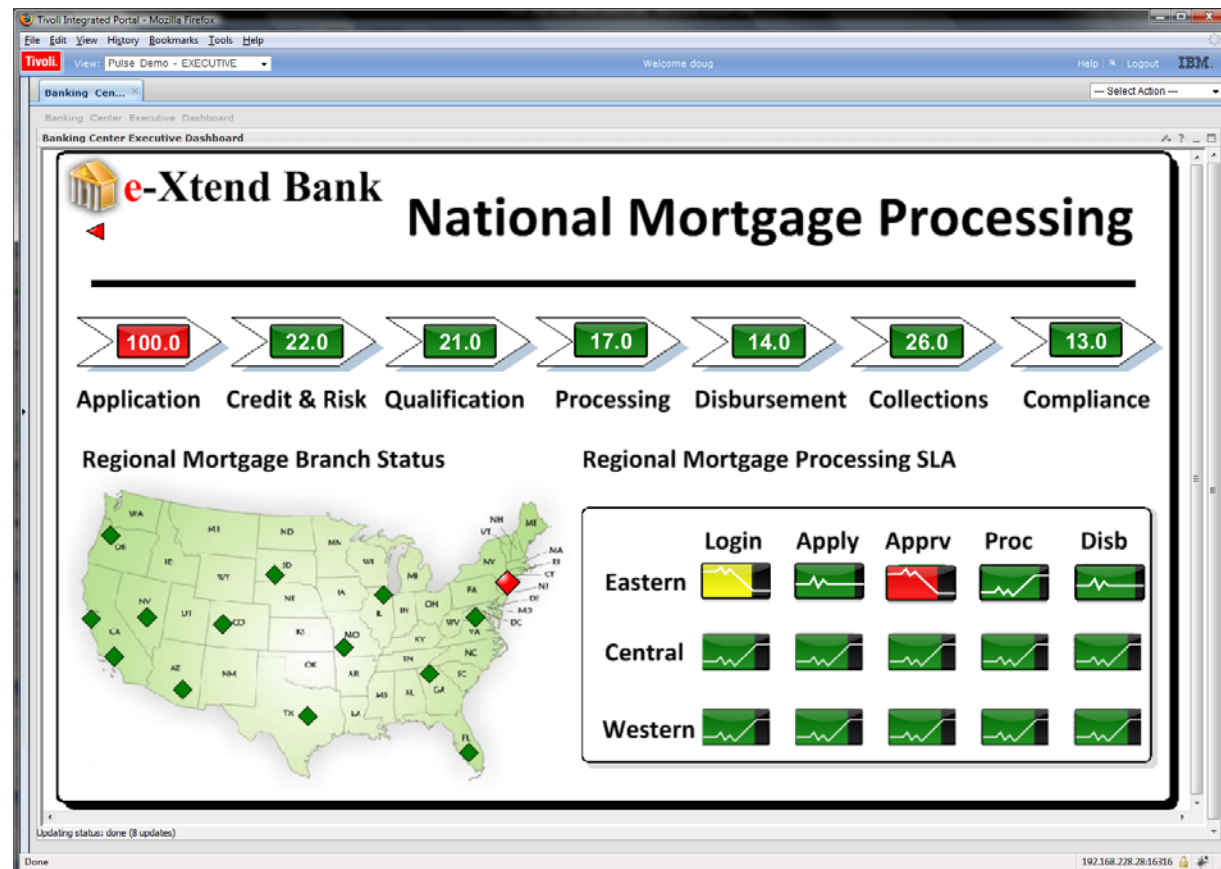
Service Model

Charts & Graphs



BSM bridges the gap between Business Services and the IT components that support it

- Link Business Services to supporting IT components
 - Monitoring is aligned with Business Services
 - Drill-down from a Business Service to the IT components
- Helps to prioritize service restoration activities
- Results in decreased Mean Time To Repair



Integrated Service Management bridges the gap between Business & IT



Business Analyst

- Visualize the state of Business Services on real-time dashboards
- View performance of Business and IT activities against SLAs



IT Operations

- Manage events before they impact users
- Dashboards that allow drill down from business services to IT components
- Prioritize work in relation to the Business. Initiate targeted action, with focus on the most important problems

An Integrated Service Management framework improves efficiency through automation, and improves MTTR

