

# Service Management and Green IT - It's Time to Industrialize IT

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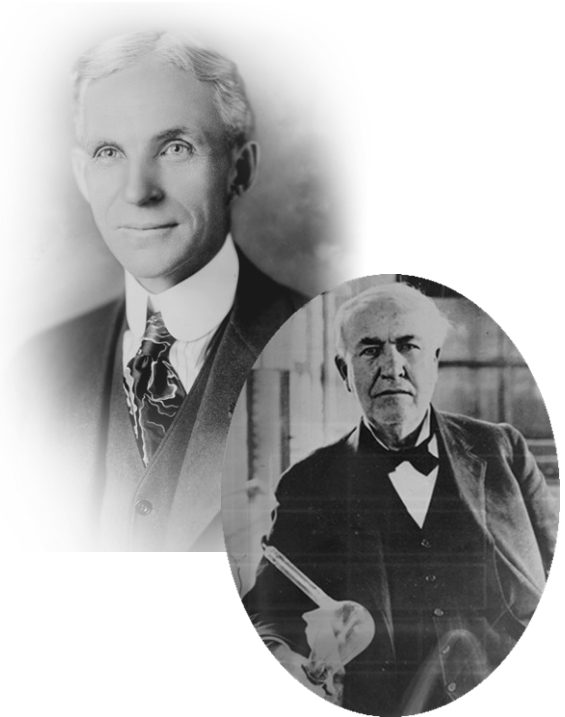


# Industrialization and Innovation



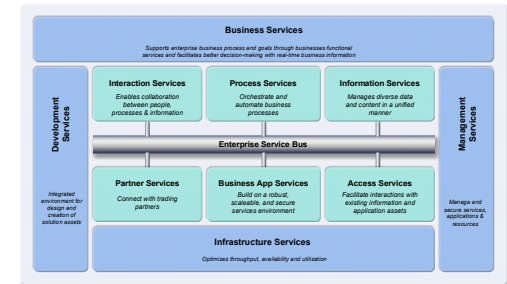
# Industrialization is Second-Level Innovation

- Basic innovation  
→ “Horseless Carriage”
- Process Innovation  
→ Assembly Line
- Enabling technology  
→ Scalable power distribution



# Industrialization and Innovation

- Basic innovation  
→ “Information Technology”
  
- Process Innovation  
→ Service Management
  
- Enabling technology  
→ Scalable computing grid



# Why? Industrialization Enables the Next Level of Scalability

## Financial services



- Market data volumes rose by 1750% from 2003-2006
- By 2010 over half of U.S. equities trading will be algorithmic
- 4 billion messages per day will grow to nearly 130 billion by 2010

## Medical imaging



- 1MB / 2D image in 2004
- 1TB / 4D image in 2007
- 2010: 30% of total world storage

## Wireless communications



- In India:
  - Wireless lines doubling every two years
  - August 2007 -- 200M wireless lines
- Worldwide: 3 billion mobile subscribers in 2007

Sources: <sup>1</sup>Aite Group, Algorithmic Trading 2006: More Bells and Whistles, November 2006; <sup>2</sup>TABB Group, Trading at Light Speed: Analyzing Low Latency Market Data Infrastructure, March 2007

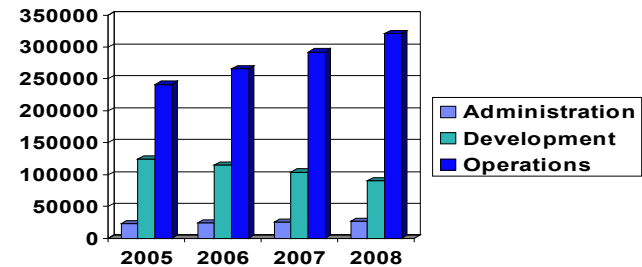
# Why? IT is No Longer Just About the Datacenter



***Real-time, mission-critical, connected...***

## If we don't Industrialize...

- IT's ability to drive further innovation will diminish.
- We'll run out of power, or money, or both.
- Somebody else will do it for us!



