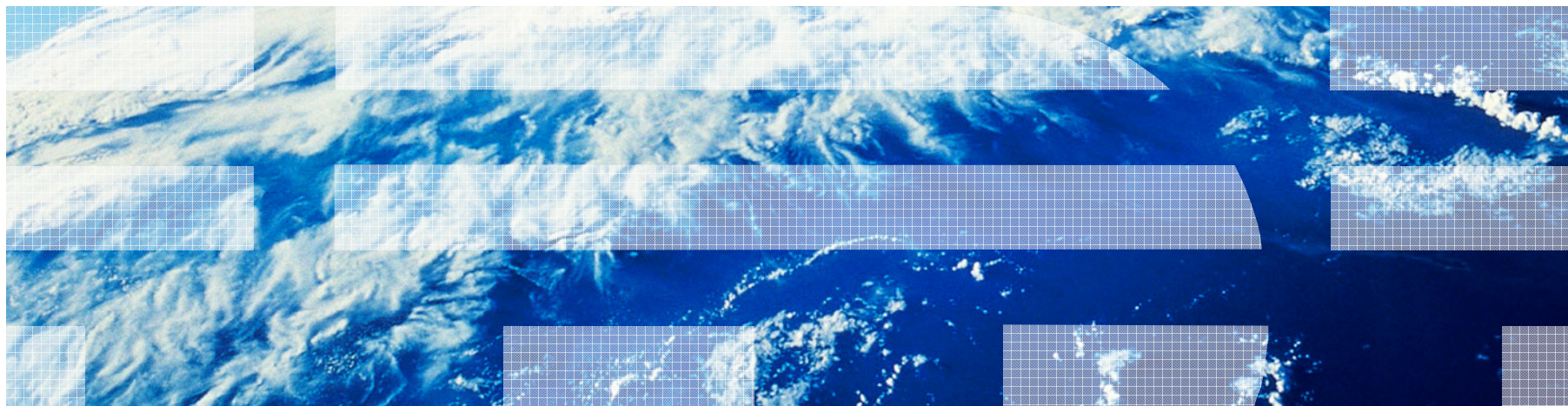




YOU can BUILD a SMARTER PLANET

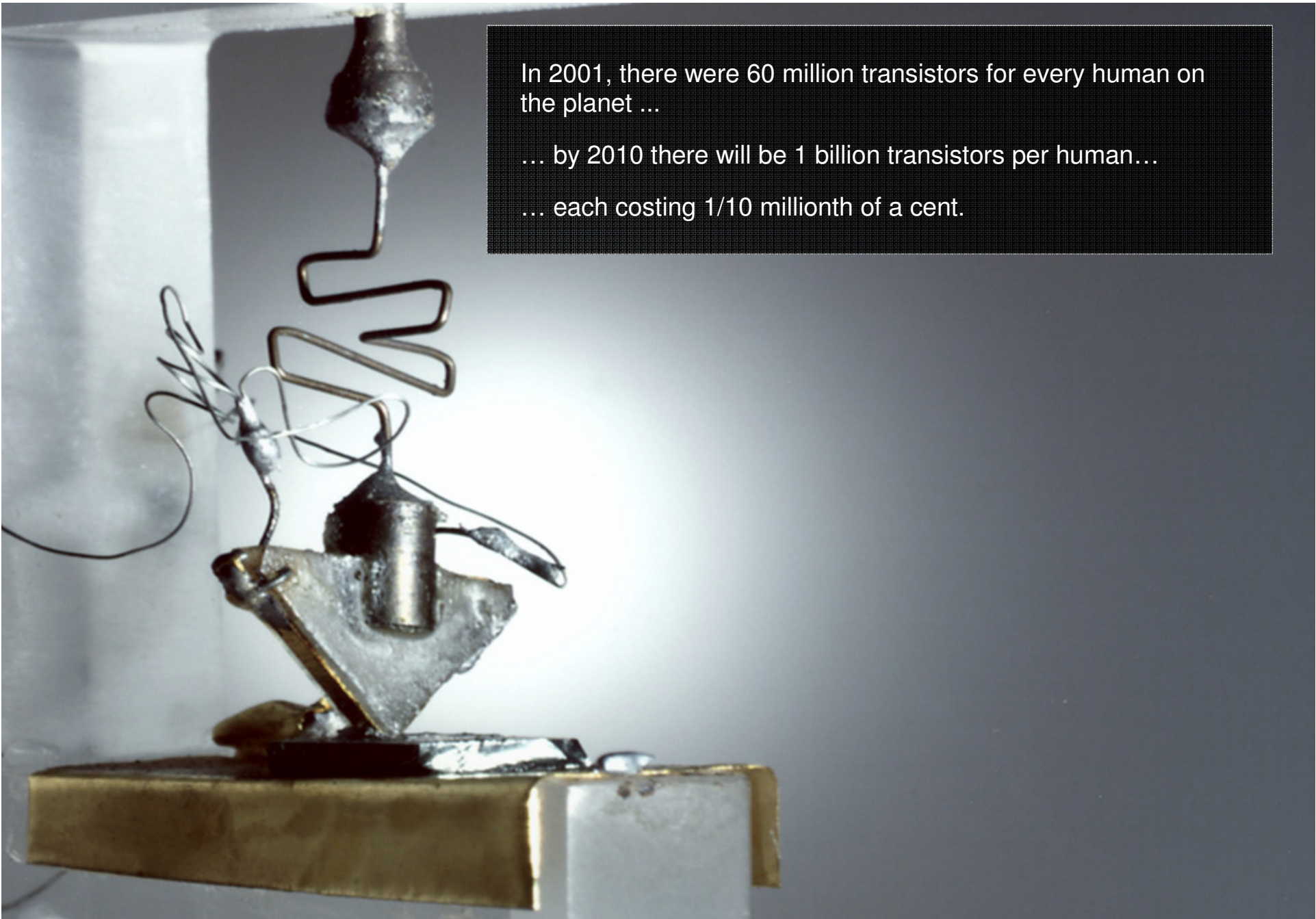
Jenny Li

IBM STG CTO for Energy and Utility, IBM Master Inventor



Aug 31, 2009

Copyright 2009, IBM



In 2001, there were 60 million transistors for every human on the planet ...