Monitoring & Event Management

- **Improve Incident resolution, mean-time-to-recovery (MTTR) and Availability** by consolidating monitoring of all platforms to a “single role-based pane of glass”
- **Improve incident avoidance** with dynamic thresholds to spot abnormal behavior and report on future capacity bottlenecks
- **Automate incident ticket generation** based on business based rules

Business Service Management

- **Identify the impact of IT incidents on business services**, and prioritize them relative to business impact.
- **Visualize the dependencies between business services and supporting IT components** to determine root cause of incidents.
- Improve management and reporting against **Service Level Agreements**

There is also a clear business case and ROI for implementation of an Integrated Service Management platform

- IDC report* shows a **54% reduction in MTTR** and time spent investigating/managing incidents – P1 resolution is often reduced from 3-4 hours to 1-2 hours
- Customers can **reduce time for Root Cause Analysis by about 10-20%** through having a view of IT components that are associated with critical applications, and understanding the impact of key resource downtime on the business services.
- With **reduction in time to resolve incidents**, one of our customers was able to service an additional 7757 calls each month. Typical saving range 25-35%

* “A Return on Investment Analysis of IBM Tivoli Netcool”, IDC January 2009

Case Study – An Indian Bank achieves significant cost savings and improves availability

Client needs

- This organization is among the top 5 Nationalized Bank in India. It has 3253 branches and 2216 ATM's across India.
- The bank has Core Banking services across all branches, Internet Banking, Funds Transfer through NEFT and RTGS, Gift and Credit Cards, Bills Desk for utility bills payment, Cash withdrawal at Point of Sale (PoS) machines at Merchant Establishments, and VISA money transfer.
- There is a high reliance on IT based business services, but there was a lack of service management tools and processes:
 - A Service Management framework was required to meet audit requirements
 - The Bank did not have an adequate monitoring framework for:
 - Server utilization / Performance level,
 - Network faults
 - Core banking application, OS, database
 - Storage resources
 - They had challenge with their back-up windows, and storage media management

Solution

- The bank purchased a suite of automation products from IBM Tivoli to facilitate monitoring and management of the environment:
 - ITM, ITCAM, Netcool Omnibus family of products
 - IBM Tivoli Storage Manager and Tivoli Storage Productivity Center to address storage issues
- An ITIL v3 framework was implemented

Case Study – An Indian Bank *(continued)*

Project Scope

- Business service scope covered all core banking applications (approx 7-8 applications)
- Databases: Oracle, DB2, MS SQL
- Servers & OS: AIX, Linux and Windows. Approximately 200 servers
- Approximately 1000 network devices
- Project involved 15 staff from customer, 15 from IBM
- Project live after 5 months with ITM, ITCAM, Omnibus. TSM 3 months later

Benefits

- **Reduction in operations manpower of approx 60-65%** (reduction of approx 35-37 operations staff) The manpower that was required to do the manual IT Infrastructure management was re-deployed to manage the Core Banking Solutions
- **Improvement in Service Availability** (however availability statistics were not available prior to the implementation)
- **Reduction in Media Management and Archival costs by 50%** year on year
- **Satisfied audit requirements** by implementing an ITIL v3 framework

What the Analysts Are Saying About IBM's Management Solutions....

IBM leads in ITOM market share, with a 21% share in 2009. With few exceptions, IBM's ITOM portfolio of products are competitive in the market, and it has particular strengths in event correlation and analysis, network management and mainframe management. IBM's strategy differentiates from other vendors in that it is focused on **bridging business and IT processes using a common software framework with common services**, including process automation and security services.

Gartner: IBM Tivoli IT Operations Management: Vision, Strategy, Strengths and Challenges

IBM is distinctive in the breadth of domains it supports, including systems, virtualized infrastructures, network, database, middleware, storage, and end-stations including PC and mobile devices. And perhaps even more importantly, **IBM allows operations to view these "domains" cohesively both from an applications/service perspective, as well as in context with the business processes and outcomes they impact.**

EMA: IBM's Versatile Approach for Optimizing Business Service & Application Performance in a World of Accelerating Change

Tivoli has put together a comprehensive strategy for providing IT organizations with the same predictive analytics capabilities that delivered proven investment returns on business projects. It is important to note that every level of Tivoli's strategy involves adapting general-purpose business analytics technology to solve IT-specific problems and provide benefits unique to datacenter operations.

