



Tivoli Software for a Greener World

**Domenico
Raguseo**

Tivoli Technical Sales
Manager



The costs of the energy.



Multiple factors are driving Organizations

Costs

Energy costs continue to increase

Oil peaked at \$147/barrel, long term trends are higher



Regulatory Mandates

Increased regulatory scrutiny, with government regulations around water usage, carbon emissions etc



Workload Growth

Growth in Application and Business workloads doubles every 2 years driving the need new servers, DASD, power and cooling



“Going Green”

Operational

Capacity shortages for data centre power and cooling are limiting ability to expand



Social & People

Customers have started evaluating the green credentials of suppliers and products



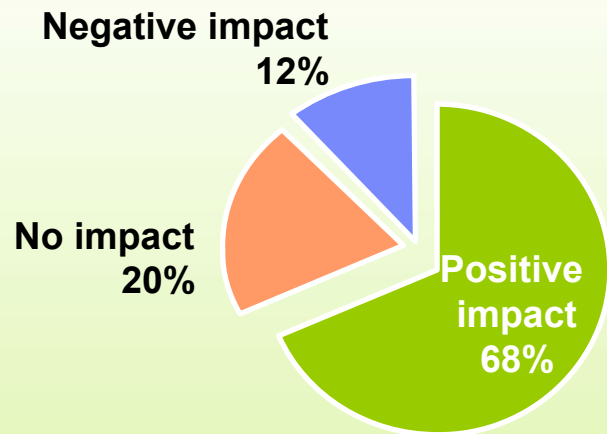
Cultural Shifts

Demographics changes and global teams require collaboration across cultural, generational and geographic boundaries



Green is the New Business Imperative

CEO's Expectations have Changed



- 80% of CEOs view sustainability as impacting brand value
- 82% of executives expect some form of climate change regulation within 5 years
- 31% say they want to reduce their environmental impact

Competitive Pressures are Real

SUSTAINABLE *Business.com*

Annual
sustainability
stock analysts

Environmental
rating for over 2000
public companies

Innovest
STRATEGIC VALUE ADVISORS



Tracks environmental
performance of 1200
companies

61% say sustainability is a
key issue

44% say sustainability
now a board-level issue



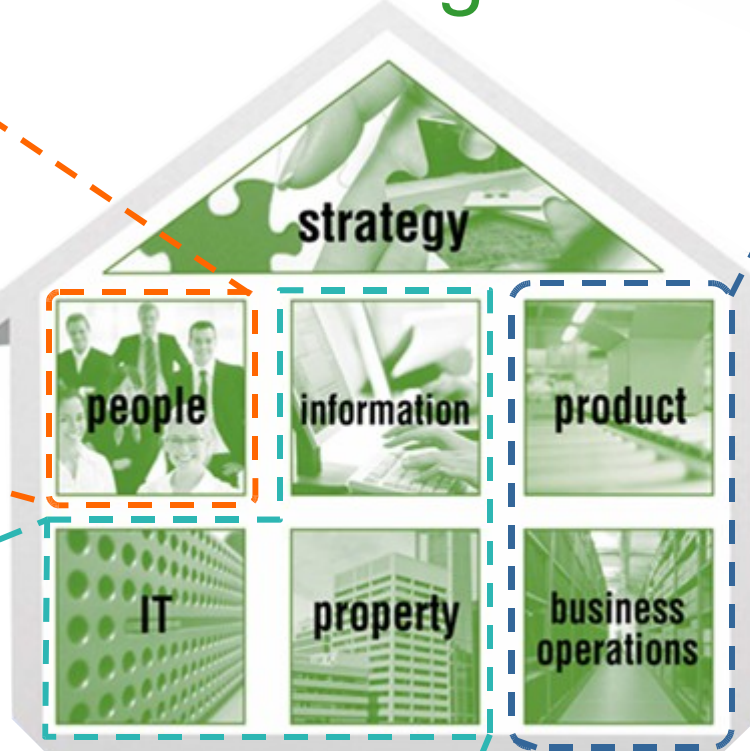
Challenges In Moving Toward A Green Data Center

There are a number of factors that are contributing to greater urgency to find solutions that help move toward a green data center.