... by 2010 there will be 1 billion transistors per human...

... each costing 1/10 millionth of a cent.

The background of the slide consists of three overlapping, slightly offset images of a white RFID tag. Each tag is surrounded by a complex, concentric pattern of copper-colored lines, which is the antenna. The tag itself has a small square chip in the center and a metal contact pad on the left side. The text is overlaid on a dark, semi-transparent rectangular area in the upper right portion of the image.

In 2005 there were 1.3 billion RFID tags in circulation...

... by 2010 there will be 33 billion.



Worldwide mobile telephone subscribers were 450 million in 2006 . It reached 3.3 billion in 2007 and more than 4 billion subscribers as we speak.

300 million users (about 7%) being mobile social network users. The number is predicted to grow steadily to 950 million mobile social network users by 2012.

An estimated 2 billion people will be on the Web by 2011 ...

... and a trillion connected objects – cars, appliances, cameras, roadways, pipelines – comprising the "Internet of Things."

Browse

What do all these mean?

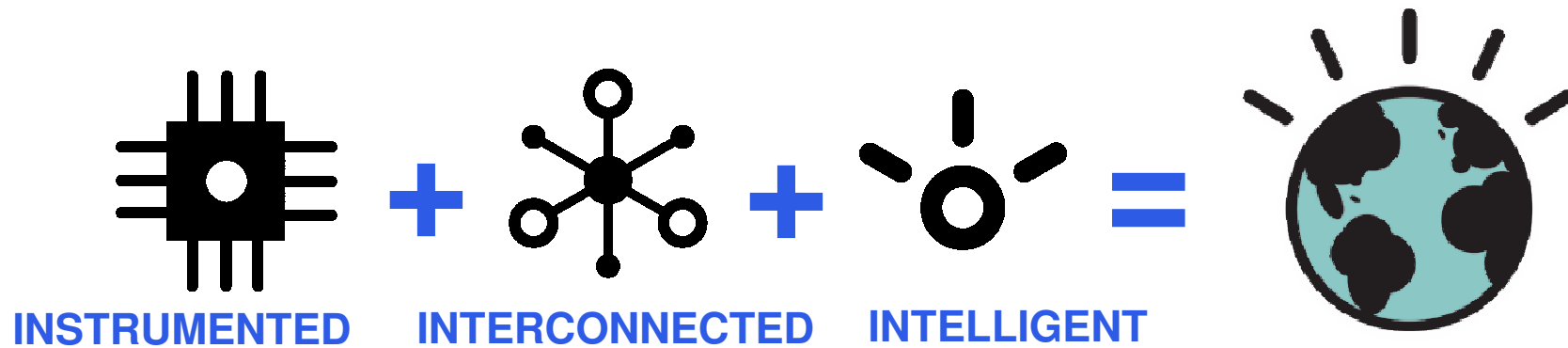


The digital and physical infrastructures of the world are converging.

For the first time in history, almost anything can become digitally aware and interconnected.

We've only just begun to uncover what is possible on a smarter planet.

Smarter Planet – IBM's vision



An opportunity to **think and act in new ways**—
economically, socially and technically.

IBM Smarter Planet Focused Areas

ibm.com/smarterplanet

 Energy	 Traffic	 Food	 Infrastructure	 Retail	 Intelligence	 Stimulus
 Banking	 Telecom	 Oil	 Healthcare	 Cities	 Water	 Public safety
 Buildings	 Work	 Rail	 Products	 Education	 Government	 Cloud computing

Smarter Energy



Government Regulatory Mandate



▪ George Bush – Columbus Ohio – 10 March 2005

- “We're also applying practical technology to help Americans make better choices about energy consumption. We want to help you make good choices so you become better conservers of energy. **Devices called smart meters show how much energy you're using and then calculate exactly what that energy is going to cost you.** Seems like a practical idea, doesn't it? Here's what you're using, if you use it at this hour, this is what it costs. It'll help you plan. It'll help you better conserve. It'll give you incentives to turn off the lights the next time you leave the room.”

▪ U.S. Stimulus Plan For Smart Grid

- The plan includes \$32 billion to transform the nation's energy system, **\$4 billion for the smart grid.** Funds are anticipated to allow for a smarter and better electric grid. Investment is focused on renewable technology. \$6 billion is expected to be used to bring broadband and wireless service into more widespread use.

Market Forces

Driving Utilities Companies to Seek New Approaches and Business Models



Market Assessment



■ North America

- As of June, 2007, almost 50% of US States have utilities with some smart metering pilots or installations
- Global smart metering investment through 2010 will be in excess of \$13B. An estimated 89% in North America by 2012.

