Capitalize On The Power Of An IBM Solution
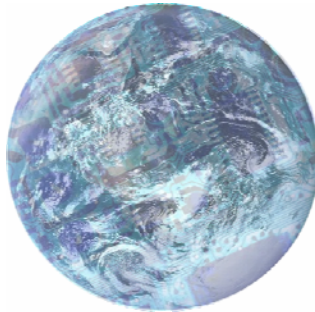
Smarter Planet Solutions

Smarter Planet And The Enterprise

- Every Enterprise has a tremendous investment
    - Capital
    - Physical Infrastructure
    - Information Technology
    - Employees, training and knowledge
    - Organization
    - Relationships with Partners, Customers and Suppliers
    - Millions and Millions of Dollars and Years and Years of Time
- "Smarter Planet" for the Enterprise is **Gaining More Business Value** from this investment
- Leverage Advancing Technologies that make the world more *interconnected, instrumented, intelligent*

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Something Meaningful Is Happening

*"Every human being, company, organization, city, nation, natural system and man-made system is becoming **interconnected, instrumented and intelligent.** This is leading to new savings and efficiency—but perhaps as important, new possibilities for progress."*

The world is getting smarter!

Consider How Our World Is Changing:
Our World Is Becoming More…

INTERCONNECTED
- 1/3 of the world's population on Web by 2011
- 4B mobile subscribers globally at end of 2010
- 37K cyber attacks in the US in 2007 (158% increase since 2006)

INTELLIGENT
- 15 petabytes of new information generated every day (8x more than the information in all U.S. libraries)
- 64B credit card transactions/year (up 35% YTY)
- New York Stock Exchange quote messages will be 400B/year by 2012 (up 900% from 2000)
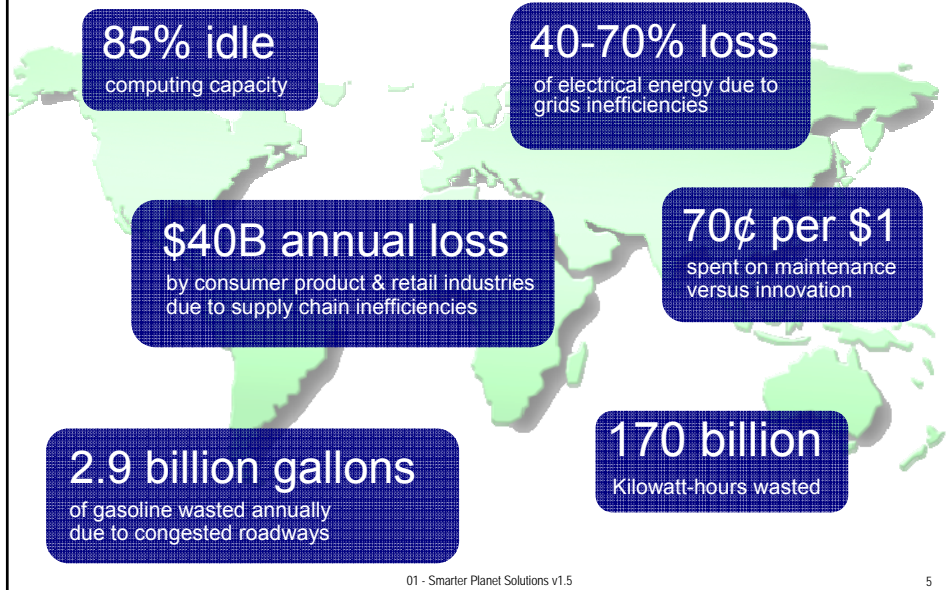
INSTRUMENTED
- 30 billion embedded RFID tags by 2010
- 1/2 of all sensors in transportation, facilities and production equipment are smart sensors

Despite Progress, Business and Government Need To Be Smarter Too

85% idle
computing capacity

40-70% loss
of electrical energy due to grids inefficiencies

$40B annual loss
by consumer product & retail industries due to supply chain inefficiencies

70¢ per $1
spent on maintenance versus innovation

2.9 billion gallons
of gasoline wasted annually due to congested roadways

170 billion
Kilowatt-hours wasted

Smarter Planet Solutions Can Help A Business Lower Costs And Be Agile

Imagine if… you could change the way your business operates in real-time to adapt to changing business conditions

What's New? Flexible Business Processes and business rules management

Why Now? Rigid, hard-coded business processes cannot adapt to changing conditions in time

Imagine if… you could bring all the right people together to collaborate and solve a problem – whether they were an employee, customer or partner

What's New? Smart collaboration that extends beyond the walls of your business

Why Now? Customer and partner demands for personalized solutions demand they be more involved than ever to deliver the most business value

Imagine if… you could discover meaningful insight, from the data you already have, to improve your business operations

What's New? Information services and analytics that collect and analyze trusted data

Why Now? A rapidly changing economy demands the ability to evaluate and act on opportunities quickly

IBM's Own Smart Transformation Has Delivered Results

New Intelligence
Smart Work
Dynamic Infrastructure
Green & Beyond

Profitability

Focus on Value

As a globally integrated enterprise, IBM has shared services functions and global centers of excellence -- integrated via common processes and platforms and guided by cross-company governance – that are unlocking additional productivity gains.