# Data centers are at a tipping point and energy use and cost is the driver

## Increased Computing Demand

## Changing Cost Dynamics

## Data Center Lifecycle Mismatch

- **Between 2000 and 2010 sever installations will grow by 6x and storage by 69x. Wintel and Unix server utilization low – 3 to 30% – IBM / Consultant studies**
- **Per square foot, annual data center energy costs are 10 to 30 times more than those of a typical office building. <sup>2</sup> - William Tschudi, March 2006**
- **Data centers have doubled their energy use in the past five years.<sup>3</sup> - Koomey, February 2007**
- **US commercial electrical costs increased by 10% from 2005-06.<sup>4</sup> - EPA Monthly Forecast, 2007**
- **“Eighty-seven percent of data centers were built before 2001”<sup>5</sup>**
- **“Twenty-nine percent of clients identified” data center capability affected server purchases ”- Ziff Davis**

1. Gartner, *Data Center Power and Cooling Scenario Through 2015*, Rakesh Kumar, March 2007.

2. William Tschudi, March 2006.

3. Koomey, February 2007.

4. EPA Monthly Forecast, 2007.

5. Nemertes Research, *Architecting and Managing the 21st Century Data Center*, Johna Till Johnson, 2006.



## So how do we...

- Deliver business results faster, cheaper and with repeatable quality?
- Move to a highly energy-efficient datacenter model?
- Scale beyond our current capabilities both in development and operations?
- Tackle the rising cost and complexity of the business infrastructure?



# Opportunities abound for Green IT



## *The magnitude of the problem ...*

- Data Centers will consume 180B kWh in 2007 —doubling in next 4 years
- Some industries are forecasting doubling consumption annually
- Over \$29B in power & cooling industry wide in 2007

- U.S. Energy Information Administration, IDC



## *...inefficiency needs to be addressed;*

- 100 units of energy production  $\Rightarrow$  3 units for productive IT
- Average resource utilization <10% = \$140B excess server capacity

-U.S Dept. of Energy, IDC



## *... e-waste can no longer be ignored.*

- 1 billion computers will become potential scrap by 2010
- Only 45% of US companies have eco-friendly disposal plans
- The potential toxic risks of improper disposal are enormous

- IDC, National Safety Council

# Industrialization is About Infrastructure, Process and People

Requires a **transformation**  
across the business and Technology



## ***Infrastructure***

- Consolidation
- Virtualization
- Transformation
- Automation and Mass Customization
- Enhanced IT and infrastructure productivity

## ***Process***

- Repeatable and documented process
- Discipline integrated across all organizations

## ***People***

- Enhanced people productivity
- Skills shift from operations (break fix) to Business Analysts
- Break down silos and organize around service delivery
- Paradigm shifts

# Roadblocks to Innovation and Success

## *Business Objectives*

*Growth &  
Competitive Edge*

*Compliance & Risk  
Management*

*Optimize  
Investments*

**Obscured views. Inadequate governance.  
IT disconnect across the lifecycle.**

*Lost opportunities. Unnecessary risk. Low efficiency & return.*

Business processes

Information

People

Information Technology

Business Assets

IT Processes

**Business Services and Assets**

# Enabling Innovation with IBM Service Management

## *Business Objectives*

*Growth &  
Competitive Edge*

*Compliance & Risk  
Management*

*Optimize  
Investments*

## **IBM Service Management**

*Provides the integrated visibility, control & automation across the service lifecycle that are needed to innovate and achieve business objectives.*

