Linux in a Private Cloud with Social Business on System z

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Business Unit Executive
WW Messaging and Collaboration Sales
IBM Collaboration Solutions

Mike Wojton
Social Business for System z
ATS North America

Get Social. **Do Business.**

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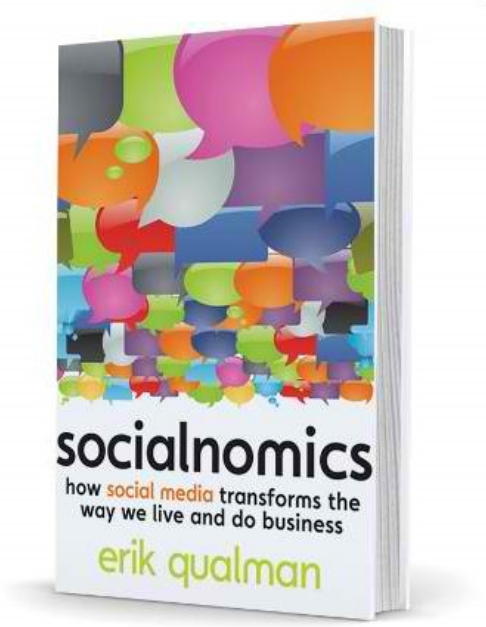
SocialNomics



- "How Social Media Transforms the Way We Live and Do Business" -- Erik Qualman

http://www.youtube.com/watch?v=x0EnhXn5boM

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The world is changing, and becoming more…

Instrumented
smartphone shipments will outpace PCs by 2012

Interconnected
social networking accounts for 22% of all online time

Intelligent
the social data analytics opportunity will grow to 1 Zettabyte by 2011

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These changes demand a new approach.

Analytics

Help clients turn data into information and information into insight that drives ***smarter business decisions***

Systems Thinking

Need to acknowledge that complexity comes from interconnected systems – a ***system of systems***

Collaboration

Enterprises can use social software to get closer to their customers, but must also transform internally, to become ***social businesses***

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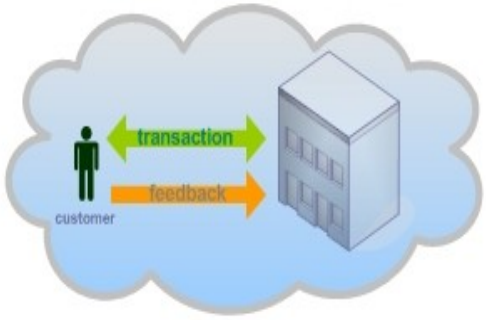
“Social Business? I'm still working on Web 2.0...”

Web 1.0 was about **connecting computers** and making technology more efficient for computers.

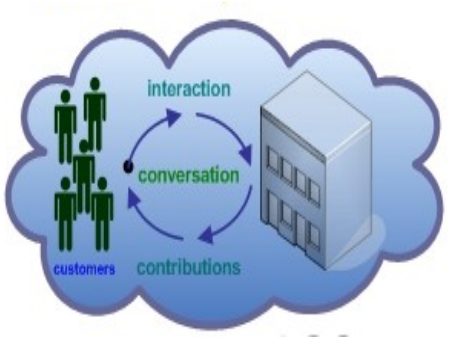
Web 2.0 is about **connecting people**, and making technology efficient for people.

Key Characteristics

- Is about communities and social networks
- Builds contextual relationships and facilitates knowledge sharing
- Is about people and the way they collaborate
- It is not a technology, not an industry, not a standard



Web 2.0 changes the way in which organizations interact with customers and employees



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Social Business capabilities address these new challenges – delivering business value.

On a smarter planet, people are transforming the way they interact... and this transformation is impacting the way business is being done

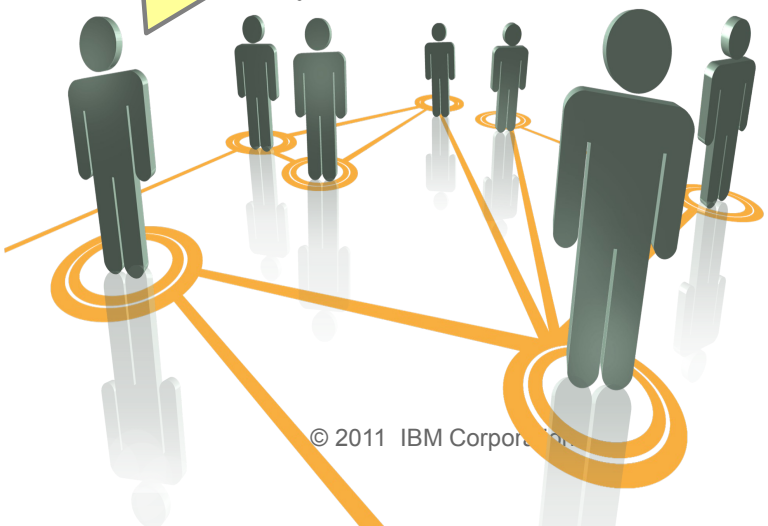
Google this now:
IBM Institute for Business Value

95% of standout organizations will focus more on "getting closer to the customer" over the next 5 years.

– IBM CEO Study 2010

Standout organizations are **57%** more likely to allow their people to use social and collaborative tools.

– IBM CHRO Study 2010



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A Social Business embraces networks of people to create business value

Engaged
Transparent
Nimble

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An organization's business network is a system of people that is fundamentally changing from the ground up...

Employees:
are using social media in all facets of their lives, including work.

Customers:
are leading the conversations that define brands.

Competitors:
are crowd-sourcing ideas to bring new solutions to market.

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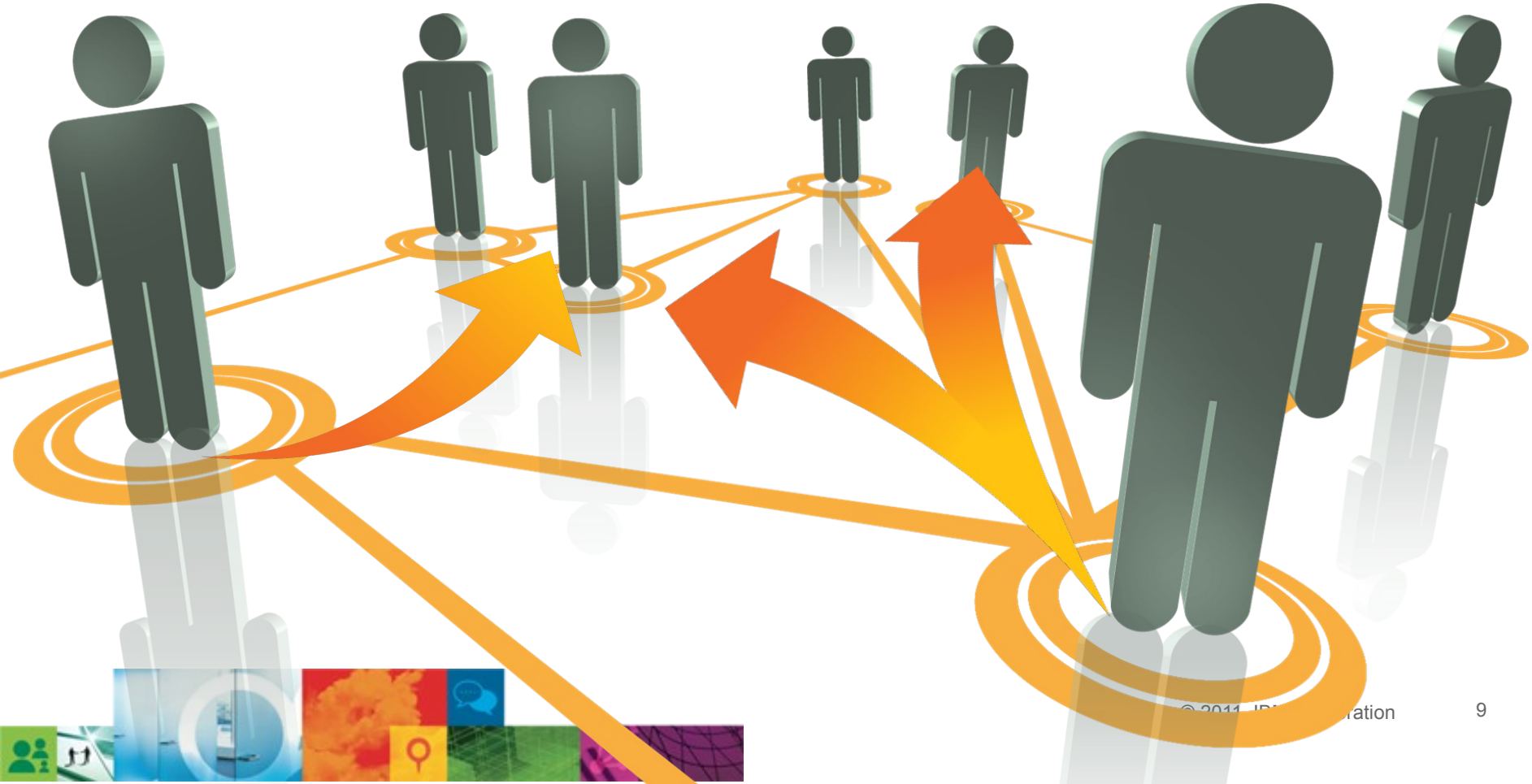
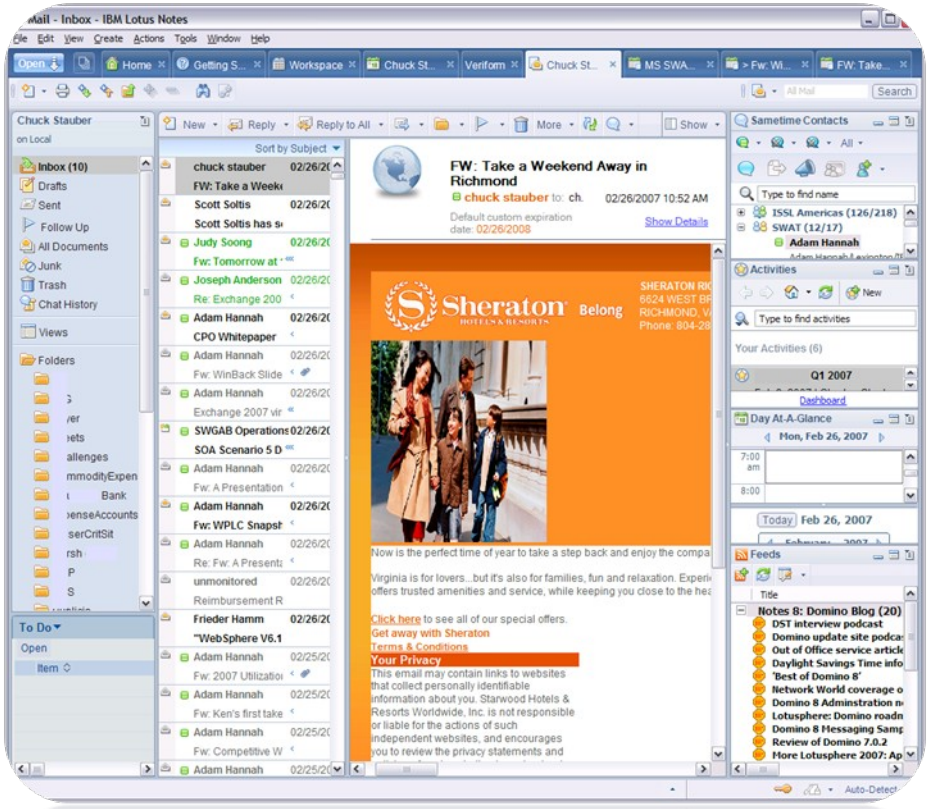
Engaged