RESULTS:

- Shared services delivered more than $2.5 billion in productivity over the past three years (2005-07).
- Supply chain improvements deliver $3-5 billion savings annually.
- IT E/R has improved by over 2 points over the past five years.
- Green IT is reducing energy costs by 80%.

Growth

Exploit Opportunities

IBM is using state-of-the-art business analytics tools to identify demand globally and realign resources to the world's fastest-growing markets. We are bringing science to the art of decision making to help enable growth and optimize business performance.

RESULTS:

- New analytic tools identified nearly $8 billion in incremental revenue opportunity worldwide in 2008.
- Company grew through over 200 M&A transactions.

Cultural Change

Act with Speed

IBM has adapted to changing market conditions in good and challenging times. Our values-based culture and leadership is becoming pervasive in how we operate and behave, guiding our interactions with clients, communities and each other.

RESULTS:

- In the 2003 ValuesJam, IBMers worldwide redefined our values for a new era.
- Tens of thousands of IBM employees worldwide are active participants in advancing our values-based culture via collaborative technologies (Jams, Web 2.0 tools, etc.)

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Every Smarter Planet Solution Requires A Platform With Three Things

- Software capable of delivering an intelligent infrastructure
- Works synergistically with the hardware platform

Software

- High performance at a low price
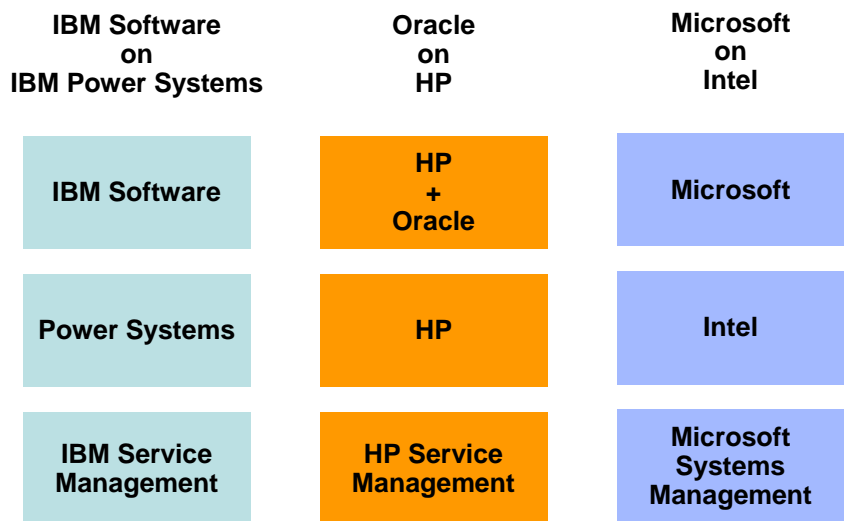- Ability to handle increasing workload requirements

Hardware

- Cloud-like virtualization for lowest cost per unit of work
- Best practices management

Deployment Strategy

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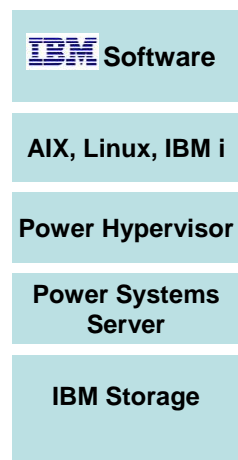
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Some Typical Platform Choices For Smarter Planet Solutions

IBM Software on IBM Power Systems	Oracle on HP	Microsoft on Intel
IBM Software	HP + Oracle	Microsoft
Power Systems	HP	Intel
IBM Service Management	HP Service Management	Microsoft Systems Management