Ptak / Noel: IBM Tivoli's Predictive Analytics Strategy for Enterprise IT Operations

MANAGING DISTRIBUTED END POINTS

Why is end-point management important?

If the end points in your environment have problems, everything you do in the data center is wasted – the user experience with end-points is critical to user satisfaction with IT services. Specifically, end-points must be managed for:

- **Security:** end-points are the most common method of introducing malicious code into the IT environment, exposing risks to other users and the corporate infrastructure
- **Compliance:** organizations must demonstrate visibility and control of the infrastructure and related licenses
- **Power Usage:** power usage of PCs and laptops has a significant impact on an organization's energy bill and it's carbon footprint

Management of end-points is one of the most time consuming support activities of most IT departments and can be extremely inefficient if you don't have the right support tools

What and where are the end-points in your organization that require management?

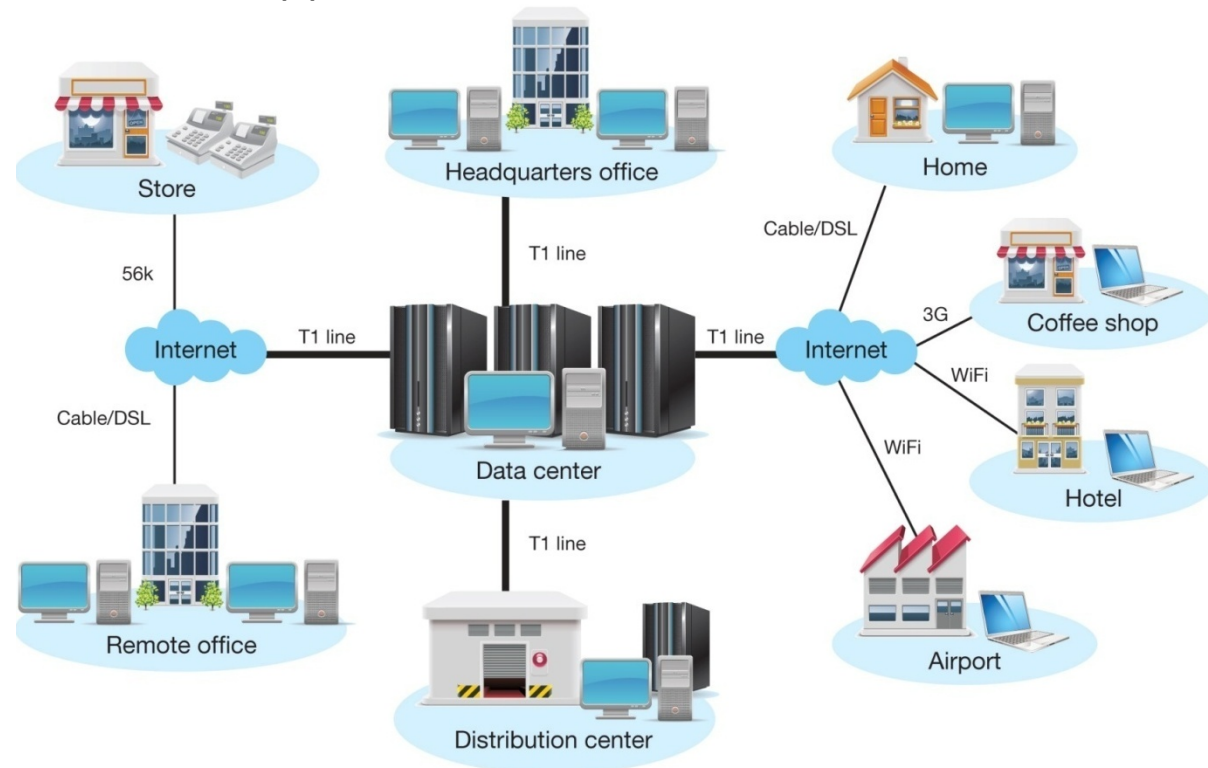
- **End-points may include:**

- Windows PCs and laptops
- Mac laptops
- Windows or Linux servers that are in your DC, or are distributed throughout the organization
- Mobile devices
- Retail POS machines
- Bank ATMs
- etc ...