***Visibility***

***Control***

***Automation***

**Business Services & Assets**

# Enabling Innovation with IBM Service Management



Visibility: *See your Business*



Control: *Govern your Business*



Automation: *Optimize your Business*

# Comprehensive Capabilities, Built on Best Practices

## IBM Service Management

Best Practices, Methodologies, and Services

### Service Management Platform

Service  
Delivery &  
Process  
Automation

Service  
Availability &  
Performance  
Management

Storage  
Management

Security, Risk  
& Compliance

Datacenter  
Transformation

Asset &  
Financial  
Management

Network  
&  
Service  
Assurance

Visibility

Control

Automation

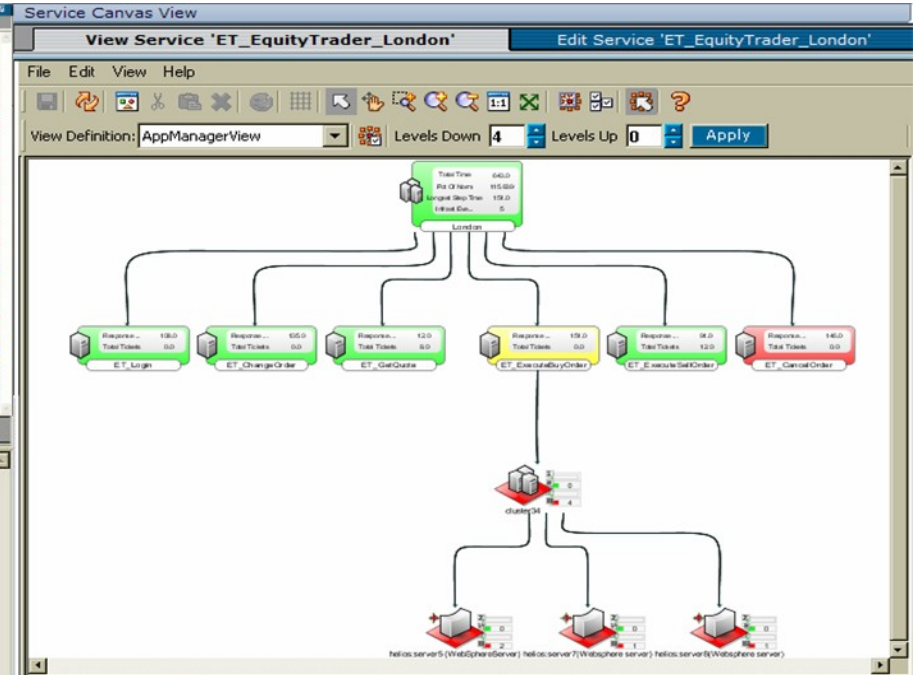
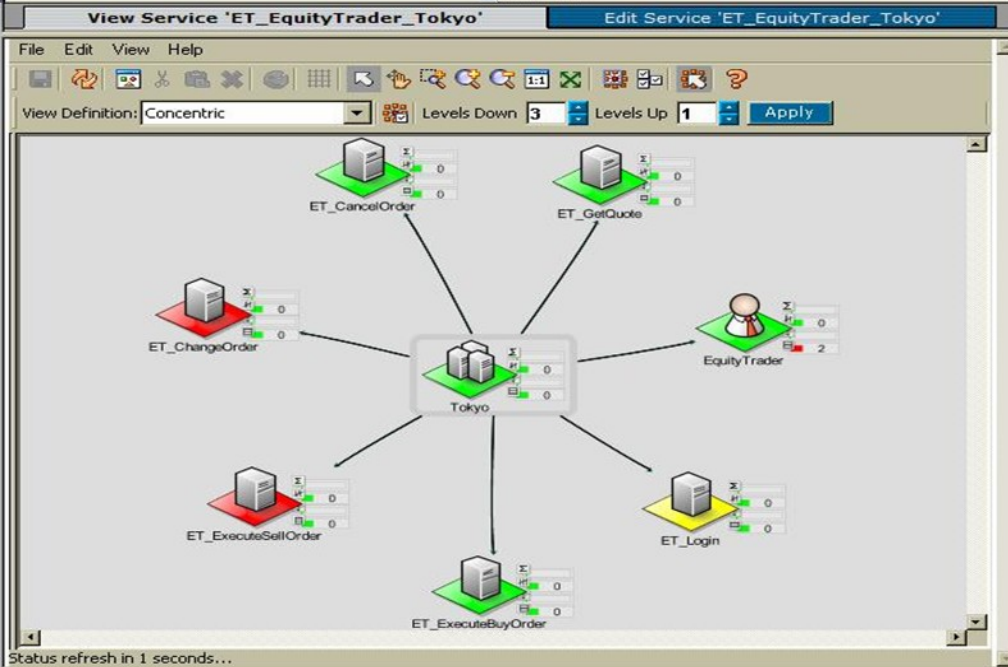
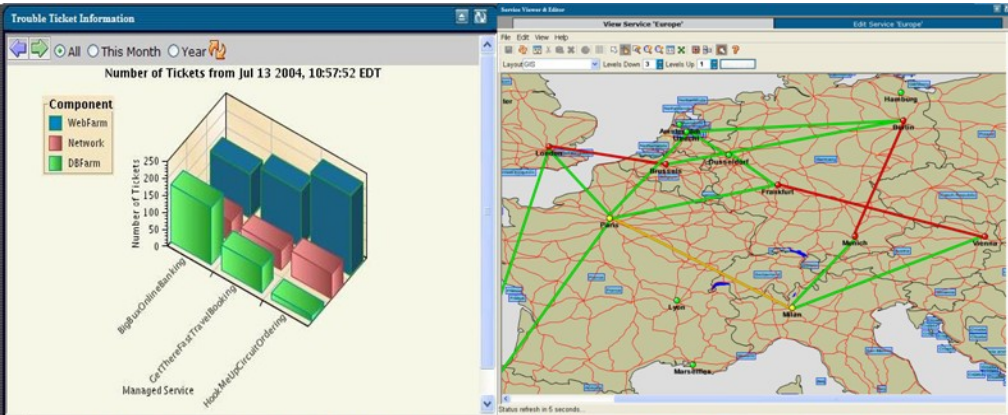
# Visibility