IBM Offers An Optimized Stack From The Same Vendor

- Market leading Power Systems hardware
  - ▶ High Performance
  - ▶ Virtualization capabilities designed and built right into the hardware
  - ▶ Choice of operating system
- Virtualized storage
  - ▶ Reduces storage cost
  - ▶ Easier storage management
- Market leading software
  - ▶ Built on open standards
  - ▶ Optimized for Power Systems hardware
  - ▶ Best efficiency for small and large deployments
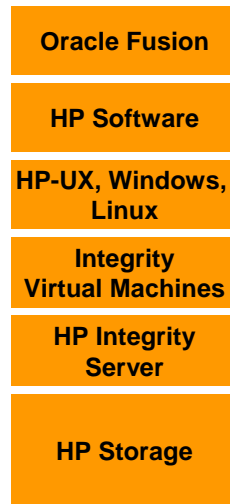- Large Java ecosystem

IBM Software

AIX, Linux, IBM i

Power Hypervisor

Power Systems Server

IBM Storage

Oracle On HP Offers A Mixed Environment

- Servers based on Intel Itanium™ processor
  - Slow chip troubled by production delays
  - Dependency on third party to keep processor competitive
  - Virtualization split between hardware and software
  - Integrity Virtual Machines is an add-on software hypervisor
- Virtualized storage
  - Reduces storage cost
  - Easier storage management
- Mixed middleware environment
  - HP Software limited to systems management and some development
  - Oracle Fusion Middleware missing capabilities
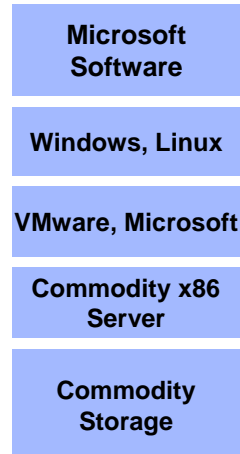 - Oracle database was not designed to scale on HP Superdome-like machine
- Mixed ecosystem

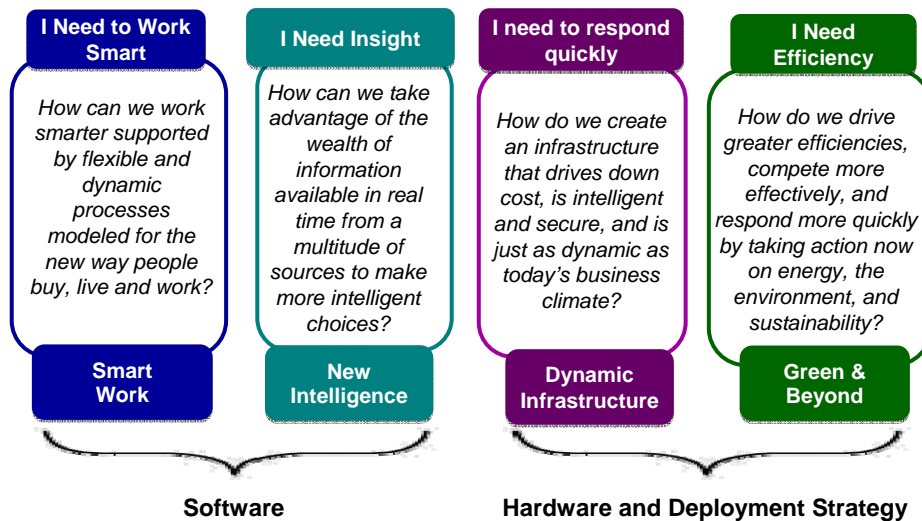| Oracle Fusion |
| HP Software |
| HP-UX, Windows, Linux |
| Integrity Virtual Machines |
| HP Integrity Server |
| HP Storage |

Microsoft On Intel Servers

- Commodity x86 hardware from many vendors
  - Scale-out model is the most costly to deploy
  - Operating system is limited to Windows
  - Add-on virtualization from VMware, Microsoft
  - Microsoft Hyper-V is immature and unproven
- Commodity third-party storage
- Microsoft software
  - Proprietary
  - Department-level environments
  - Reliant on expensive client-server designs
- Large Windows ecosystem

| Microsoft Software |
| Windows, Linux |
| VMware, Microsoft |
| Commodity x86 Server |
| Commodity Storage |

Smarter Planet Initiatives Address Software, Hardware And Deployment Strategies

I Need to Work Smart

How can we work smarter supported by flexible and dynamic processes modeled for the new way people buy, live and work?

Smart Work

I Need Insight

How can we take advantage of the wealth of information available in real time from a multitude of sources to make more intelligent choices?

New Intelligence

I need to respond quickly

How do we create an infrastructure that drives down cost, is intelligent and secure, and is just as dynamic as today's business climate?

Dynamic Infrastructure

I Need Efficiency

How do we drive greater efficiencies, compete more effectively, and respond more quickly by taking action now on energy, the environment, and sustainability?