- **They may be located in:**

- Offices
- Shops
- Homes
- Schools
- Hotels
- etc

The network connectivity for some of these devices maybe extremely limited, posing challenges for patch and security management and support



Endpoint management: The Three Cs

- **Manage Complexity** , Simplify and Automate
 - Coordination across business processes through the organization
 - Heterogeneous endpoints, networks, applications and OSES
- **Compliance**: Ensure Compliance, Reduce Risk
 - Security vulnerabilities
 - Inaccurate inventory
 - Industry regulation compliance and auditing (COBIT, SOX, HIPAA, and more)
- **Cost**: Reduce TCO & Operational Costs
 - Remove manual intervention
 - Remove unnecessary configuration diversity
 - Improve efficiency



Consequences of Ineffective Endpoint Management

Gartner research discovered that it takes many organizations 120 days to achieve a 90 to 95% patch success rate, and only 50 to 75% of all machines receive a given patch within the first week.

Gartner[®]

Getting Back to Basics on Patch Management
Gartner Research, August 24, 2009

Document G00170521

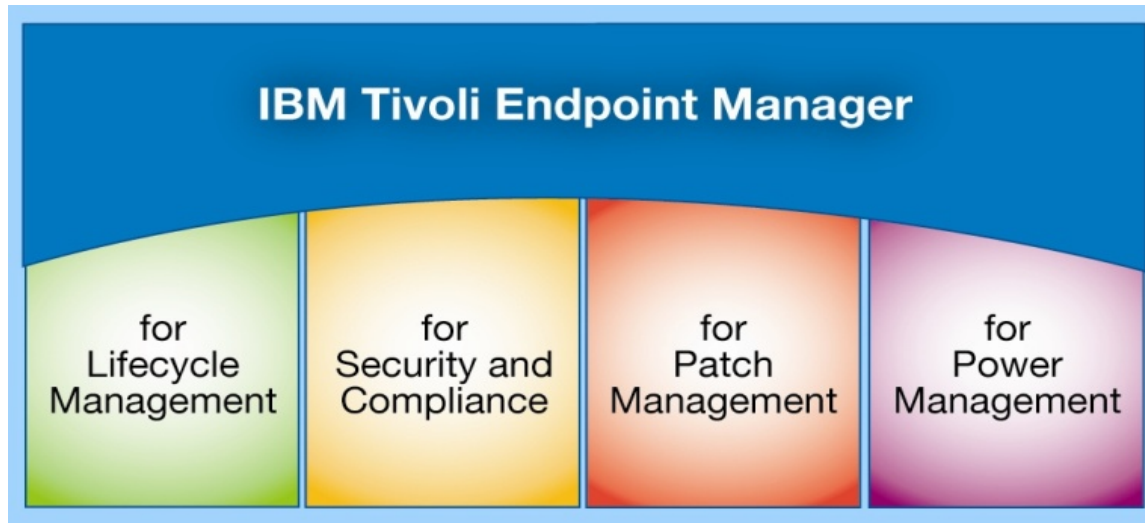
End-points require the following core management functions

- Network Asset Discovery
- Endpoint HW, SW Inventory
- Patch Management
- Software Distribution
- OS Deployment
- Remote Desktop Control
- Software Use Analysis
- Power Management

Whether it's a Mac connecting from hotel wi-fi, or a Windows laptop at 30K feet, or a Red Hat Linux Server in your data center, it must be protected, managed for compliance, and supported.



Tivoli Endpoint Manager (TEM), built on BigFix Technology



Using Tivoli Endpoint Manager, clients can:

- See all endpoints: physical, virtual, fixed or mobile
- Fix issues anywhere in minutes, regardless of bandwidth or connectivity
- Deploy in days, over any network or geography
- Achieve continuous compliance – across platforms
- Simplify operations and enjoy rapid time to value

A Customer Case Study – evidence of the ROI

	Previous Approach	With TEM
90K device deployment	6 months	1 week
# of Management Servers	25	1
Annual Electricity Costs	\$6.9M	\$4M
Patch Cycle	7 Days	5 minutes
Software Inventory Cycle (license “true-up”)	3 weeks	20 minutes
Vulnerability Assessment Cycle	6 months	3 days
Security Configuration Cycle	5 months, 6 FTEs	2 weeks, 1 FTE

"I just wanted to share this with you and the guys.... The April Microsoft Patch push began at 5:00 AM on 4/20 with 579,047 affected patch instances to push, the largest push to date. At 3:00 PM on 4/20 a total of 527,916 affected patch instances were fixed. This gives us a 91.17% affected patch instances fixed in only 10 hours!