■ Europe

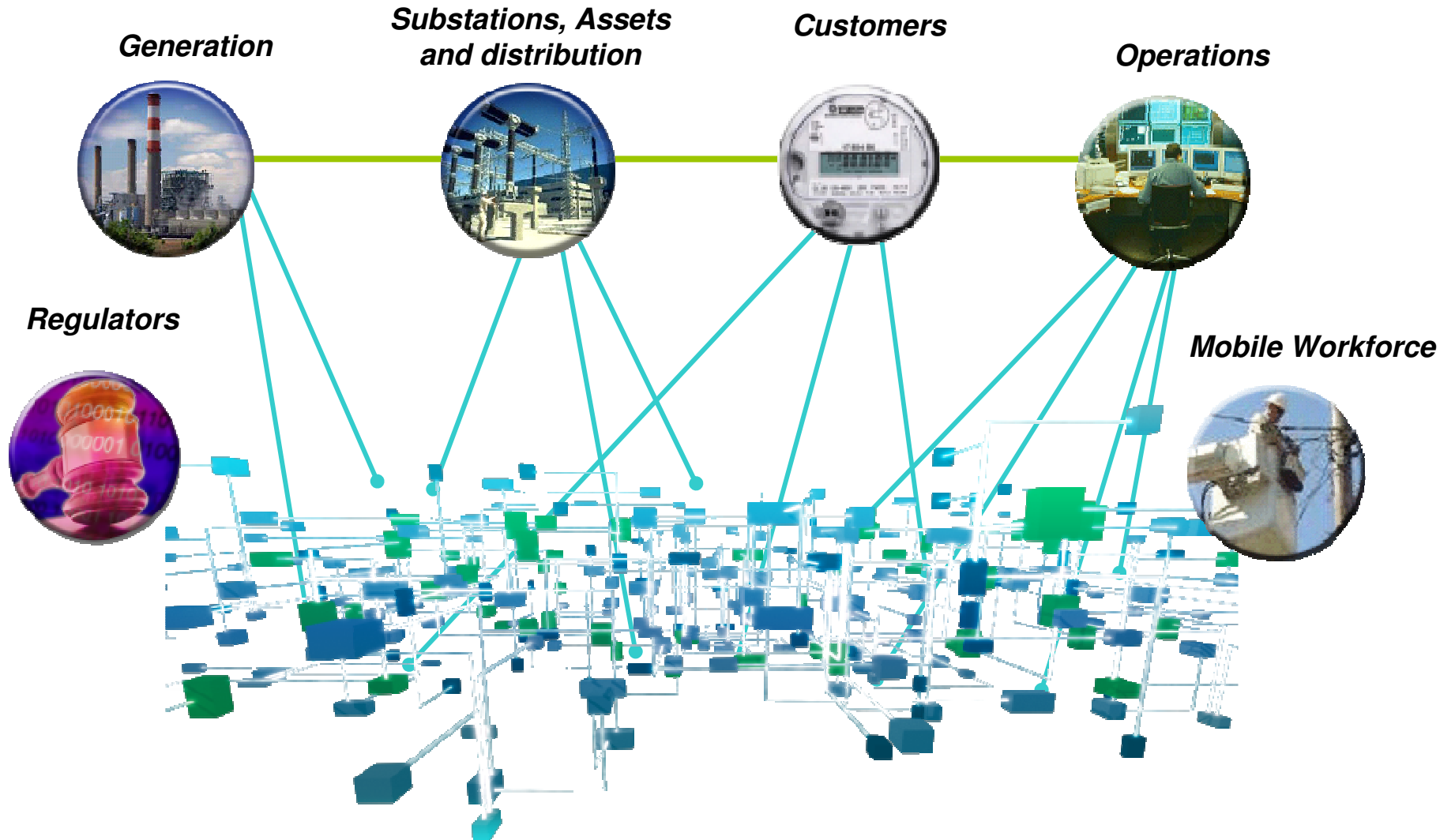
- The smart metering industry will experience an estimated 41% increase in Europe by 2012

■ Asia Pacific

- Asia market demand for electrical meters will grow to \$1.6B annually by 2010; global market demand will grow to \$3.6B
- 48% of the global meter population is installed in Asia; 57% of the world's meter demand is in Asia
- China accounts for 68.5% of the region's demand; India 14.4% and Japan 7.6%

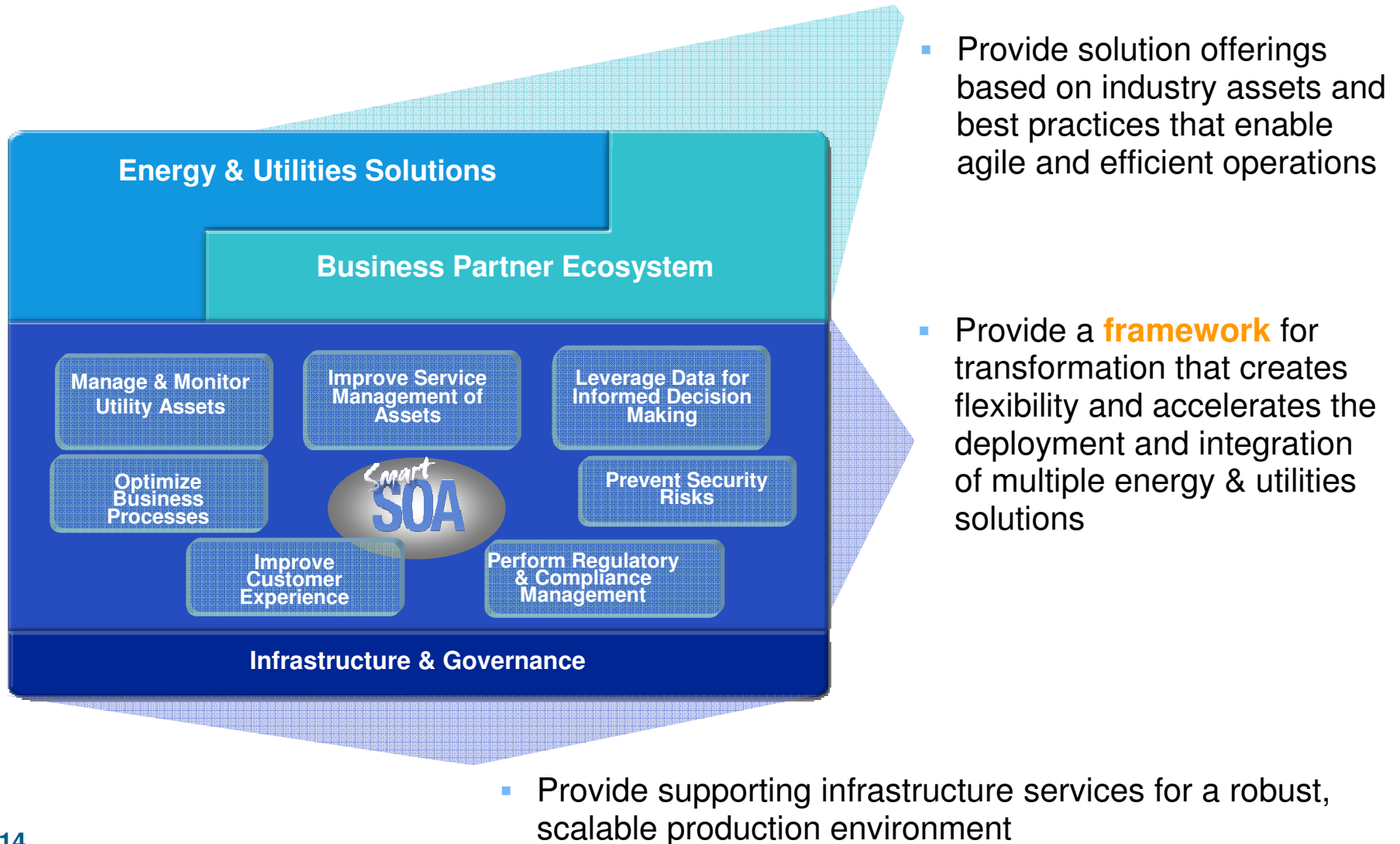
Addressing the dynamics in the Energy & Utility Industry