Green & Beyond

Software

Hardware and Deployment Strategy

Work Smart On Power Systems With Flexible Business Processes

- WebSphere offers a suite of business process management capabilities
  - ▶ Web applications
  - ▶ Transaction processing
  - ▶ Business processing
  - ▶ Connectivity
  - ▶ Event handling
- WebSphere is optimized to run on Power Systems
  - ▶ Power Systems Java Virtual Machine
    - − 64 bit architecture, caches, shared classes, garbage collection
  - ▶ All WebSphere products benefit
- Delivers business processes that are web enabled, scalable, adaptable, flexible, connected, real-time and guard data integrity

Institute For Information Industry Works Smarter

- Business challenge
  - Manage genetic research projects and data
  - Processes adaptable to changing requirements
  - Scalable to meet future needs

- Solution
  - IBM Life Sciences Clinical Genomics Solution
  - SOA solution built on WebSphere® Process Server
  - Deployed on IBM Power Systems running AIX® 5.3
  - DB2® Enterprise v9
  - IBM Tivoli software

- Benefits
  - Provides the flexibility and extendibility needed to adapt the project to evolving user and expansion requirements

"The IBM solution offered the flexibility and scalability we need to quickly adapt to changing project requirements and parameters."
—Belinda Chen, Ph.D., Institute for Information Industry

財團法人資訊工業策進會
INSTITUTE FOR INFORMATION INDUSTRY

Work Smart On Power Systems With Enhanced Collaboration

- Lotus offers a suite of enhanced collaboration capabilities

  - Find expertise relevant to the task

  - Harness the knowledge in employees heads

  - Leverage Web 2.0 technologies

- Free productivity applications based on open standards keep costs low

- Effectively work in global virtual teams

  - Communicate instantly

  - Share any document

- Use flexible deployments on Power Systems to extend Smart Collaboration to customers, suppliers and partners

IBM Power And Lotus Domino 8 Deliver For Wison Group Holding Ltd.

WISON

Challenge:

Wison needed to better integrate and share information and activities across the whole organization.

Solution:

Wison implemented an open architecture solution using IBM Power Systems, Lotus Notes and Domino 8, and WebSphere Portal.

Headquartered in Shanghai, PRC, Wison Group Holding Limited (Wison) consists of several companies spread across the energy, heavy industry, chemical and development sectors.

The comprehensive IBM solution enabled Wison to leverage resources from each member company and integrate processes for the organization's complicated workflow and operations. The new platform simplifies future development while increasing flexibly to adapt to business changes and growth.

Create New Intelligence On Power Systems

- IBM Information Management offers a suite of new intelligence capabilities
    - ▶ DB2 is optimized to run on Power Systems
        - − Optimizations to exploit large page sizes, decimal floating point, storage protection keys
        - − Reconfigures database when processors or memory changed
        - − Recovery integration, first failure data capture
    - ▶ FileNet Captures unstructured content online
    - ▶ Gather all relevant information for the task at hand
        - − Real time federation or data warehouse
        - − Unstructured data
    - ▶ Analyze relevant data for actionable insight
        - − 100% browser-based tools take advantage of Power Systems performance
        - − Common view to relevant data
        - − Sharable assets for collaborative analysis

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New York City Police Department (NYPD)

- Business challenge
  - Provide the right information to the right people
  - Holistic view of crime data
  - Need analysis to lead to actionable intelligence
- Solution
  - Crime Information Warehouse (InfoSphere)
  - IBM Cognos Business Intelligence
  - Geographic Information System mapping tools
  - Power Systems servers
- Benefits
  - Officers and crime analysts can detect patterns as they are forming
    - Precinct commanders can now take proactive measures to keep ahead of these trends
  - Faster and higher rate of case-closing
    - More efficient gathering and analysis of crime-related data
  - Reports that could take weeks or months are now available instantly

"The NYPD's innovative policing strategies depend on our ability to gather, share and act on information. IBM—its people, partners and technology—have helped us redefine how information can be used to fight crime."

James Onalfo, Chief Architect and CIO, NYPD

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Create A Dynamic Infrastructure With Power Systems

- Run Smarter Planet solutions at the lowest possible cost
  - High performance servers lead the way
  - Efficient virtualization enables consolidation
  - Effective consolidation maintains high server utilization
- Deliver new computing services rapidly
  - Self-service provisioning options
  - Process and lifecycle management for system images
  - Provisioning in minutes rather than weeks
- Agile configuration options to respond to change
  - Add or remove resources dynamically
  - Move running partitions to different servers
- Tivoli service management software enables best practices operation