# Visibility to Your Business and Service Level Agreements



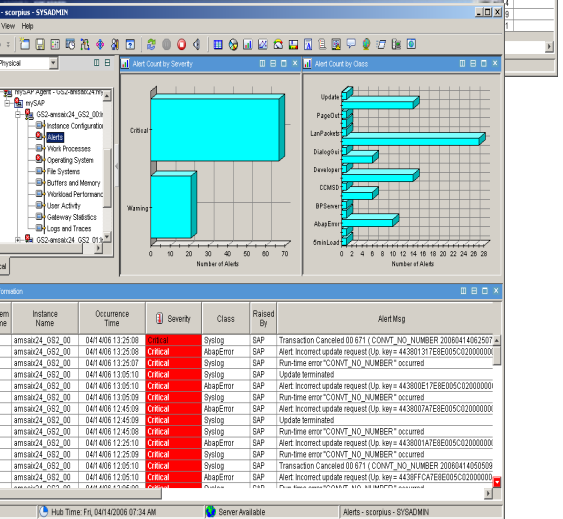
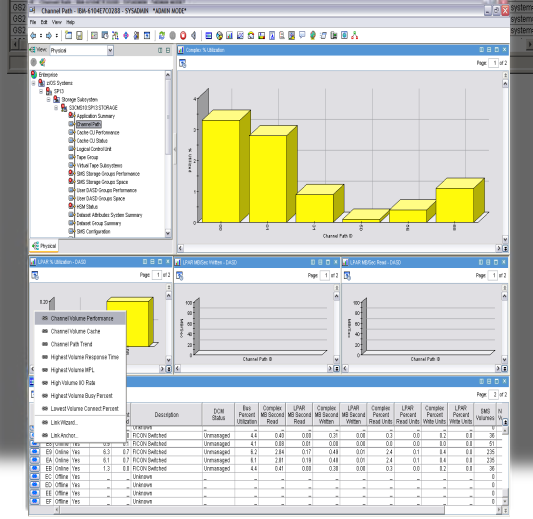
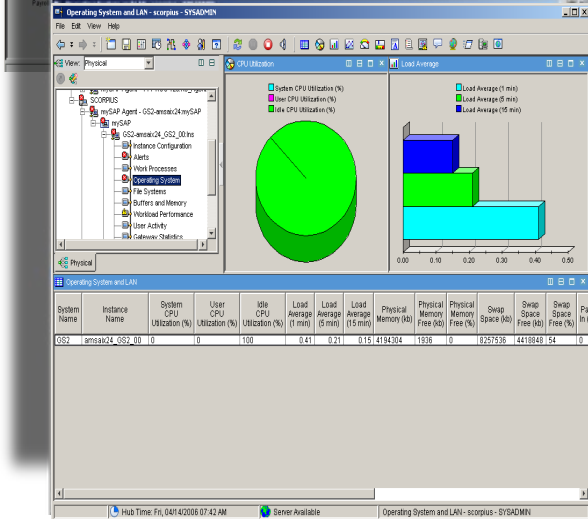
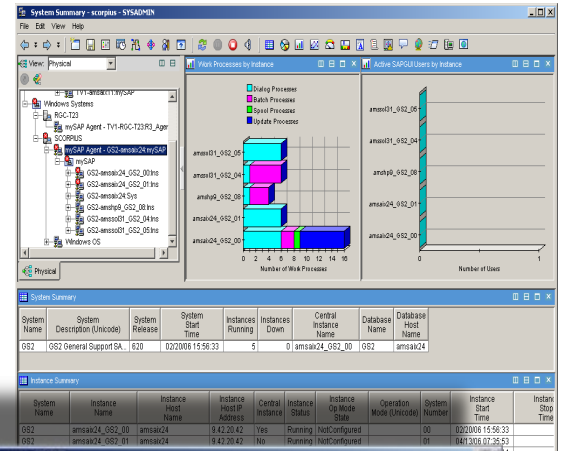
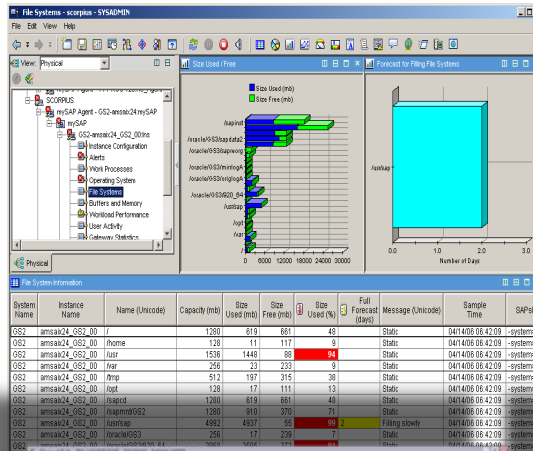
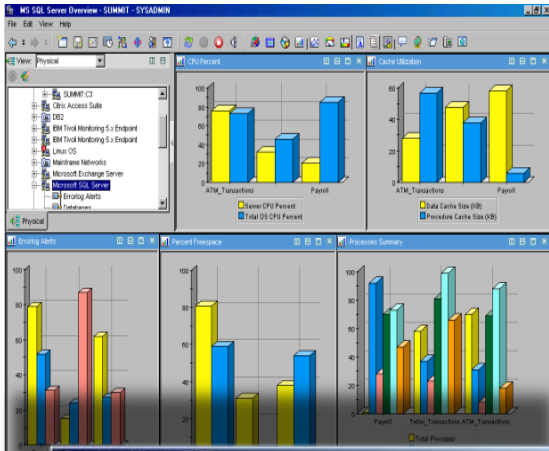
**Service Details**

SLA | Events | Rules

[http://192.168.74.30:8787/RawEvents\\_236](http://192.168.74.30:8787/RawEvents_236)

Node	Summary	AlertKey	Class
	Test event for rad instance Bad Stz		Default Class
10.10.10.7	Test event for rad instance Bad Stz		Default Class
	Test event for rad instance Bad Stz		Default Class
	Test event for rad instance Bad Stz		Default Class
AppDisco_	Test event for rad instance Bad Stz	AppDisco_Helios_serv	Default Class
10.10.10.2	Test event for rad instance Bad Stz	/home/jwang/bee70/j	Default Class
10.10.10.7	Test event for rad instance Bad Stz		Default Class
AppDisco_	Test event for rad instance Bad Stz	AppDisco_Helios_serv	Default Class