Need for a flexible and scalable infrastructure



The IBM Energy & Utilities Industry Strategy

Clearly Links Business and IT to Enable New Capabilities



Advanced Meter Management

One of E&U strategic capabilities

- **Replace old meters with smart meters**

- Providing two-way communication with the Smart Grid
- Enabling automatic data collection
- Providing timestamps for consumption



- **Utility companies can monitor and analyze usage of energy**

- Leverage data for informed decision making
- Optimize power generation and distribution
 - Provide time-of-use (TOU) information
 - Determine peak usage of the day
- Providing new and flexible services to customers such as “time based” rates

Future Trend

- **Emerging Standards**

- The International Electrotechnical Commission (IEC) 62056 series of standards are global standards for electricity metering including data exchange for meter reading, tariff, and load control.

- **Integrate multi-utility solutions:**

- some utility companies provide multiple utilities (electrical, water, heat, etc)
- use a single infrastructure effectively to support multiple utilities, therefore, lowering the total cost of ownership.
- Customer can get a single bill for multiple utilities from the same company.

- **Integrate smart meters with home area network (eg ZigBee)**

- For example, utility companies can send a command/notification to their consumer's thermostat or air conditioner to turn down the temperature to prevent utility grid from reaching the peak capacity and unplanned outages.

Smarter **Public Safety**

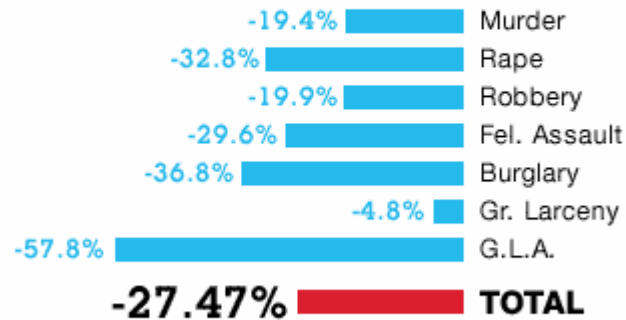


Public Safety is a Critical Factor in Economic Viability

- By 2050, nearly three quarters of our planet will live in cities.
- Q: How do people determine which city to live?