- Power and thermal metrics are not sufficiently integrated with IT to provide oversight and control of energy in the context of data center workloads
- Facilities and IT assets are not well-integrated and lack a common, real-time view of energy in the data center
- Current service management tools are not sufficiently energy-aware and lack the ability to assess the impact of energy on business services
- Inability to determine power consumption and costs at granular level means there is little accountability for energy usage
- Difficult or impossible to get consolidated reports on power usage, historic/trending information, etc.
- No way to measure or demonstrate improvements to energy use or carbon footprint



Green Economic Advantage with IBM Software



Lotus software
Rational software

- Online collaboration (IM, Web Conference etc)
- Online learning
- Multi-site software development coordination

WebSphere software
Information Management
Tivoli software
Lotus software
Rational software

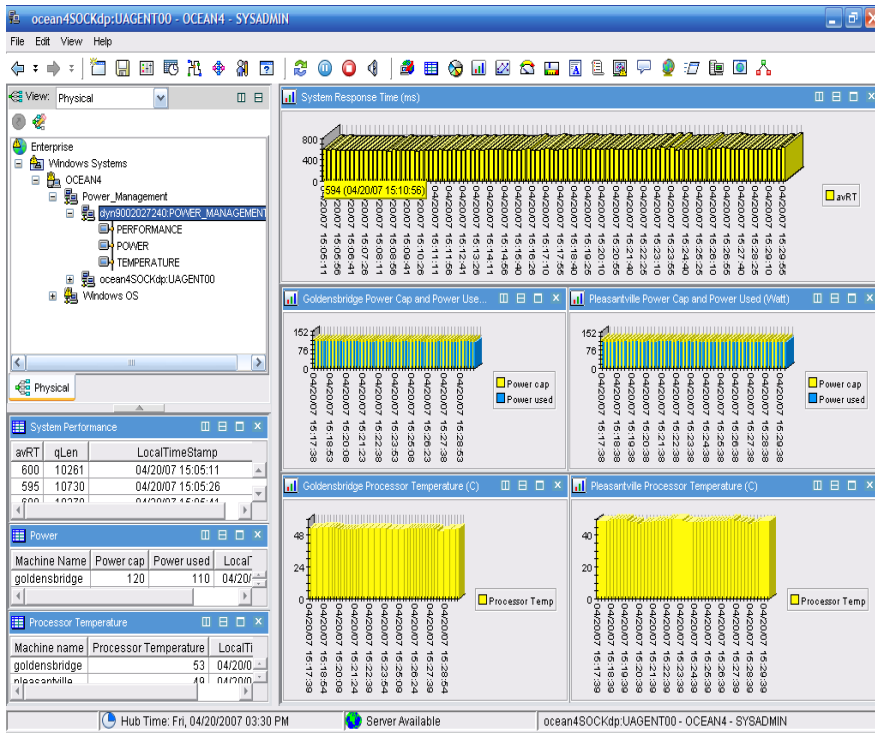
- Business process modeling and redefinition
- Processes with eForms and images
- Human task automation
- Dynamic workload distribution
- Smart SOA efficiencies
- Application consolidation
- Energy cost allocation and billing
- Streamline product development cycle, with less material and energy waste

Lotus software
Information Management
Tivoli software
WebSphere software

- Consolidate and Virtualize IT
- De-duplication and data compression
- Tiered storage
- Optimize IT and Facility energy use
- Maintenance schedule and status tracking
- Energy use measurement and reporting
- Secure, traceable, categorized and indexed information

Tivoli Monitoring for Energy Management

Now all your IT compute data plus all your facilities metrics in one spot !!!



- Visualize the power consumption and thermal signatures of data center resources
- Alert operators and facility managers before servers reach critical energy and temperature thresholds
- Automate and control server's energy usage to optimal levels including triggers to 3rd party partners

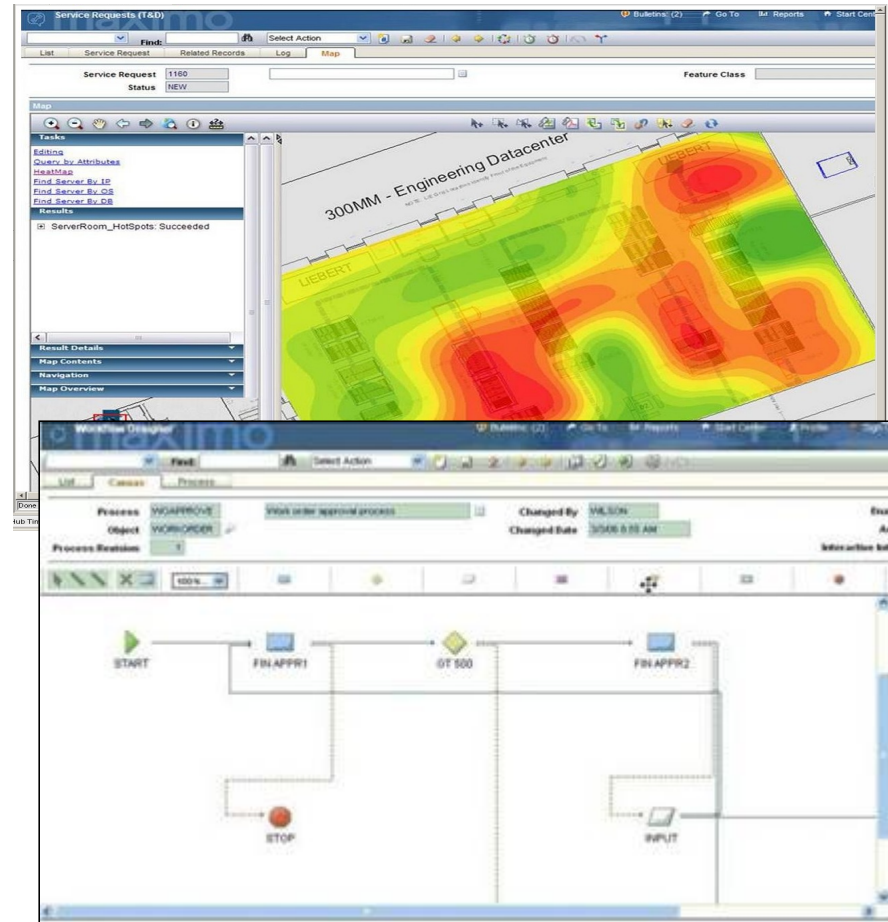
New Partner Ecosystem Announcing 5/19/08:



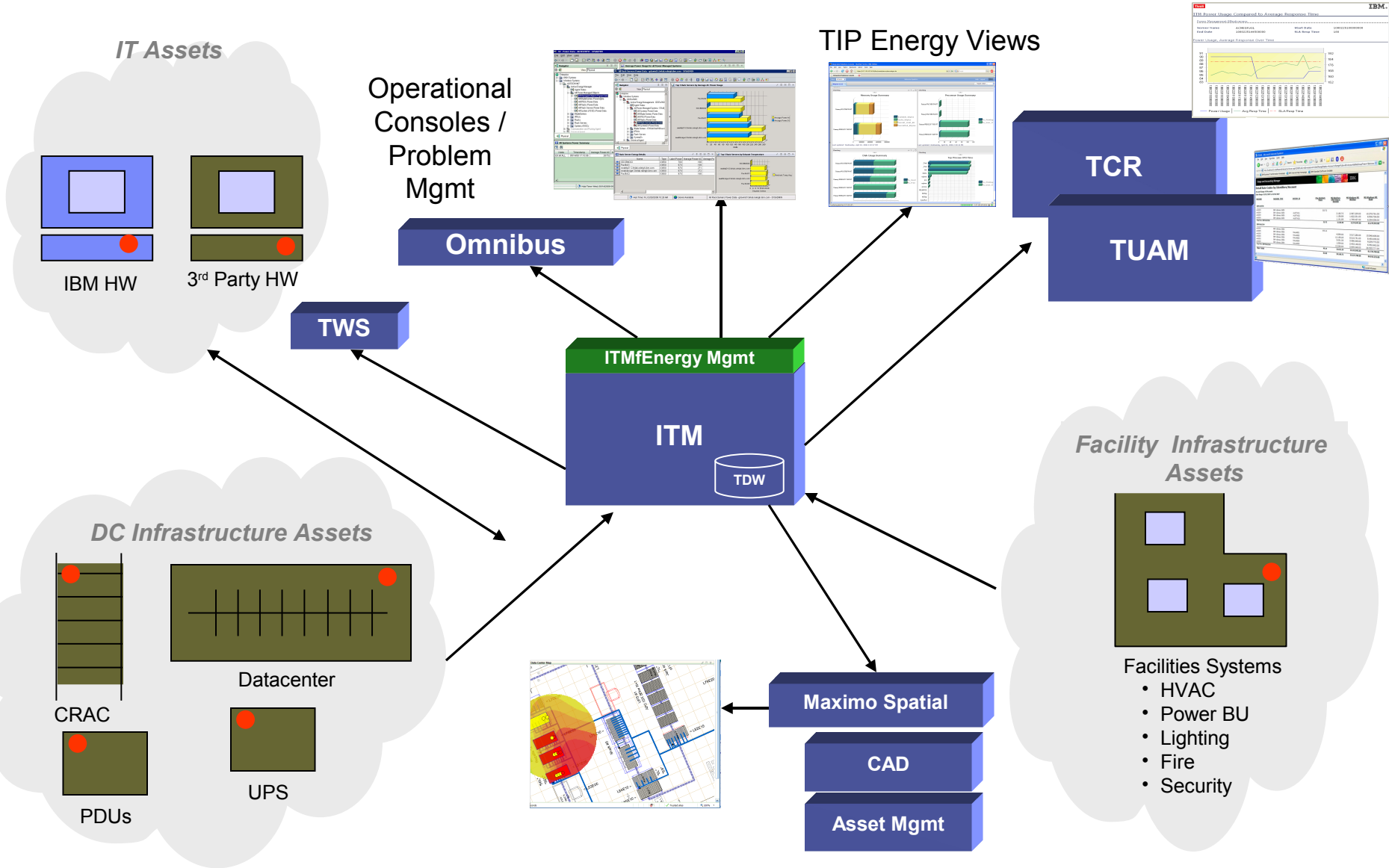
Tivoli Maximo Enterprise Asset Management Spatial