# Visibility to Details



# Visibility to Your Processes

**Security, Users and Groups**

- Users
- Security Groups
- People
- Person Groups

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**Workflow Configuration**

- Workflow Designer
- Roles
- Actions
- Communication Templates
- Workflow Administration
- Escalations

---

**Reporting**

- Report Administration
- KPI Manager

**Inbox / Assignments** Refresh

Description	Due Date	Priority	Start Date	Route
No Assignments found for <b>Mike Wilson</b>				

**Work View** View By: Priority

Chart Type: [BAR](#)

Work View (Sorted by Priority) (By Priority)

Priority	Value	Percent (%)
1	2	40
2	2	40
5	1	20

[List View](#)

**Open Work Orders Waiting Approval** Update

Last Run: 8/3/04 3:05 PM

Status	KPI	Actual	Target	Variance
↑	Open Work Orders Waiting Approval	131	25	106

# Control



# Control over Change Management

**Favorite Applications**

- Equipment
  - Component Codes (TR)
  - Equipment (TR)
  - Equipment Warranty (TR)
  - Logs (TR)
  - Position Codes (TR)
- Inventory
  - Inventory Counting (TR)
  - Stock Packages (TR)

**NPI List** (Last run: 1/13/04 5:16 PM)

Status	KPI	Actual	Target	Variance
🔴	Average Emergency Completion Time	7.56	0.18	7.38
🔴	Average Response Time for Emergency Work Orders	2.81	0.02	2.79
🔴	PM Work Orders Overdue	82	5	77
🔴	Work Orders Overdue	194	15	149

**NPI Graph** (Last run: 1/13/04 5:40 PM)

Status	KPI	Actual	Target	Variance
🔴	Average Cost per Mile	13.25	11	2.25

**Logistics Management**

Network diagram showing connections between various systems like Microsoft SQL, Windows, Solaris, HP-UX, Sybase, and Apache.

**Replace Bearings** (Status: WAPPR)

```

    graph LR
      RT[RT] --> REVIEW[REVIEW]
      REVIEW --> VALUE{VALUE}
      VALUE --> HIGH[HIGH]
      VALUE --> LOW[LOW]
      HIGH --> STOP((STOP))
      LOW --> STOP
      LOW --> REWORK[REWORK]
  
```

**Work Orders**

STARTDATE	TIMELMT	APP	PRIORITY	DESCRIPTION	Route
No Inbox / Assignments found for Roland Smith					
				Average Response Time for Emergency Work Orders	
				PM Work Orders Overdue	
				Work Orders Overdue	

**Work Orders** (Quick Reporting (TR), Work Order Tracking (TR))

**Work Set**

ORDER#	WORK#	STATUS	DESCRIPTION
EN001	0000	WAPPR	Priority Expiration Notification
EN002	0000	WAPPR	Priority Expiration Notification

**My Inbox / Assignments**

Record #	DUE DATE	START DATE	TIMELMT	APP	PRIORITY	DESCRIPTION	Route
No Inbox / Assignments found for Roland Smith							

# Control over Your Assets Life Cycle

The image displays several overlapping screenshots of the MAXIMO Work Order Tracking (WOT) application. The primary window shows a 'Job Details' form for a work order (1181) at the 'River Water System P1' site. Key fields include 'Asset' (RVS), 'Plant System' (RVS), and 'Class' (PUMP/ORDER). Below this, a 'Scheduling Information' section shows target and actual start/finish dates. A 'Responsibility' section lists the reporter as YALSON. Other visible windows include a 'View Costs and Prices' dialog box with a detailed cost breakdown table, and a 'Inventory' screen showing item details for 'Government Stems' at the 'DOV' site. The application interface is typical of early 2000s web-based ERP systems, with multiple panes and a complex form layout.