NYPD Historical Perspective

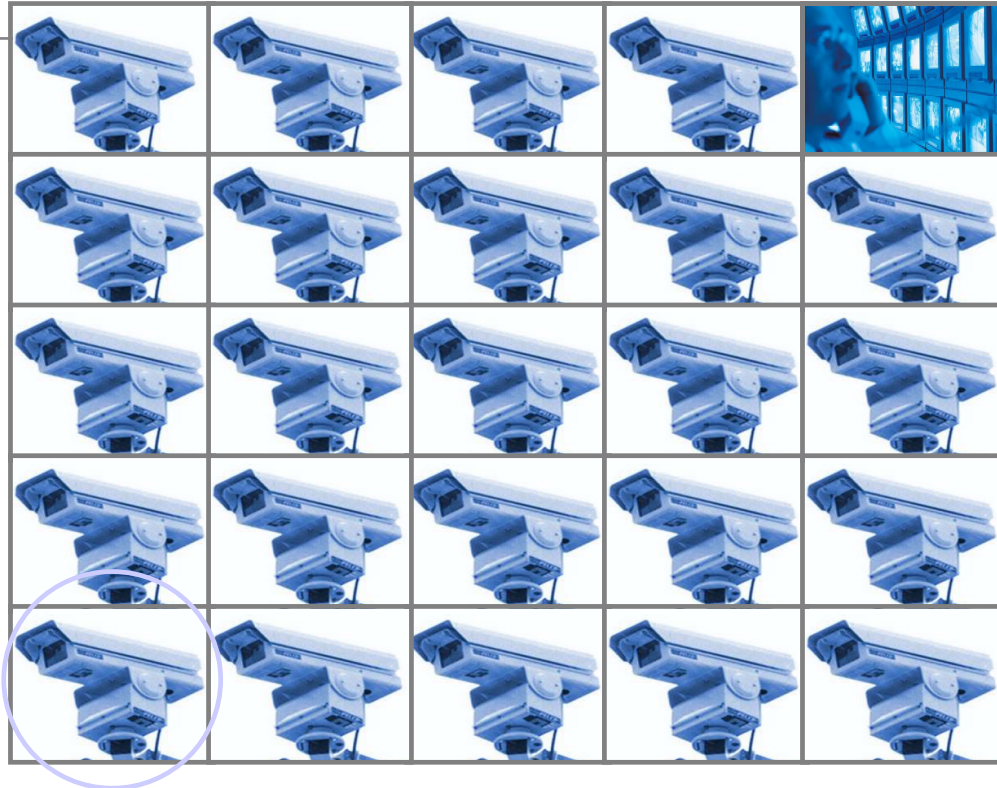
% of change in crime rates 2008 vs 2001



Police Department, City of New York Compstat, Mar 9, 2009-Mar 15, 2009



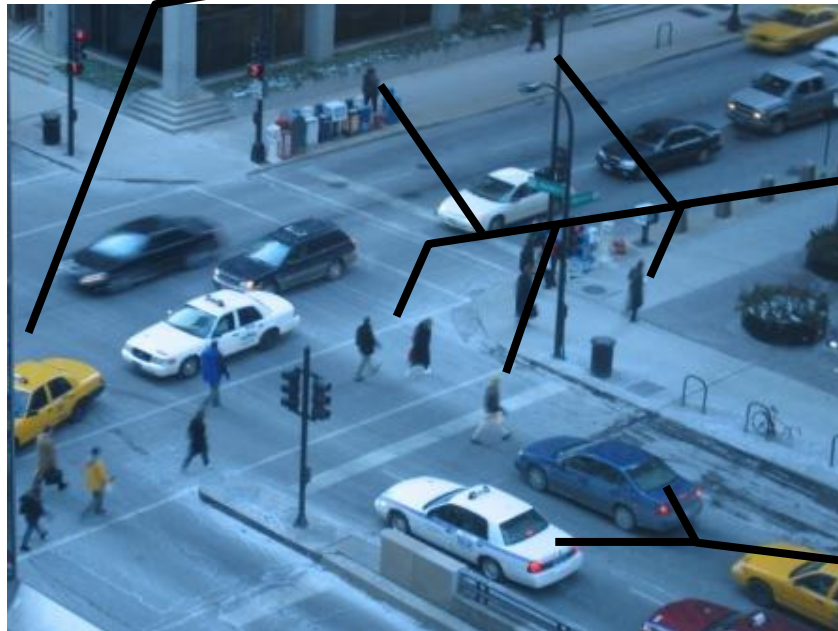
Traditional Video Surveillance



- Challenge of existing video solution:
 - Analog cameras + manual human monitoring
 - Inefficiency in 'Human eye' surveillance (2 cams, 22+ min, efficiency drops 95%)
 - More cameras => more content. But not enough staff to manage the increase of data.

Emerging Uses of Video Analytics

Video Analytics in Action Before, During, and After an Incident:
 Effective Decisions Powered by Seeing and Finding Events More Quickly, More
 Coherently



- Yellow car eastbound turn L**
- White car eastbound turn L**
- Black car eastbound straight**
- Black car eastbound straight**
- .
- .
- .
- Person north on sidewalk**
- Person west on crosswalk**
- Person west on crosswalk**
- Person north off crosswalk**
- Person south on sidewalk**
- Person south on sidewalk**
- .
- .
- .
- Blue car southbound stop**
- White car southbound stop**
- Yellow car southbound stop**
- Red car southbound stop**

Sample Analytics Usage Scenarios

- **Retail Loss Prevention Applications:**
 - Grab and Go event detection
 - Potential theft event detection
 - Fraudulent return detection.
 - Repeat offender detection.
 - Associate monitoring at POS.
 - Tracking person across multiple cameras
- **Retail Business Intelligence:**
 - Line length monitoring at check outs.
 - Inventory level monitoring.
 - Counting people at entrances and exits.
 - Monitoring display effectiveness
 - Unattended customer detection.
 - Demographics applications.
- **Homeland Security Applications (Airports, Subways, Seaports, Critical Infrastructure, etc)**
 - Virtual perimeter monitoring
 - Tailgating
 - Abandoned objects
 - Entry thru exit doors, etc
 - Face capture & recognition, etc
 - Post incident video indexing and search
 - Intelligence Applications
 - Unusual activity (scouting) detection
- **Manufacturing Inspection & Safety Applications**
 - Potential collision detection.
 - Unattended machinery detection.
- **Macro time and motion studies.**
 - Defect detection.
 - Casino Gaming Applications
 - Detecting suspicious movements at a gaming table.
 - Tracking customer movement thru the casino.
 - Identifying High-rollers and problem gamblers.
- **Financial Sector Applications:**
 - Facility monitoring
 - Activity monitoring at branches.
 - Monitoring cash handling activities.
 - ATM security – fraudulent event detection
- **Mobile Surveillance Applications:**
 - School bus safety and security.
 - Delivery truck safety and security
 - Assisted Living Applications:
 - Detect slip and fall events.
 - Inactivity events.
 - Wandering out of facility events.
 - Long term activity profiles.
- **Sports & Entertainment Applications**
 - Enhanced visualizations of player and ball trajectories
 - Fine grained movement statistics for players

IBM Smart Surveillance Solution (SSS)

- SSS provides an open and extensible analytic framework for developing event-based video surveillance applications. It supports the following features and capabilities:
 - Integrated video management
 - **Real-time** video analytics
 - Video meta-data indexing and search
 - Event cross correlation
 - Advanced event visualization
 - Open framework for integrating sensors and events streams
 - Advanced system management capabilities



IBM Smart Surveillance Solution Key Differentiators

Functionality from most vendors

Real Time Alerts

- Motion Detection
- Directional Motion
- Trip Wire
- Abandoned Object
- Object Removal
- Camera Move / Blind

- Transaction system integration
- People counting
- Conversion rates
- Traffic flow
- End cap/display effectiveness
- Hot spots

- Full Index of Video
- Database of data on every event
- License Plate Recognition
- Automatic Face Capture
- Statistical Alerting
- Web-based Event Search over Months of Events
- **Retrieve events by Duration, Object Type/Size/Color, Object Location in Scene, License Plate Number**

Web Based Statistics

- **Find distributions of objects over time.**
- Cross Correlation of multi-sensor events
- Extensible Meta-data schema
- Plug & Play Analytics
- Centralized Monitoring over existing networks
- Very flexible and highly configurable bandwidth management

IBM and SSS Functionality

SSS and Sample Scenario



Map with Cameras

Real-time Alerts

SMART SURVEILLANCE SOLUTION

Welcome pvuser

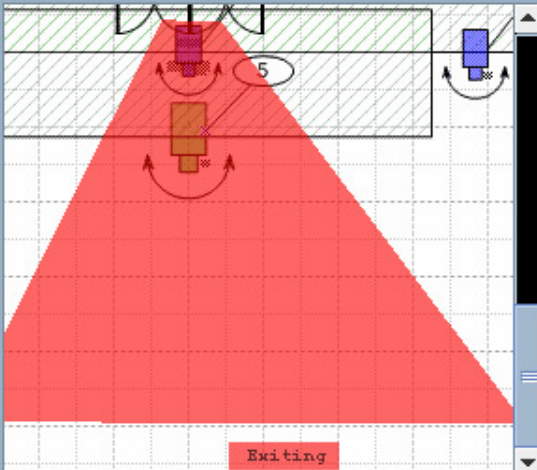
HOME

ALERTS

EVENTS

LOGOUT

MAPS



SEARCH

THUMBNAILS

TRACK SUMMARY

STATS

HEATMAP

INSTANT ALERTS

Main Ent... Exiting 2007-10-16 18:03:14	South Hall Crossing... 2007-10-16 18:02:42	Main Ent... exiting 2007-10-16 18:01:43	Main Ent... exiting 2007-10-16 18:01:13	South Hall Crossing... 2007-10-16 18:00:26	Main Ent... exiting 2007-10-16 18:00:16
--	---	--	--	---	--