I don't believe any other product could have accomplished what Tivoli Endpoint Manager accomplished here today."

--IT Manager, Large Healthcare Organization

TEM manages end-points for some of the world's largest organizations

Tivoli Endpoint Manager Customer	Managed Devices
IBM (under deployment)	440,000
US Agency 1	430,000
World's largest chip manufacturer	350,000
World's largest retailer	240,000
World's largest HMO	230,000
Los Angeles Unified School Dist	226,000
Sinopec (China Petroleum)	180,000
Large Telco Provider	166,000
Wall-Street Firm 1	130,000
China Ministry of Rails	120,000
US Agency 2	111,000
Miami Dade County School Dist	110,000
Wall-Street Firm 2	110,000
US Agency 3	100,000
Wall-Street Firm 3	100,000

Leading organizations in all sectors are using TEM

Manufacturing



Energy



Retail / Consumer



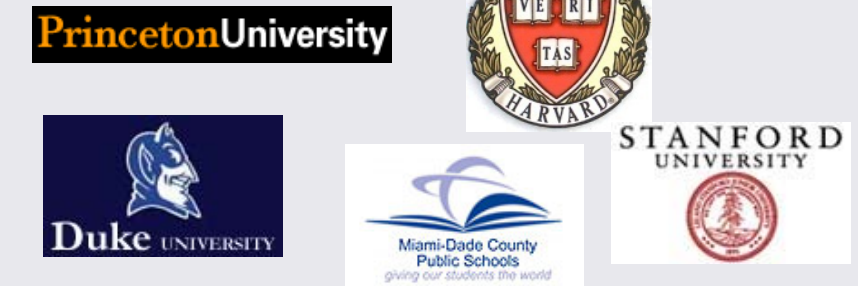
Banking



Government



Education



Pharma / Biotech



TEM Asia Pacific customers include



Benefits of TEM

- **Update servers, client devices and applications in hours to days** vs. weeks to months, with **95-99% first-pass success rates**
- Automate remediation of malware and configuration drifts to reduce user frustration, system downtime, support calls and vulnerabilities
- **Reduce annual electricity costs by \$20-\$50 per PC/Mac** with centralized Power Management while waking them for 'off hours' maintenance
- **Save up to 30% of annual software spend** by reclaiming under-used software and avoid over-deployment to ensure compliance with vendor contracts
- Enable real time, accurate reports on inventory and compliance across all endpoints vs. relying on data which is only as good as the last scan. Pass more security/vendor audits and more.
- **Reduce endpoint management labor by a factor of 20:1**
- Consolidate infrastructure to one quiet, multi-purpose agent, one unified console and one server for over 250,000 endpoints



Thankyou

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IBM Software

ExecutiveSummit2011

A Premier Leadership Exchange

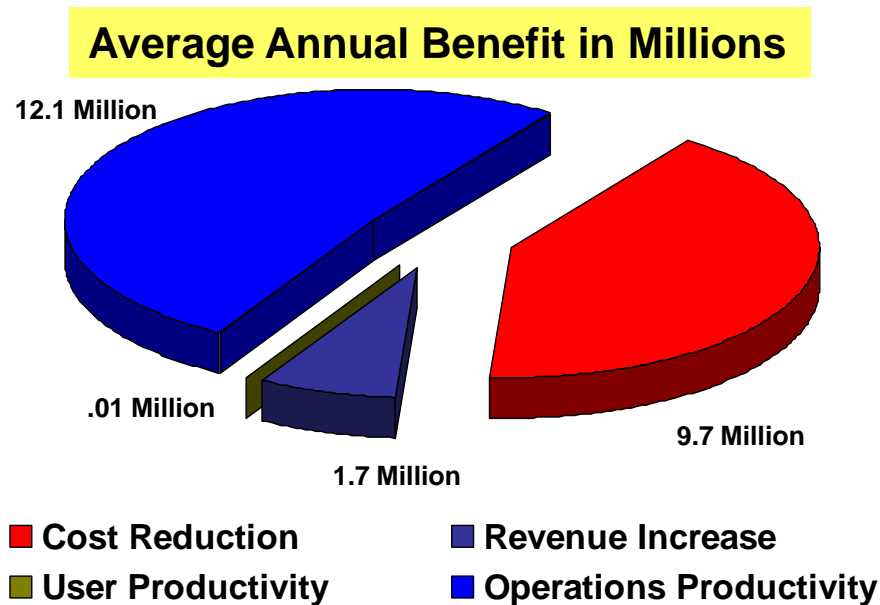
INFRASTRUCTURE MANAGEMENT BACK-UP SLIDES

IDC's research indicates a high level of business value for Event Management solutions