# Automation





# Automate What You Want, When You Want

Netcool/Event Manager interface showing a table of events. The table has columns: Name, Summary, Last Occurrence, Total. The events listed include 'File monitor', 'Job monitor', and 'Custom event'.

Integrated Solutions Console showing a 'Job monitor' configuration page. It displays details for a job named 'MATRESA + FINAL (DAILY)' and 'MATRESA + \* (SUCCESSFUL, ERROR)'. The interface includes sections for 'General Information', 'Events', and 'Custom event'.

Resource Overview showing a bar chart and a table of resources. The bar chart displays metrics for 'Running Start', 'Running Stop', and 'Running Stop'. The table lists resources with columns: Resource Name, System, Component, Status, Closed Status, Automation, Health Status, Automation, and Description.

SOI Server Status showing a tree view of server components and a bar chart. The bar chart displays 'SOI Server Attempts vs Failed'.

Topology Viewer showing a network diagram of a 'L2: Subsystem'. It displays connections between 'Disks (Storage...)', 'Ports (NIC)', and 'Volumes (Storage...)'.

Job Monitor View showing a table of job execution details. The table includes columns: JobName, Start Time, Stop Time, External Status, JobName, JobStatus, JobPriority, JobStatus, and JobCost.

# Automate Your Processes

The image displays several Tivoli software interfaces:

- Tivoli Enterprise Portal:** Shows system information for Linux Systems, including System Name, Type, Version, Total Physical Memory (KB), Free Memory (KB), Total Virtual Memory (KB), Number of User Sessions, Number of System Files, Net Address, and Timestamp.
- Tivoli Application Dependency Discovery Manager:** Displays a topology diagram of Business Applications and Application Infrastructure, along with discovered components.
- NETCOOL Suite:** Shows an Active Event List with columns for Node, Summary, Last Occurrence, and Serial. It lists various events such as process running on netcoolnode, process starting on netcoolnode, and event server start.
- Workload Manager:** Shows a user interface for Mike Wilson, including a Bulletin Board, Job / Assignments, Work View (with a bar chart), and Open Work Orders Waiting Approval (with a gauge).

# IBM Service Management's Green Data Center

**Optimize Assets by Energy Usage**

**Green Business Services**

**Tivoli Monitoring for Green Energy**

**Intelligent Chargeback**

**Energy Aware Provisioning**

# Enabling Innovation with IBM Service Management



Visibility: *See your Business*



Control: *Govern your Business*



Automation: *Optimize your Business*

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# What Should You do Next?

- Attend the specific content tracks that best meet your business needs
- Check out the IBM Service management tools:
  - Visibility. Control. Automation. (VCA) Tool  
[www.ibm.com/software/tivoli/governance/servicemanagement/vca/](http://www.ibm.com/software/tivoli/governance/servicemanagement/vca/)
  - IBM Service Management Entry Points - documented projects based on actual customer usage and previous implementation experiences  
[www.ibm.com/software/tivoli/governance/servicemanagement/overview.html](http://www.ibm.com/software/tivoli/governance/servicemanagement/overview.html)
  - GTS Health check  
[www.ibm.com/software/tivoli/pulse08/checkyourpulse.html](http://www.ibm.com/software/tivoli/pulse08/checkyourpulse.html)
- Speak to the Local IBM and Partner Representatives present today:

## Don't Miss Pulse 2009, Feb. 8-12, in Las Vegas

- Join over 5,500 attendees for an even bigger and better event
- Hear more service management experts, technical presentations and customer testimonials
- Enjoy expanded hours and a Cyber Cafe at the Pulse Expo
- Stay at the MGM Grand with all Pulse attendees: 5,000+ rooms
- Register at: <http://www-306.ibm.com/software/tivoli/p> (begins Aug. 29)
- Create personal agenda with customized agenda tool on conference website
- Help shape Pulse 2009 – post your suggestions to online forum
- Sign up! Call for expert speakers begins in September



Thank  
You