7:00am 7:00pm

EVENT SEARCH RESULTS

51 events available for Main Parking Lot

Page 1 of 1 [Goto page](#)

Live Video

Event Search Results - Red Cars



 2007-10-16 18:01:06 [2.73s] ARCHIVE	 2007-10-16 17:47:04 [9.02s] ARCHIVE	 2007-10-16 17:26:32 [3.58s] ARCHIVE	 2007-10-16 17:11:53 [8.77s] ARCHIVE
--	--	--	--

 2007-10-16 16:10:04 [9.03s]	 2007-10-16 13:16:25 [4.84s]	 2007-10-16 11:24:02 [5.45s]	 2007-10-16 10:17:44 [3.02s]
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Chicago Virtual Shield is equipped with IBM Smart Surveillance Solution

http://abclocal.go.com/wls/story?section=news/national_world&id=6138580



Future Trend

- **Physical security + Call Center Dispatch System**

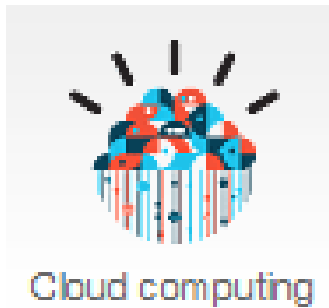
Chicago's Surveillance Cameras: Crime Fighting or Big Brother?

February 23, 2009 in Uncategorized | Tags: big brother, chicago, crime prevention, public safety | by crblogger

According to the [New York Times](#), Chicago recently tied the city's camera network into its 911 dispatch system. Now, when a 911 call comes in, dispatchers can see the scene of the crime as long as the caller is within 150 ft. of a camera.

- **Physical security system + security system + others**
 - Eg. DVS + Custom and Border Management
- **Extend the infrastructure to work with any existing and future wireless network** (MESH, cdma, etc)

Smarter **Cloud Computing**



What is Cloud Computing

People, Data, Insight, Management – Connecting a trillion dots!



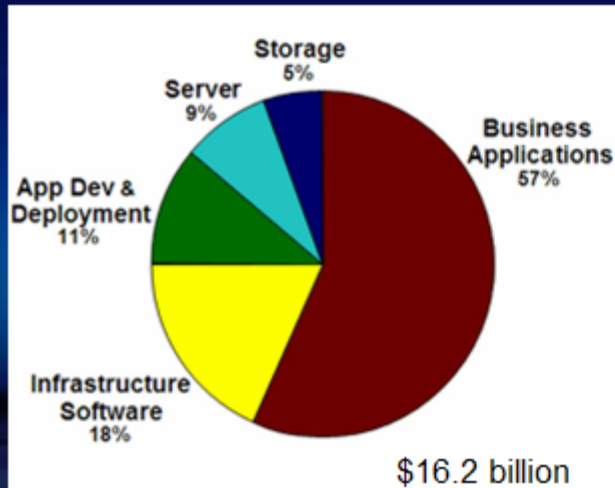
Cloud computing is a means of **providing service delivery** for consumer and business needs in a **simplified way**, providing **massive scalability** and differentiated **quality of service** to **foster rapid innovation** and **decision making**. If properly used within an overall IT strategy, can help improve business performance and control the costs of delivering IT resources to the organization.

Lower costs.
Improve service delivery.
Enable business innovation.