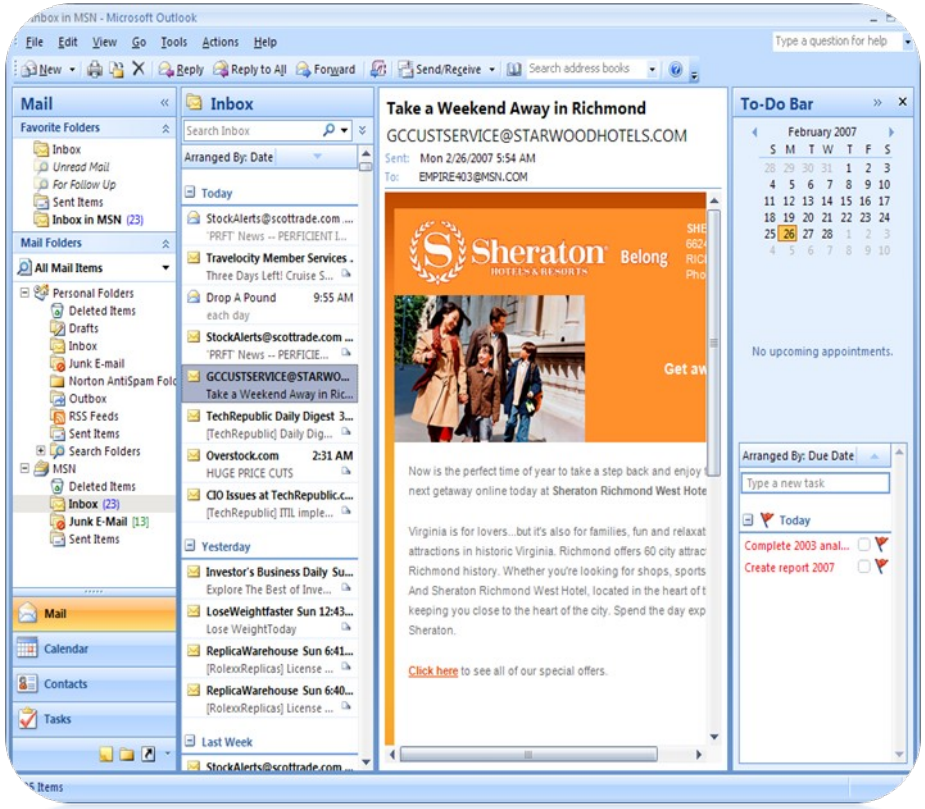
Connecting people – whether customers, partners or employees – as networks to drive innovation



Engaged

Engagement requires us all to get out of the inbox.





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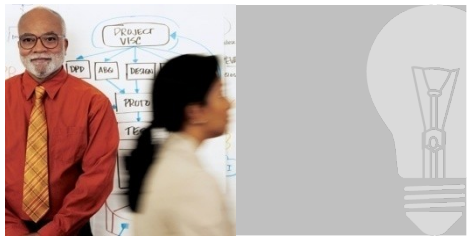
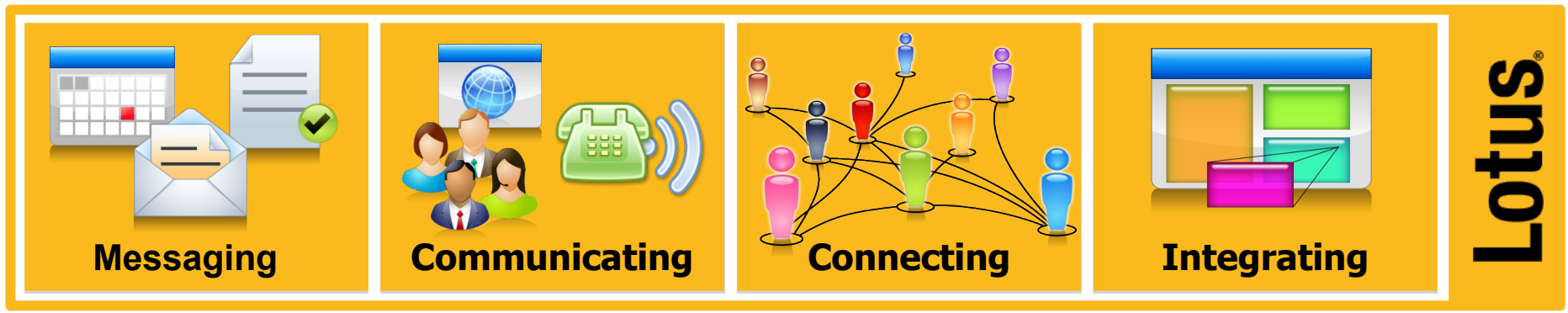
Engaged...

The Lotus Portfolio = IBM's Social Business Platform





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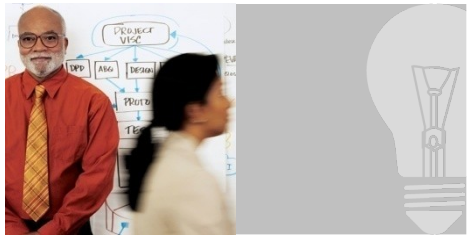
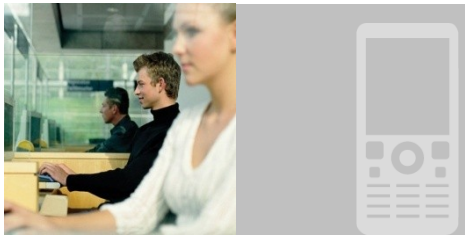
11

Engaged...

The Lotus Portfolio = IBM's Social Business Platform

Universal Access

Notes & Domino | **Sametime** | **Quickr** | **Connections** | **WS Portal**

Lotus

Open Standards Architecture

Business Applications

Information Management

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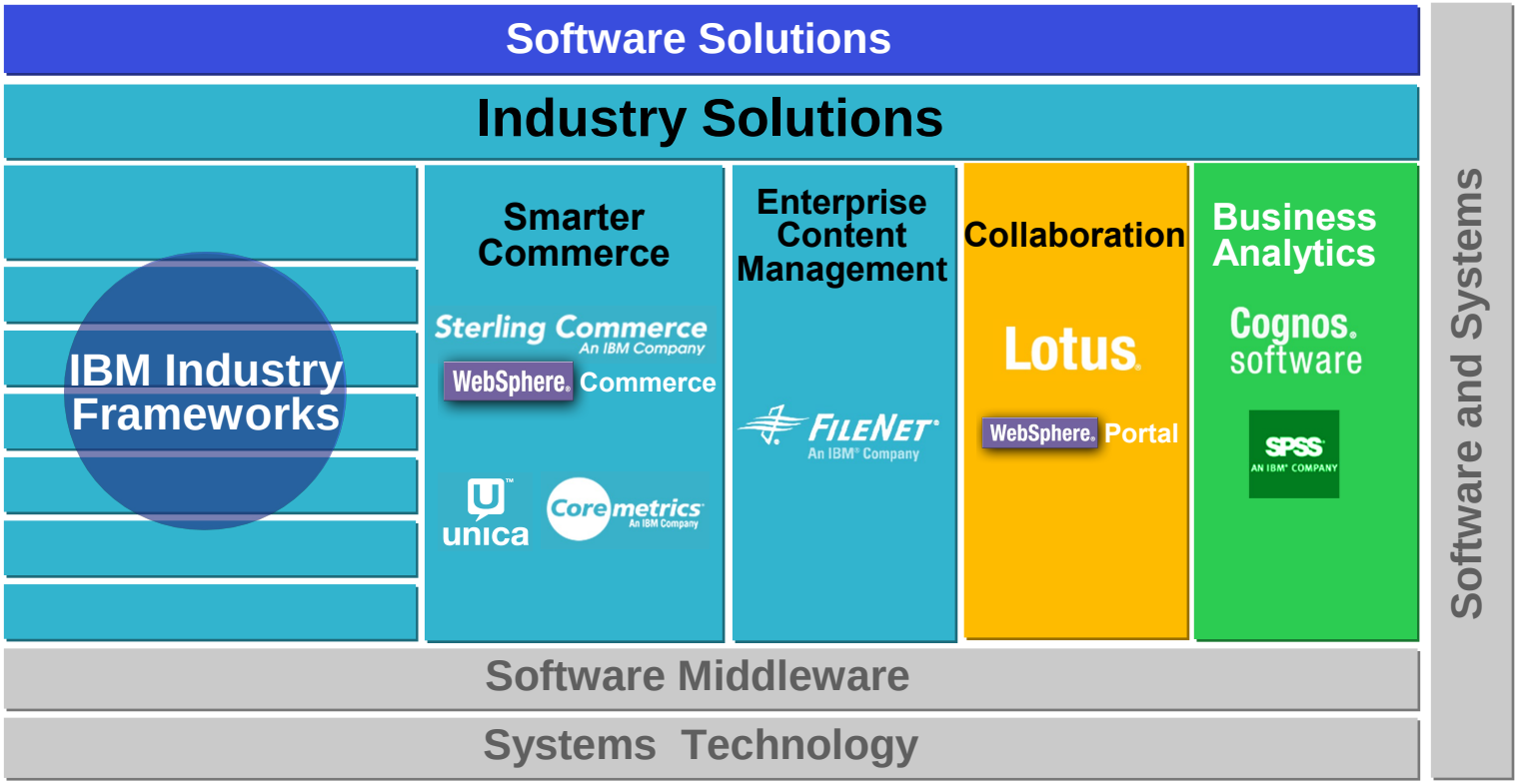
12