Optimize assets by your energy usage

- Optimize the energy utilization of your assets and extend asset life based on energy utilization via *Tivoli Maximo Enterprise Asset Management*
- Visualize the thermal dynamics of the data center and identify problem areas
- Alert source for Facility and DC “operators” of upcoming energy problems
- Enable workflows that allow you to create role based Automation of Asset lifecycles



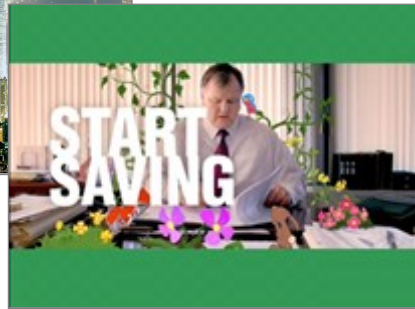
Proposed High Level Energy / Space Management Architecture



Don't Just Talk About it, Do it Reported progress against goals



Enhanced IBM brand awareness



Transparent and verified results



Improved our rankings



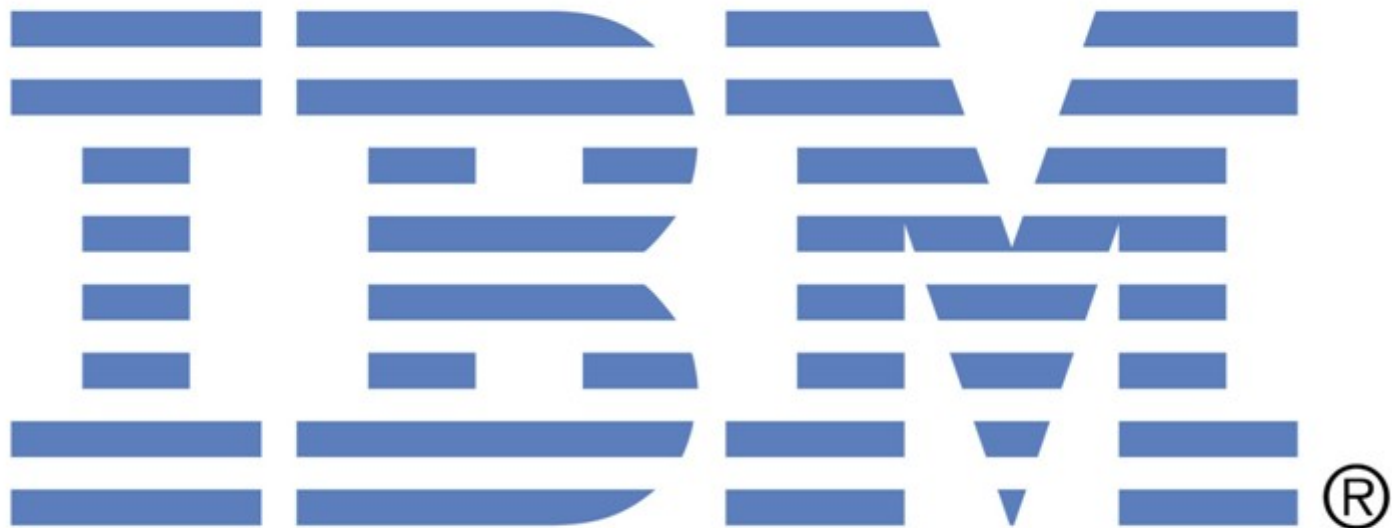
Seeking and winning awards



- 1990-2007, avoided energy-use-CO₂ emissions equivalent to **45%** of IBM's 1990 energy use, average saving of **\$18.2 million per year** in utility costs.
- **\$97 million** saved last year in travel costs from use of Web conferencing
- **IBM Strategic Data Centers benefits realized since May 10,2007**
 - New 72,000 square foot data center designed to achieve **71%** efficiency rating
 - **18,500** virtualized images deployed as part of 3900-to-40 consolidation
 - Achieved operational savings as high as **70%**
 - Annual energy usage reduced by as much as **80%**
 - Reduced floor space at one location by **85%**

<http://www.ibm.com/ibm/responsibility/>

SEE BLUE. THINK GREEN.



www.ibm.com/software/green