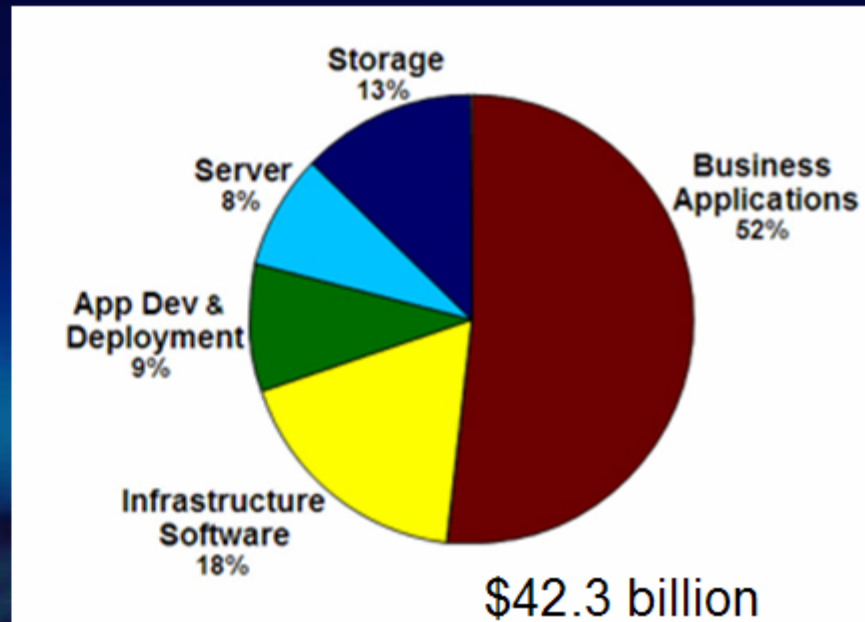
Market Assessment

Worldwide IT Cloud Service Spending* by Product/Service Type

2008



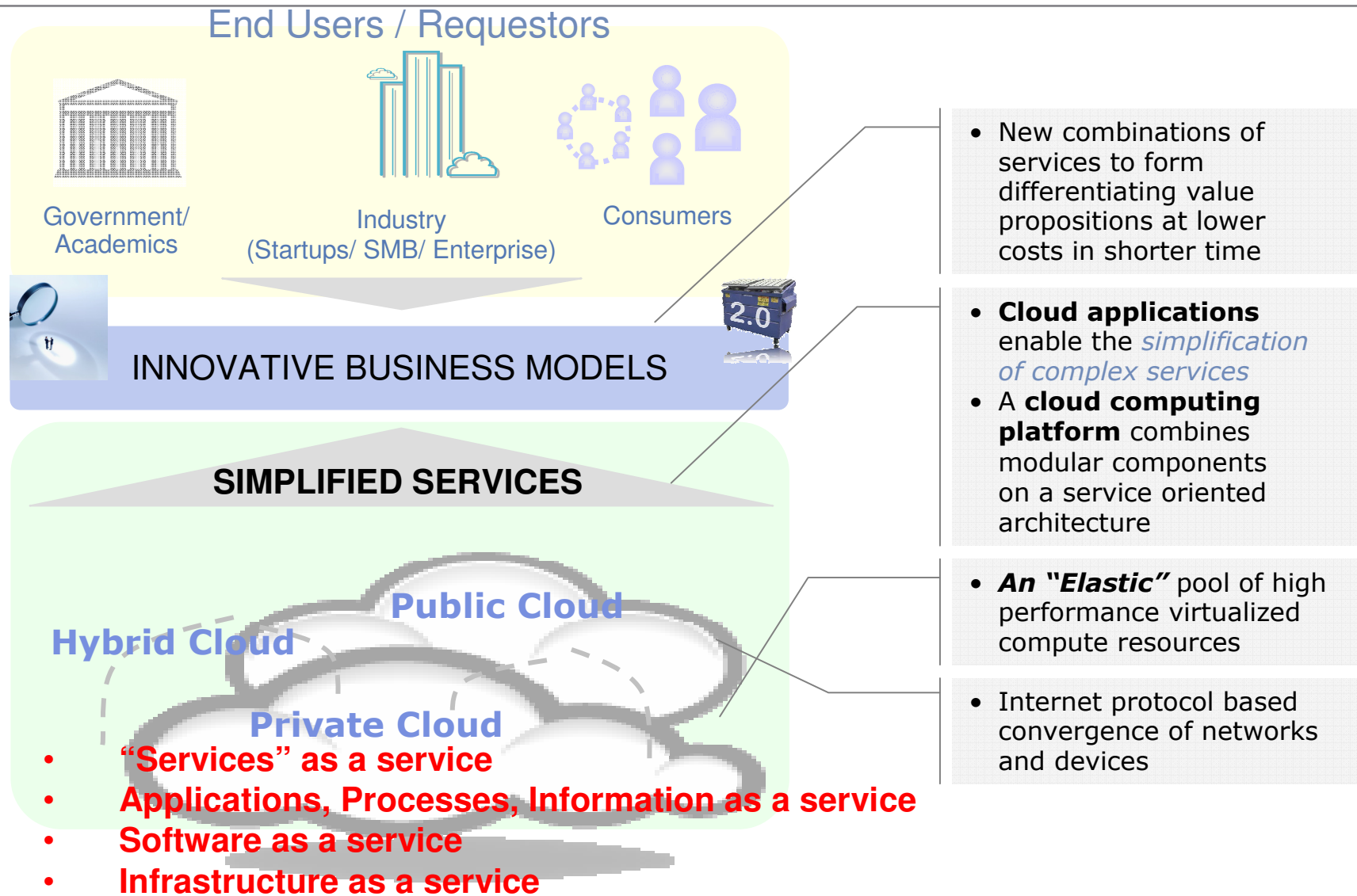
2012



* Includes enterprise IT spending on Business Applications, Systems Infrastructure Software, Application Development and Deployment Software, Servers and Storage

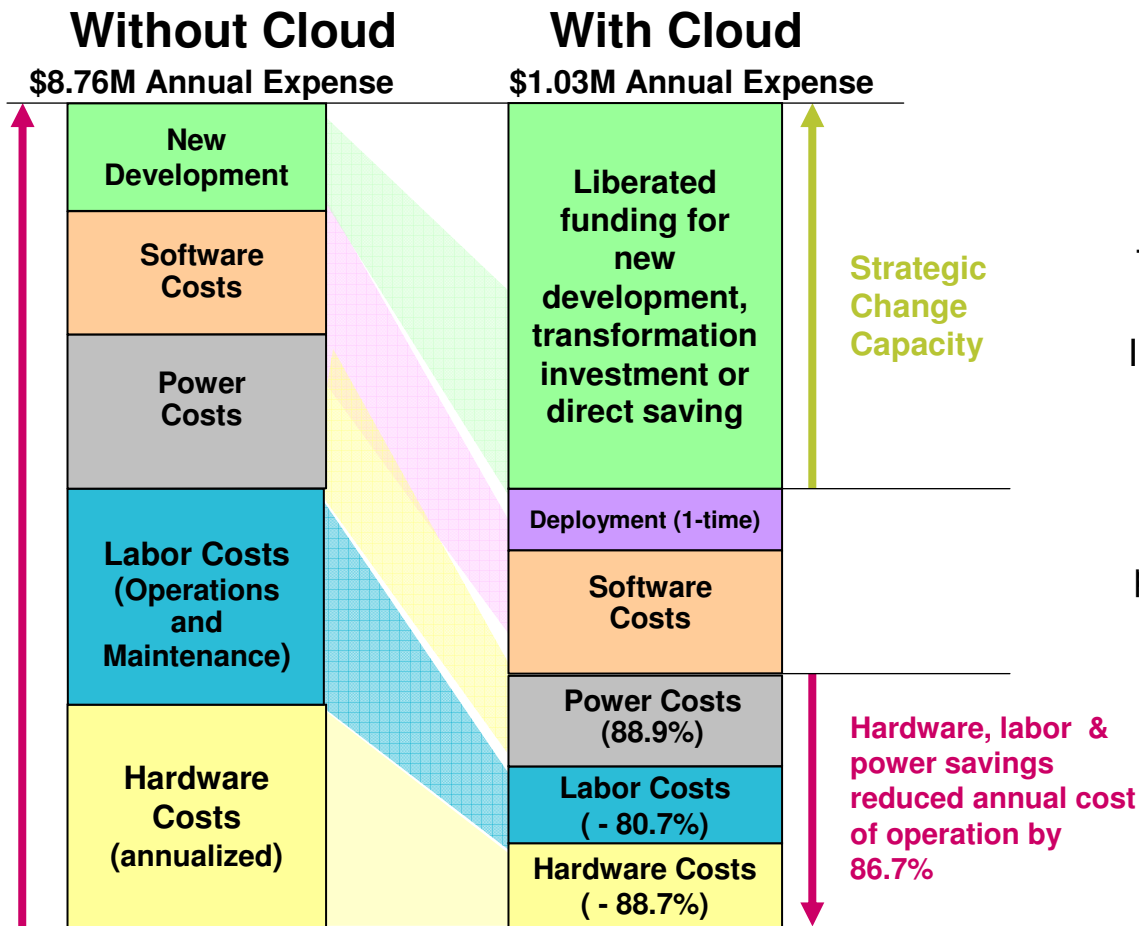
Source: IDC, October 2008

A Closer Look at Cloud Computing



Cloud Computing Example

IBM's Technology Adoption Program (TAP) drives innovation and optimization of expenses