IBM's Software Solutions Group

Engaging more of IBM...

Our Mission: To define and develop a new category of solutions software, leveraging IBM's Middleware portfolio, to deliver an industry-oriented value proposition to line-of-business users



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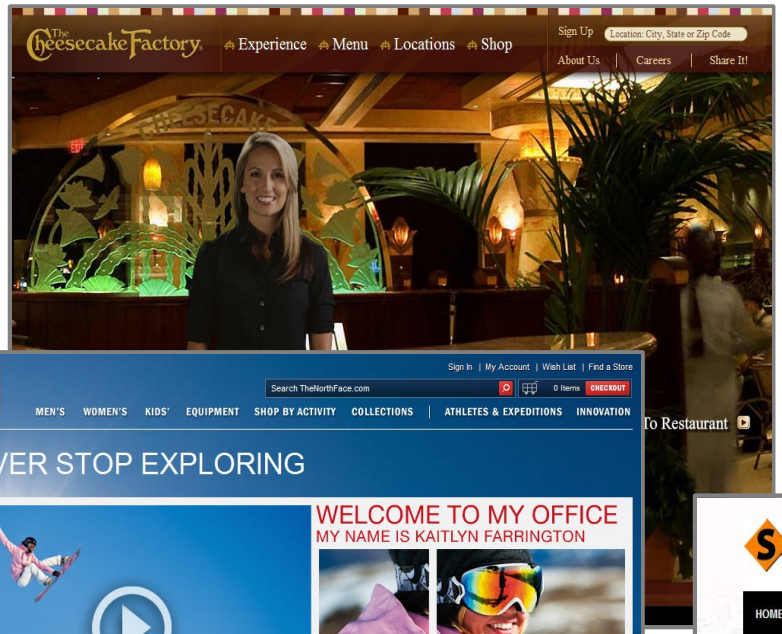
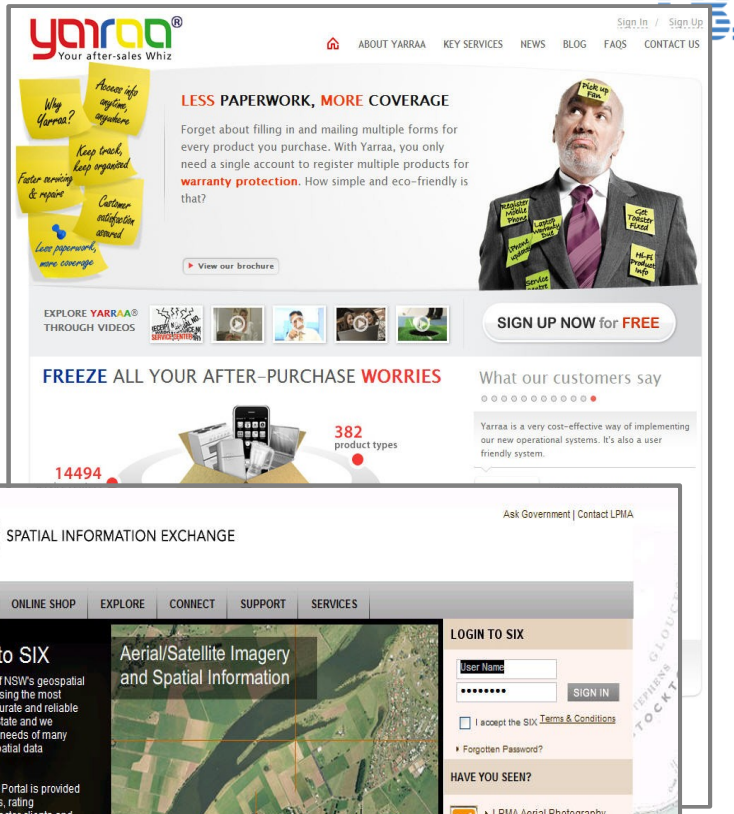
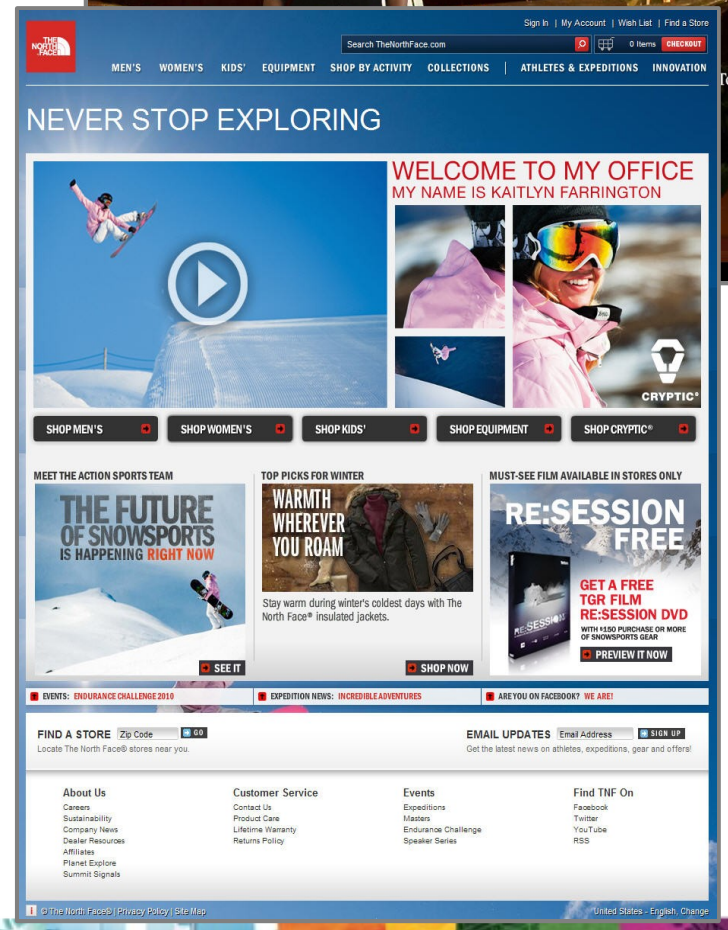
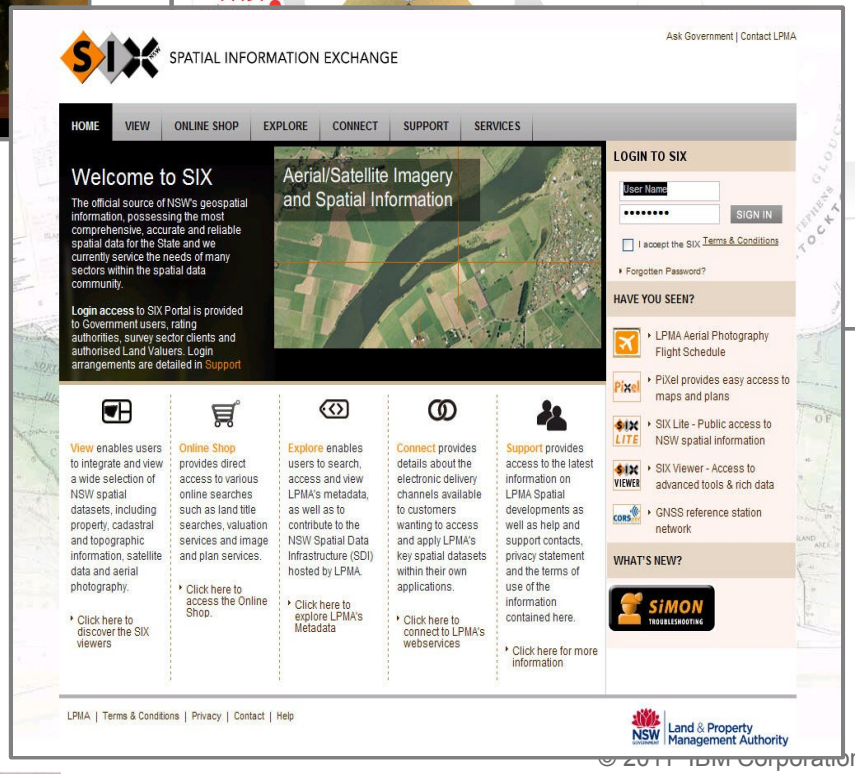
...to help our customers be more engaged.