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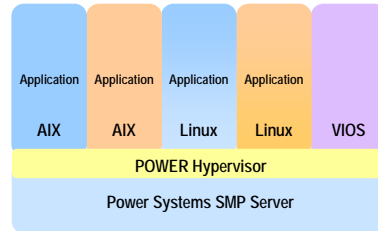
Virtualization And Consolidation On Power Systems

Dedicated Servers

Application
Linux

Application
AIX

Application
Linux

Application
Linux

Move workloads into Power Systems logical partitions

Consolidated images share resources on a single Power System

Application	Application	Application	Application	
AIX	AIX	Linux	Linux	VIOS

POWER Hypervisor

Power Systems SMP Server

Lower utilization
Higher cost
More electricity

Higher utilization
Lower cost
Less electricity per unit of work

IHI Corporation, Japan

- Business challenge
    - Upgrade server platform
        - Boost performance, cut costs
        - Reduce energy consumption
    - Improve server utilization
- Solution
    - Build a dynamic infrastructure through virtualization and consolidation
    - Consolidated 13 UNIX servers onto 2 Power Systems servers
    - Deployed IBM System Storage™ DS6800 with Tivoli Storage Manager
- Benefits
    - 40% reduction in power and cooling costs
    - 30% reduction in total IT costs annually
    - Carbon emissions reduced by 30 tons per year
    - IT server performance nearly doubled

IHI Corporation is a leading Japanese manufacturer in energy production, marine transportation, aerospace and environmental technologies.

IBM Software On Power Systems

- Open and complete software optimized to run on Power Systems

- Best price performance
- Best performance per watt
- Flexible virtualization for consolidation

- Rapid, automated provisioning
- Agile, adaptable deployments
- Best practice management at a low price

IBM Software

AIX, Linux, IBM i

Power Hypervisor

Power Systems Server

IBM Storage Virtualization

Equals An Unbeatable Combination!

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So How Will These Competitors Compare?

Capability	IBM Software Power Systems	ORACLE hp	Microsoft intel
Flexible Business Processes	✓	?	?
Smart Collaboration	✓	?	?
New Intelligence Foundation	✓	?	?
Deliver New Intelligence	✓	?	?
High Performance	✓	?	?
Virtualized for Consolidation	✓	?	?
Dynamic Infrastructure	✓	?	?
Easily Managed	✓	?	?

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Service Oriented Finance Needs Smarter Solutions

The current situation is forcing us to change the way we do business. Our systems must keep up!

She just cut my budget last week.

Service Oriented Finance CEO

Service Oriented Finance CIO

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Agenda

- Smarter Planet Solutions
- Power Systems Lead The Way
- WebSphere's Flexible Business Processes Provide A Smarter Approach For Businesses

Break

- Smarter Collaboration With Lotus Leads To Better Business Decisions
- Create New Intelligence With IBM Information Management Solutions

Lunch

- Build A Dynamic Infrastructure On Power
- Leverage Tivoli Solutions for Chargeback In A Dynamic Infrastructure
- IBM Middleware On Power Systems Is The Unbeatable Combination

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And We Are Doing Better

AIRBUS: Implemented an integrated, end-to-end, highly instrumented supply chain using RFID and automatic identification (AutoID) technologies across all business processes enabling 100% automation of data entry resulting in 75% reduction in physical handling of parts, which saves on labor

DONG Energy: Installed remote monitoring and control devices to gain an unprecedented level of information about the current state of the grid, lessening outage times by a potential 25 - 50% and up to 90% capital savings

Irish Life: Built a customer-centric hub that provides a real-time, 360 degree view of customers, enabling employees to quickly identify cross-selling opportunities and giving customers easy access to their account information. Reduced duplication and conflicting views of client base by 30%.

Matiq: Employs RFID tags to trace meat and poultry from the farm, through the supply chain, to supermarket shelves to ensure safety and freshness and provide more transparency to consumers

More Examples

mobilkom austria: Wireless carrier speeds delivery and improves customer service with implementation of IBM's Service Provider Delivery Environment (SPDE). Time to market of new services has been reduced by 30 – 50%.

DTE Energy: Increased utilization of facilities from consolidation, redesign, and standardization of business systems using SOA technologies, Solution Architecture Framework for Energy (SAFE), and Tivoli Maximo software results in projected $75M annual operational cost savings.

StatoilHydro: Intelligent Oilfield, based on IBM's Integrated Information Framework (IIF), links advanced real-time sensor capabilities in the field to powerful analytical capabilities resulting in 5% increase in oil and gas production & 30% reduction in costs resulting from monitoring and maintenance

Duke Medicine: The Duke Healthview portal, based on IBM's Health Integration Framework (HIF), offers a single user interface for patients and physicians to access information from multiple applications and environments.

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