This “collaboration innovation cloud” has over 80,000 participants within IBM working together to develop new innovations in software, process tools, and assets. In 2007 alone, there were more than 70 active innovations and 27% became IBM products or solutions that are sold to our customers today.

Note: 3-Year Depreciation Period with 10% Discount Rate

IBM Cloud Computing Offerings

www.ibm.com/cloud

- **Development and Test Workload Offerings**
 - IBM CloudBurst™
 - IBM Smart Business Test Cloud

- **Desktop Workload Offerings**
 - IBM Smart Business Desktop Cloud

- **Collaboration Workload Offerings**
 - IBM LotusLive™

- **Infrastructure Services Workload Offerings**
 - IBM Computing on Demand (CoD)™

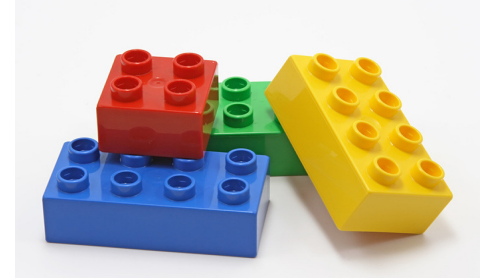
- **Business Services Workload Offerings**
 - Business Continuity and Resiliency Services

Initial implementation with IBM CloudBurst™ QuickStart Services

www.ibm.com/cloud

Private Cloud platform is up and running in days. It includes:

- Pre-packaged factory installed hardware and software
- Rapid implementation of platform
- Training and knowledge transfer



Installation and configuration	<ul style="list-style-type: none"> ▪ Deploy and integrate BladeCenter hardware in customer data center and network ▪ Configure local storage area network ▪ Configure users and security profiles ▪ Configuration and discovery of virtualized compute, network and storage resources ▪ Configure self- service portal ▪ Platform verification
On-Site introductory Training	<p>Overview and hands-on platform training including topics like:</p> <ul style="list-style-type: none"> ▪ BladeCenter, local SAN and network switch management ▪ Administrator and user level training

IBM Smart Business Test Cloud

www.ibm.com/cloud

A secure, private cloud environment clients can use to test applications before sending them to production

- Creates a more efficient test environment that improves productivity and reduces costs
- Includes an operating system, middleware, storage, network and virtual images, along with pre-integrated set of services from planning through implementation
- Clients can leverage their existing systems or IBM's new CloudBurst™



Customer Benefits:

- Reduce IT labor cost by 50 percent - reduce labor for configuration, operations, management and monitoring of the test environment
- 75 percent capital utilization improvement; significant license cost reduction
- Reduce test provisioning cycle times from weeks to minutes
- Reduce risk and improve quality- eliminate 30 percent of all defects that come from faulty configurations

Jan 15, 2009 - IBM has announced its intent to acquire strategic messaging service assets of Outblaze, Ltd.

- IBM intends to expand into new markets, increase market share and continue its momentum as the world-wide leader in collaboration
- Proven multi-tenant web-based email & calendar services
 - Over 10 years of experience in client deployments
 - Over 40 million mail users
 - Available in 22 languages
 - Unique branding and multi-tiered administration model
- The Outblaze messaging service will be part of IBM Lotus' Project "Bluehouse."
 - "Bluehouse" is IBM's online social networking and collaboration service designed for business and currently in open beta (<http://bluehouse.lotus.com>)
 - Within the service people can share files, chat, participate in online meetings and network over the Web.

Introducing LotusLive

LotusLive Overview Features Demo Trial Join Meeting Log In

Working together just got easier

Online collaboration solutions for the working world

LotusLive is your place for online collaboration services.
Discover, Connect and Interact.

[Try](#) [Buy](#) [Learn More](#)

- Networking & Collaborating**
Browse services designed to help you network and collaborate without boundaries.
- Web Conferencing**
Browse services offered for online meetings, webinars and event management.
- E-mail**
Learn about the LotusLive e-mail services.

Visit our demo gallery to watch some of our most popular services in action.
[View LotusLive Demos](#)

Browse our image gallery to see LotusLive offerings and capabilities.
[View Image Gallery](#)

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Solutions

Purchase
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Trials

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Business Partners
About our Program
Register Interest

Support
Support Resources

Lotus Customers
About LotusLive
Services

LotusLive Offerings

Web Conferencing



Lotus Live Meetings

(Sametime Unyte Meeting)

Full-featured Web conferencing service includes polling, hand raising, record & playback.

- Supports G1 languages



Lotus Live Events

(Sametime Unyte Events)

Internet-based event capabilities. Provides tools to create & manage webinars.

Collaboration



Lotus Live Engage

("Bluehouse")

An integrated suite of Web collaboration and business networking solutions including:

- On line Meetings
- Survey Forms
- Files
- Live Charts
- Chat service
- Profiles and Contacts
- Activities



Lotus Live Connections

An integrated suite of Web collaboration and business networking solutions including:

- Files
- Profiles and Contacts
- Chat service
- Activities

eMail



Lotus Live Notes

(Lotus Notes Hosted Messaging)

Full-featured, dedicated hosted Email service. (rich client and browser)

- Supports 27 Languages

Additional Add-ons

→ LotusLive Mobile for Blackberry

→ LotusLive Sametime IM



Lotus Live iNotes

Web-based Email service with personal calendar & shared contacts. Mobile sync capability.

THANK YOU
Your thoughts?