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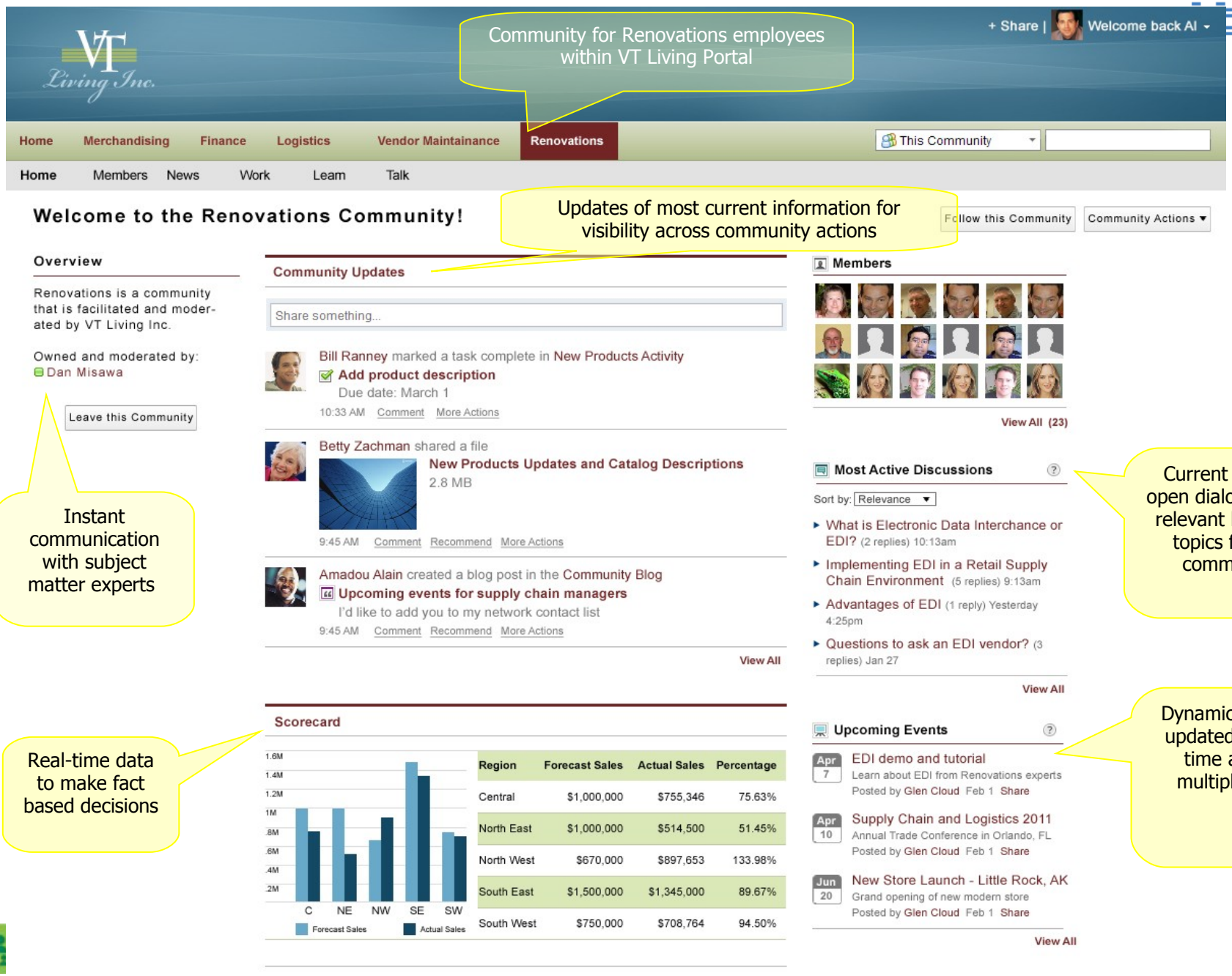
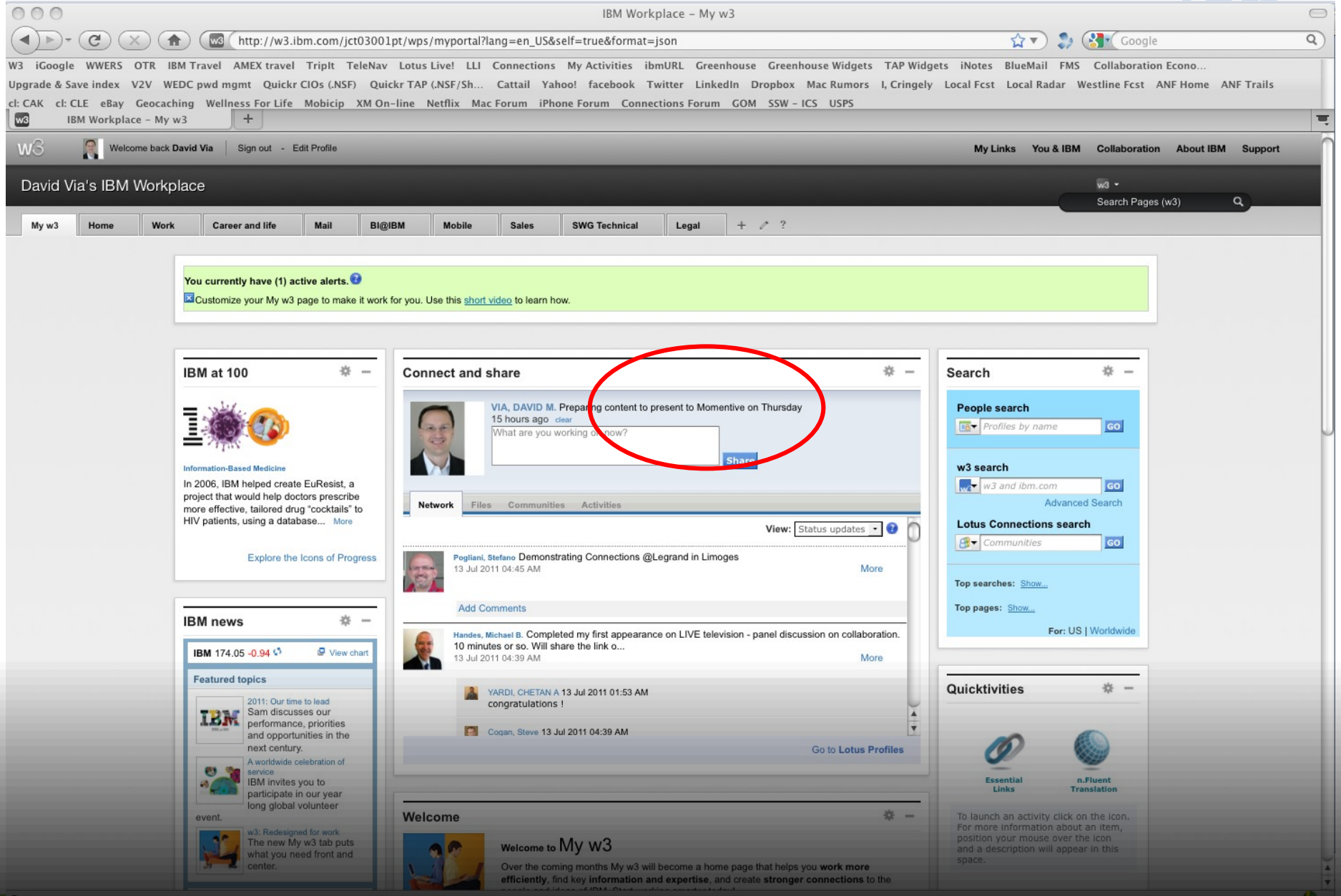
Portal + Social integration driving engaged communities



Transparent

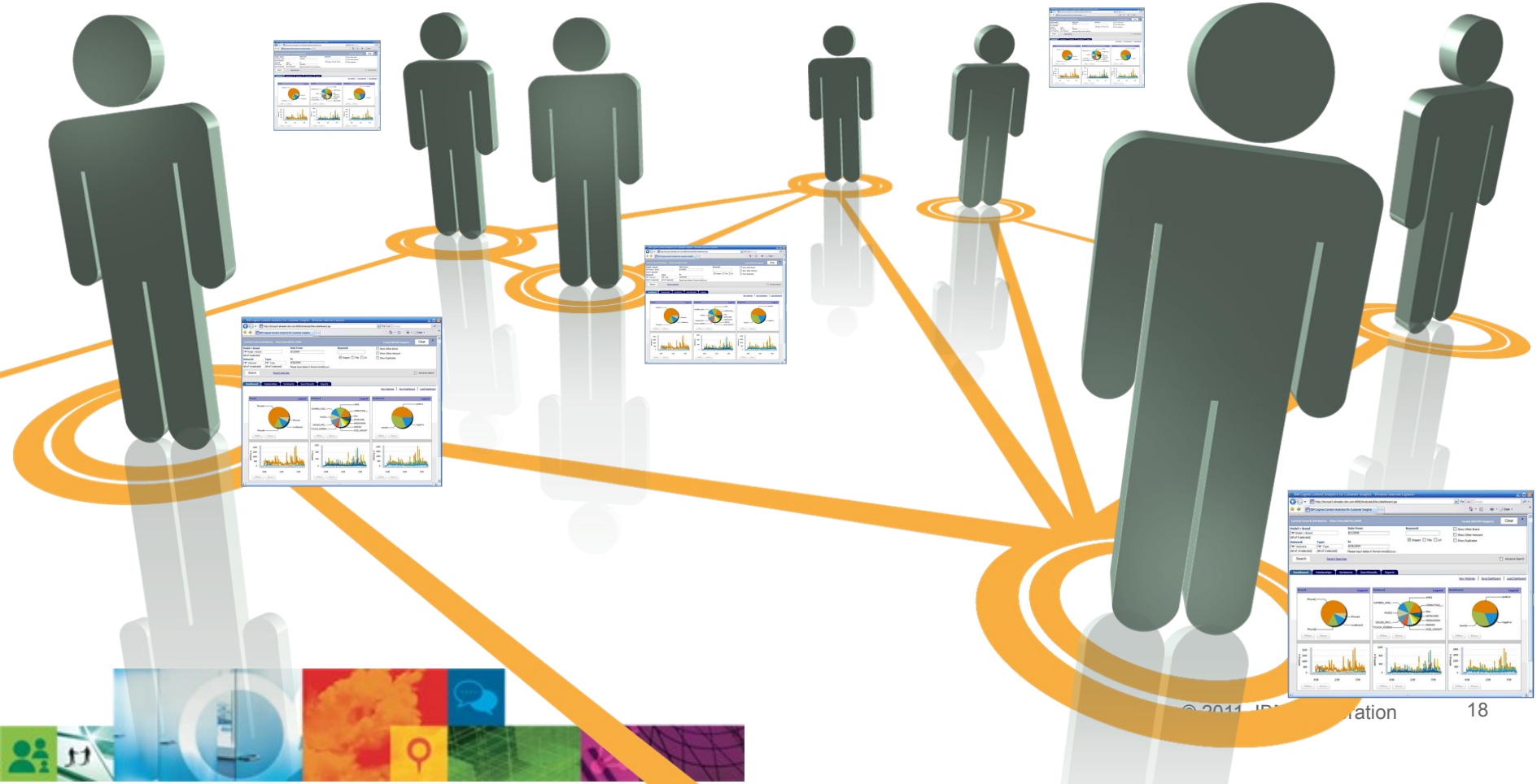
Removing unnecessary boundaries inside and outside the organization to allow your people and culture to reflect your brand and your values