- Increased revenue by \$1.7 million
- New services delivered to market 37% faster
 - Earlier increased revenue
- Improved mean-time-to-repair a device or system by 54%
- Saved \$9.5 million annually
 - Operations staff costs savings of \$482,162
- Reduced capital expenditure by \$1.3 million
- Consolidated NOC's
 - Reduced expenses by 70%
 - Annual savings of \$293,801



[Hyperlink to report](#)



* "A Return on Investment Analysis of IBM Tivoli Netcool", IDC January 2009

TEM BACK-UP SLIDES

TEM Power Management

TEM Power Management allows IT organizations to enforce conservation policies across the enterprise, while providing granularity that enables application of those policies to a single computer.

Features and Benefits

- **Saves up to \$50 per year per** TEM-managed device depending on local electricity costs and net energy savings achieve
- Centralized, policy-driven power management of distributed computers scalable from individual machines to entire global enterprises
- Fine-grained controls for hibernation/standby, subsystem-only shutdown, and save-work-before-shutdown options
- Wake-on-LAN support synchronizes systems maintenance processes with power conservation
- Opt-in programs encourage end-user participation as well as Wake-on-Web feature to allow for end-users to remotely connect and turn on their own systems



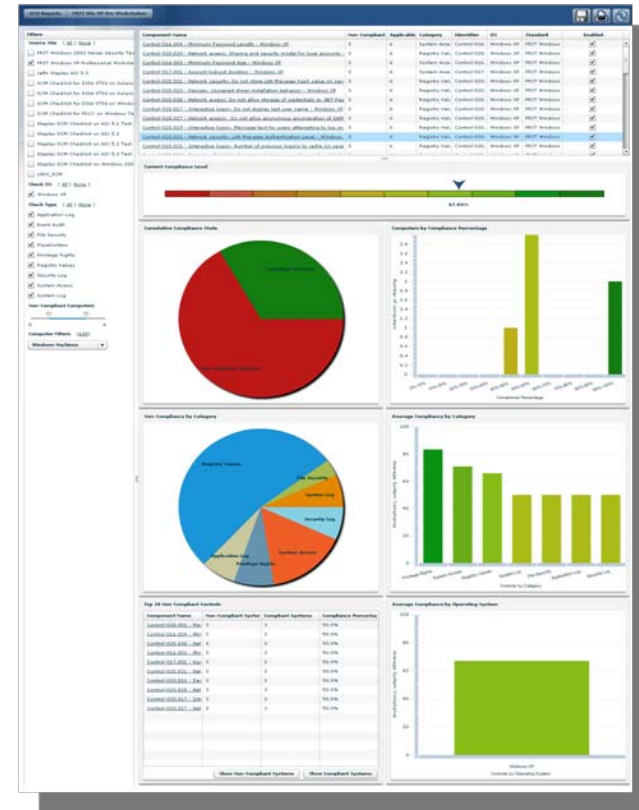
TEM Security Configuration & Vulnerability Management

Comprehensive solution for end-to-end security management which includes:

- Asset Discovery
- Patch Management
- Security Configuration Management
- Vulnerability Management

Features and Benefits

- Continuous enforcement of security policies, regardless of network connection status
- Host-based vulnerability assessment with severity scoring and a 99.9% accuracy rate
- Define and assess client compliance to security configuration baselines
- SCAP certified for FDCC
- Heterogeneous platform support: Windows, UNI X, Linux, and Macintosh



TEM Endpoint Protection

Integrated Endpoint Protection modules include:

- Anti-Virus
- Anti-Malware
- Endpoint Firewall
- Web Protection
- Client Manager for Endpoint Protection
- Network Access Control (NAC)

Features and Benefits

- Prevent infection, identity theft, data loss, network downtime, lost productivity, and compliance violations
- Eliminate security gap with real-time threat intelligence
- Achieve unparalleled visibility into complete enterprise protection
- Combine endpoint protection, security configuration, patch management, and systems lifecycle management tools