Transparent...



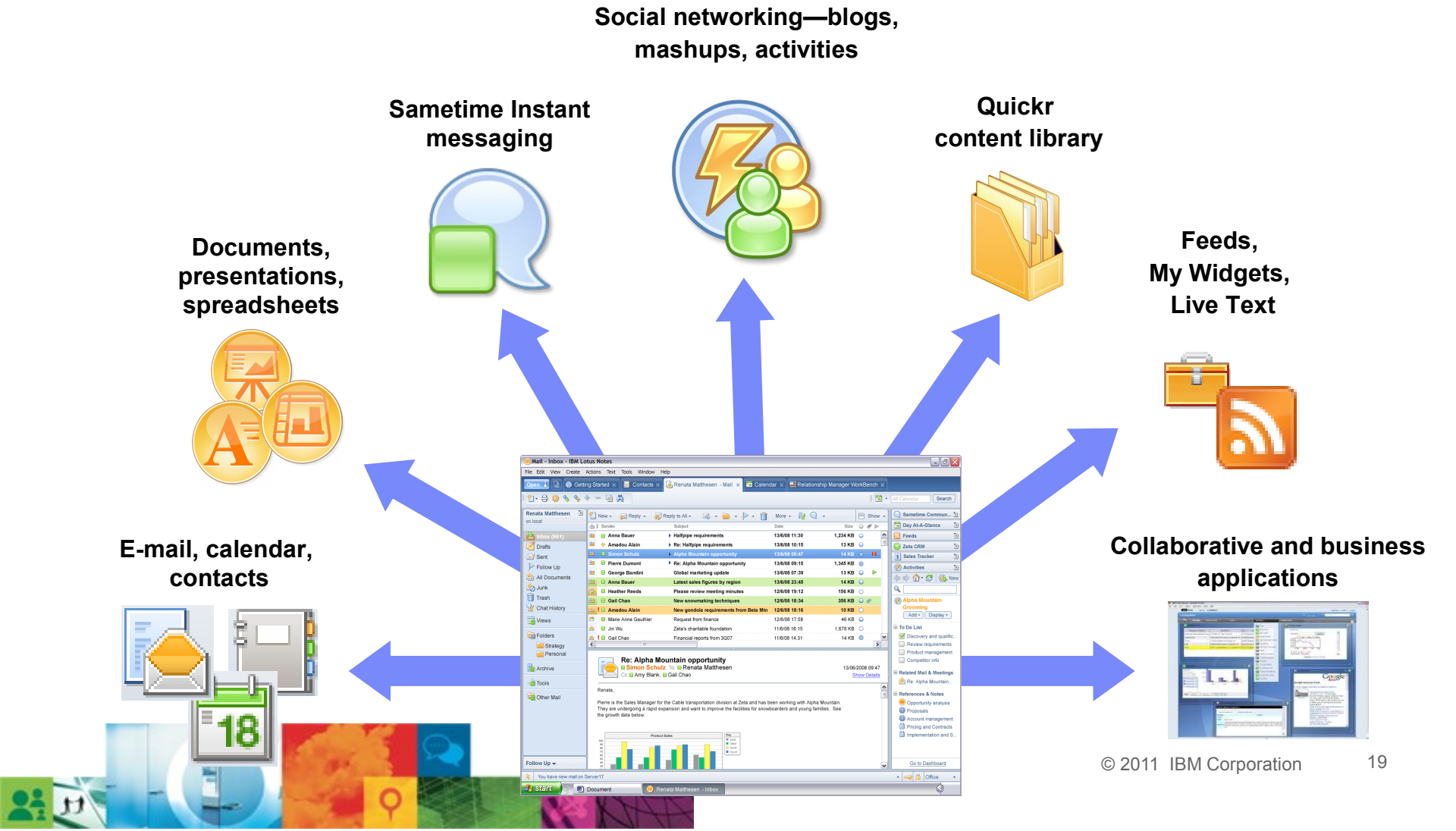
Nimble

**Leveraging these networks to speed up business,
gain real-time insight and make quicker and better decisions**



Nimble...

Nimble is having information available when and where you need it...



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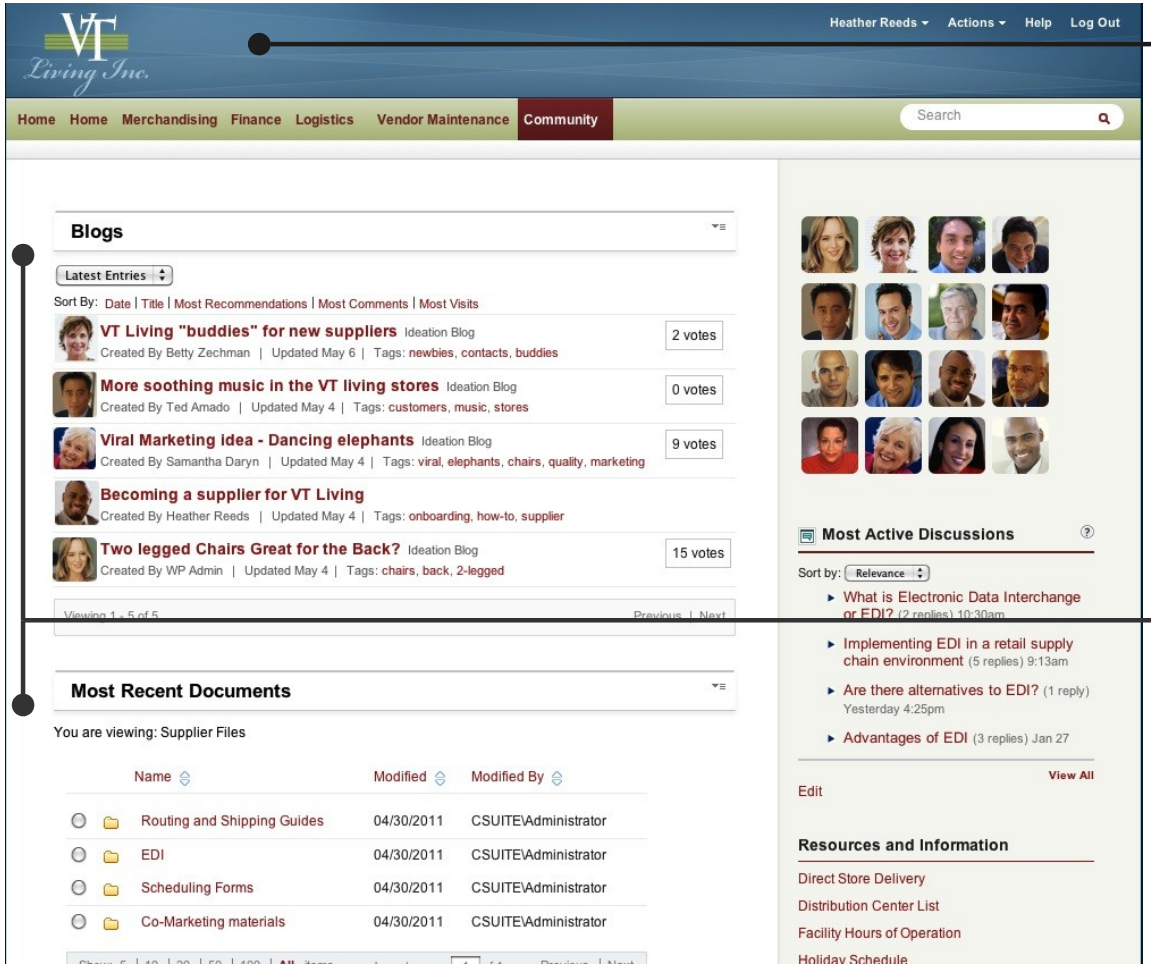
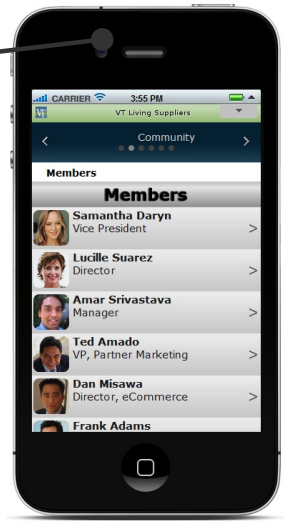
Nimble

Access from mobile device and to multiple communication tools.



Rich mobile experiences



Switch communication channels without losing your place...

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IBM's journey…

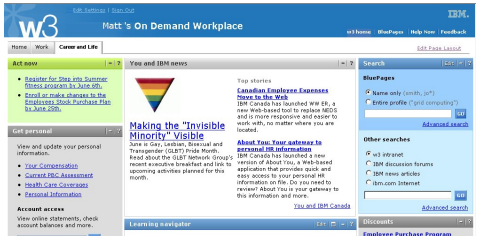
Our point of view is influenced by the journey IBM is on to provide our globally dispersed workforce solutions to dramatically shorten the distances between people, expose expertise, and free up the flow of intellectual capital and innovative ideas.

People to People

w3 BluePages

innovationjam™

People to Innovation



People to Information

People to Ideas

w3 ThinkPlace

Popular ideas

Recent ideas

Recent activity

People to People

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IBM's journey to Social Business

- IBM publishes **Social Computing Guidelines**
- Four **internal "jams"** are held with 500,000 participants

- BlueIQ is launched to **drive social software adoption**
- **Lotus Connections is integrated with w3**

- Employees can start communities outside the firewall to **collaborate with clients & partners**

- **Profiles:** 100% of employees; 1 million+ searches/week
- **Communities:** 20,000 communities; 291,000 members
- **Activities:** 147,000 activities; 288,000 users
- **Instant Messaging:** 12 million per day
- **WikiCentral:** 1 million daily page views
- **Blogs:** 17,000 internal blogs from 75 countries
- **Media Library:** 11 million downloads

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Being a Social Business enables us to create amazing technologies like... Watson.

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The tools and techniques behind the team

- Average size of the core team: just 20-25 people!
  - Internal interactions – Legal, Marketing, many other areas
  - External interactions – Advertising, Artists, Trial opponents
- Social Business tools at work...
  - **Wikis** for collaborating on code and concepts
  - **Web meetings** for sharing across geographic boundaries
  - **Team rooms** for managing content and process
- Lessons learned in driving adoption
  - Champions drive adoption (“The thought leaders use it.”)
  - Value drives adoption (“This works better than the old way!”)
  - Even in small teams, silos of information can form and behavior change takes time.

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Social Business Success

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Today's Demands on IT

32.6 million **servers worldwide**

- 85% idle **computer capacity**
- 15% **of servers run 24/7 without being actively used on a daily basis**

1.2 Zetabytes (1.2 trillion gigabytes) **exist in the "digital universe"**

- 50% **YTY growth**
- 25% **of data is unique;** 75% **is a copy**

Between 2000 and 2010

- **servers grew** 6x **('00-'10)**
- **storage grew** 69x **('00-'10)**
- **virtual machines grew** 51% CAGR **('04-'10)**

Data centers have doubled **their energy use in the past five years**

- 18% **increase in data center energy costs projected**

Internet connected devices growing 42% per year

Since 2000 security vulnerabilities grew eightfold

… while IT budgets are growing less than 1% per year.

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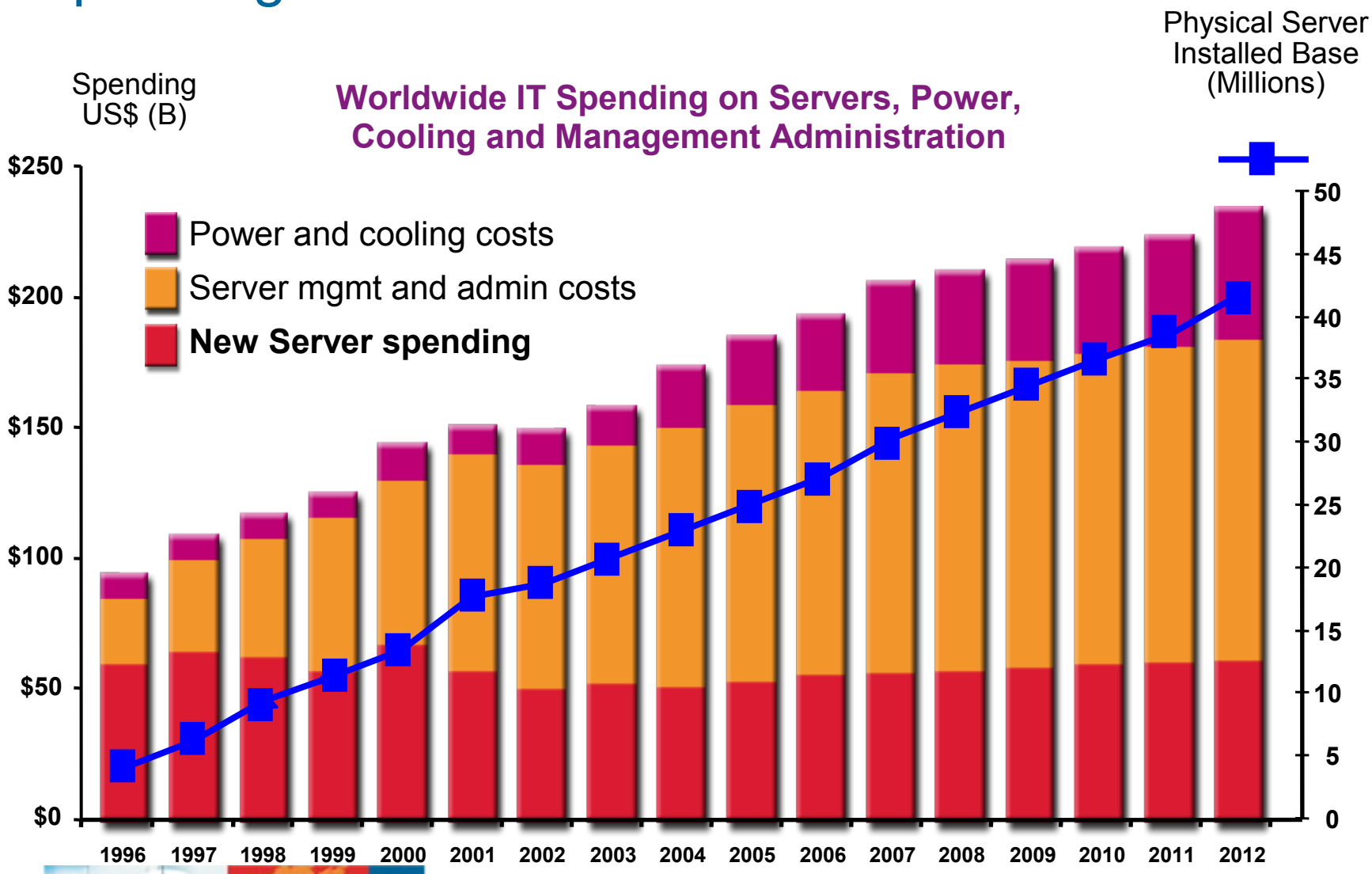
IT Operating Costs are Out of Control



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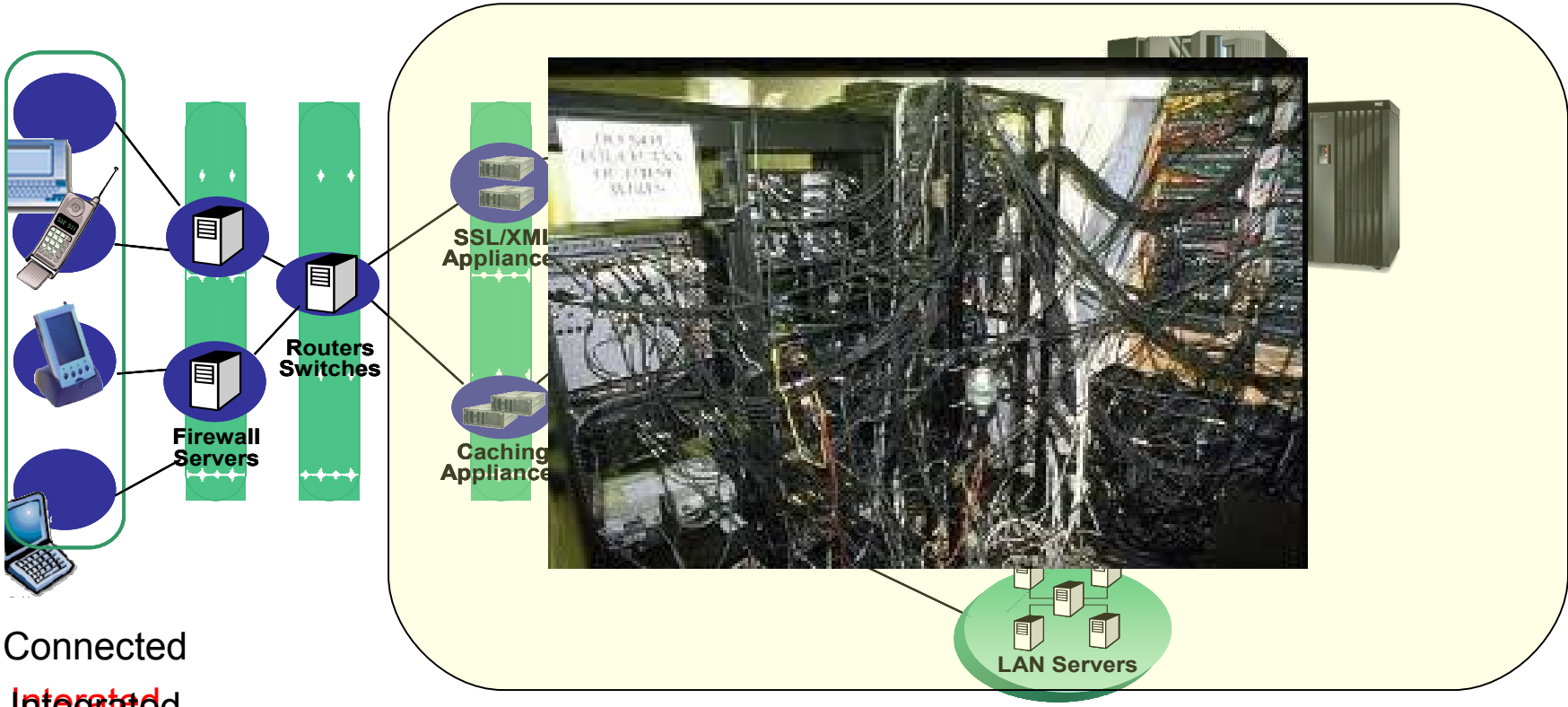
Source: IDC

Islands of Computing



- ☑ Connected
- ☑ Integrated
- ☑ Flexible, Dynamic, and Responsive
- ☑ Aligned with Business Objectives

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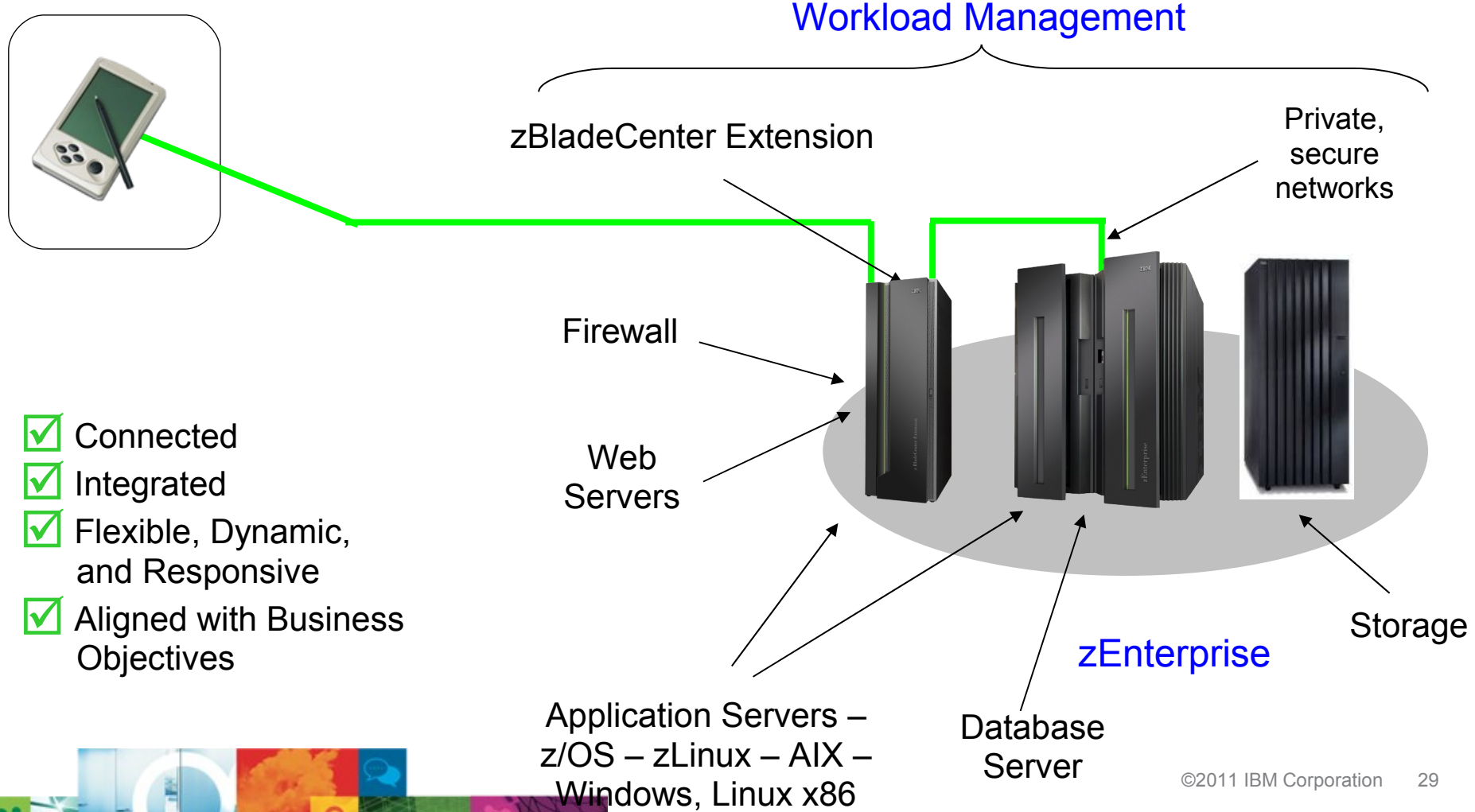
It's ALL about the workload…



- ☑ Connected
- ☑ Integrated
- ☑ Flexible, Dynamic, and Responsive
- ☑ Aligned with Business Objectives

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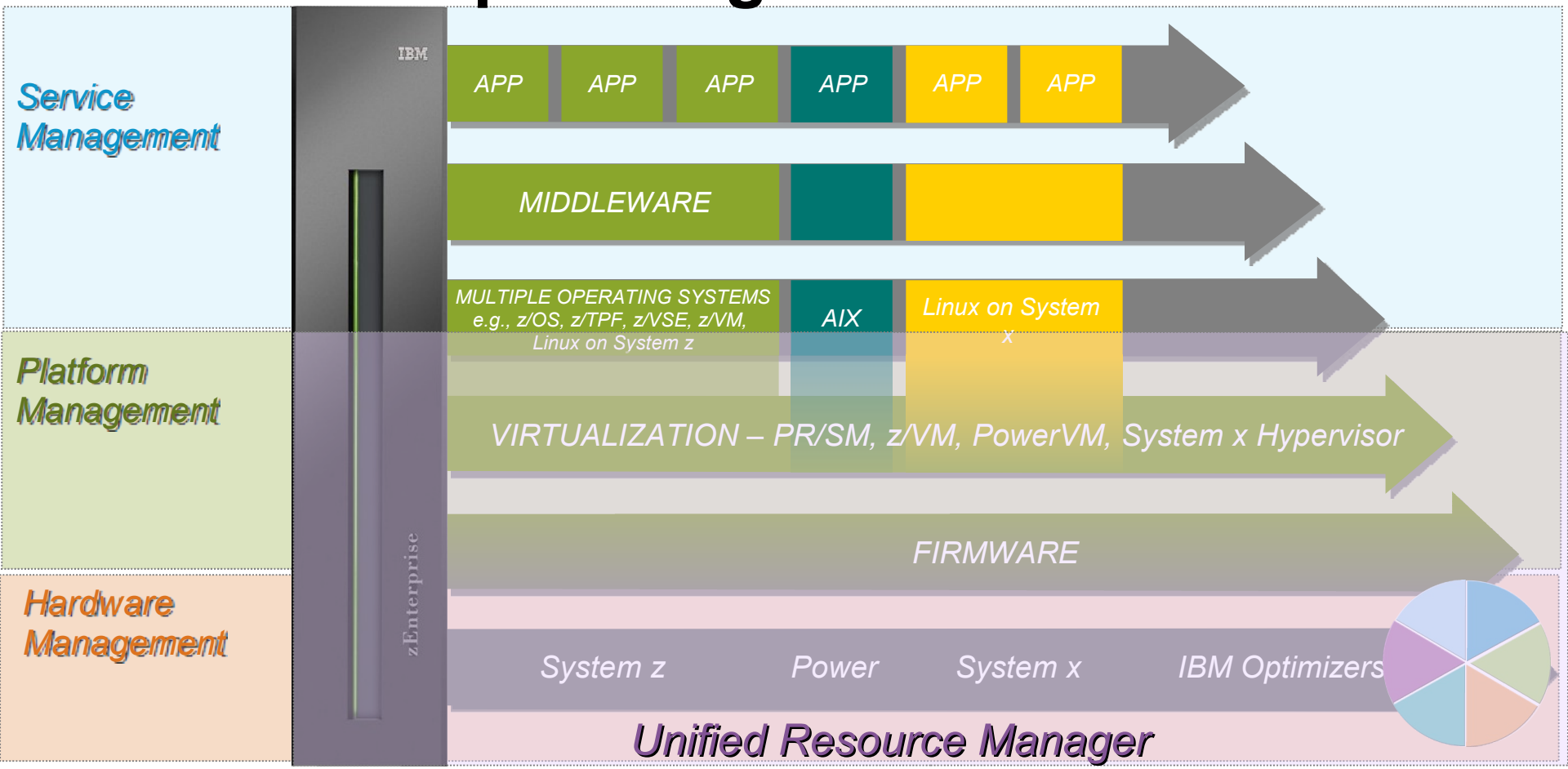
Extending Service Management for improved governance



Focused, collaborative innovation

A "complete systems" approach

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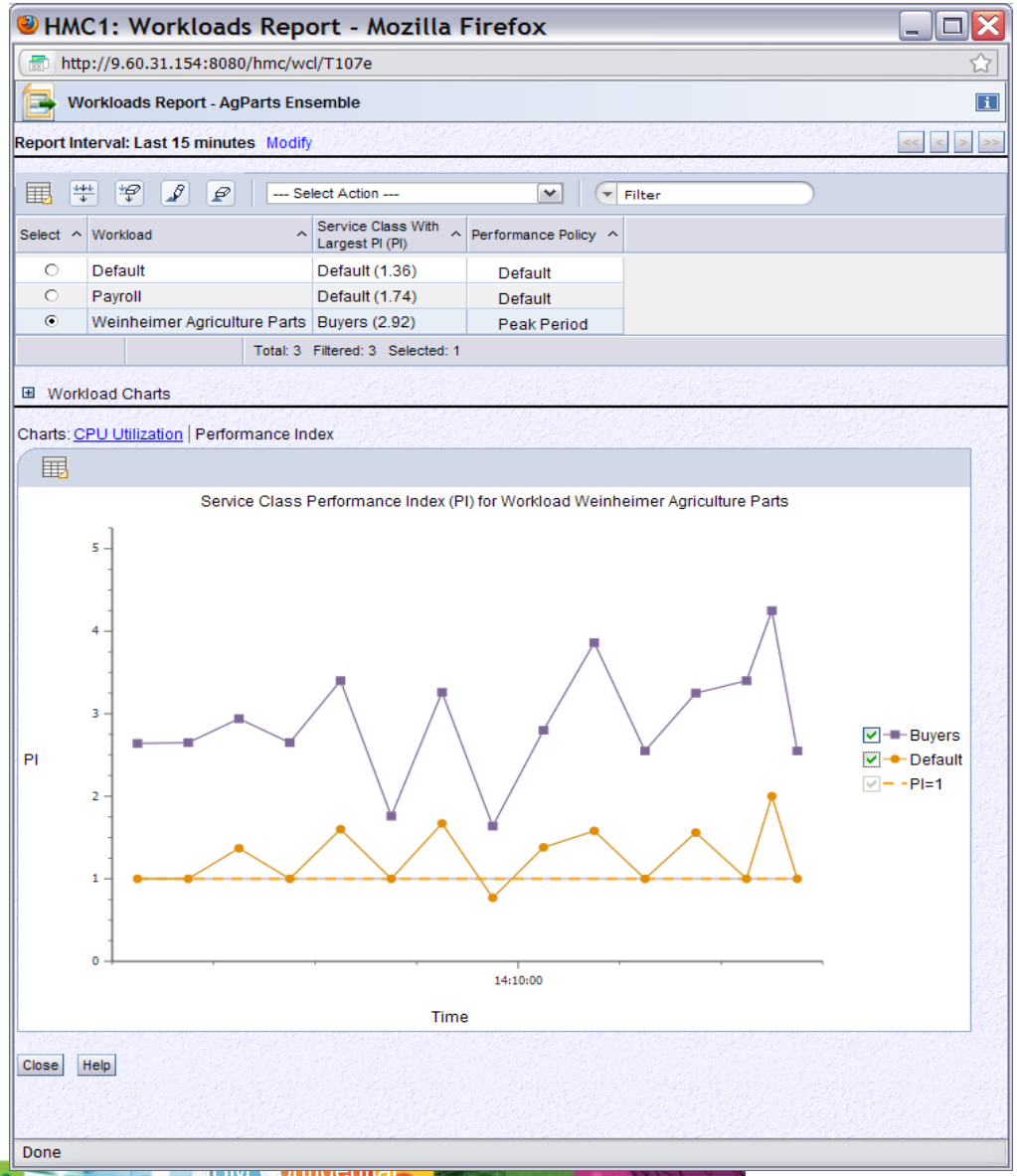
Operational Controls

† All statements regarding IBM future direction and intent are subject to change or withdrawal without notice, and represents goals and objectives only.

Hypervisor Management and Virtual Server Management

All statements regarding IBM future direction and intent are subject to change or withdrawal without notice, and represents goals and objectives only.

Workload Reports



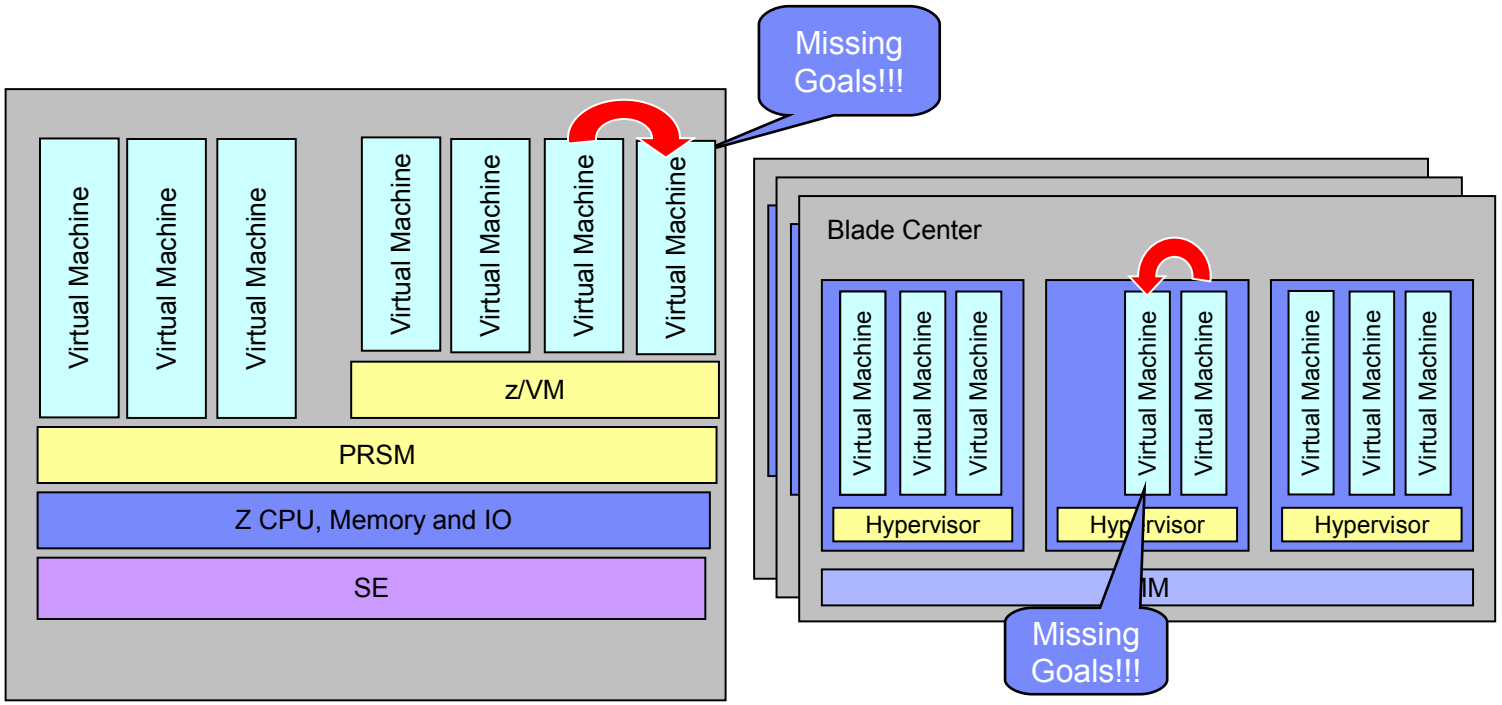
workload: A collection of virtual servers and optimizers that perform a customer-defined collective purpose. A workload generally can be viewed as a multi-tiered application. Each workload is associated with a set of policies that define performance, energy consumption, and availability goals.

service class: A group of work that has the same service goals or performance objectives, resource requirements, or availability requirements.

performance policy: A description of the performance objectives and importance of a workload.

performance index: A number that indicates whether the performance goal for a service class was achieved, exceeded, or missed.

Managing Resources across Virtual Machines



- Manage resources across virtual machines
- Detect that a virtual machine is part of Workload not achieving goals
- Determine that the virtual machine performance can be improved with additional resources
- Project impact on all effected Workloads of moving resources to virtual machine
- If good trade-off based on policy, redistribute resources
- Initially support CPU management, will extend to memory and other resources

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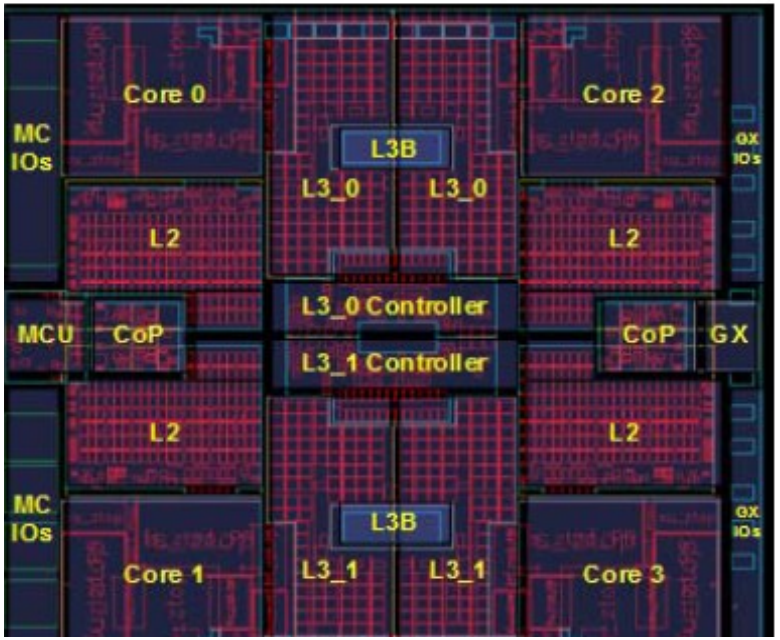
IBM Leadership Technology at the Core

- New 5.2 GHZ Quad Core Processor Chip boot hardware/price performance
  - 100 New instruction – improvement for CPU intensive, Java[tm], and C++ Applications
  - Over twice as much on-chip cache as System z10 to help optimize multi-tenant data severing environments
- Performance improvement for systems with large number of cores – improved MP ratios
- Data compression and cryptographic processors right on chip



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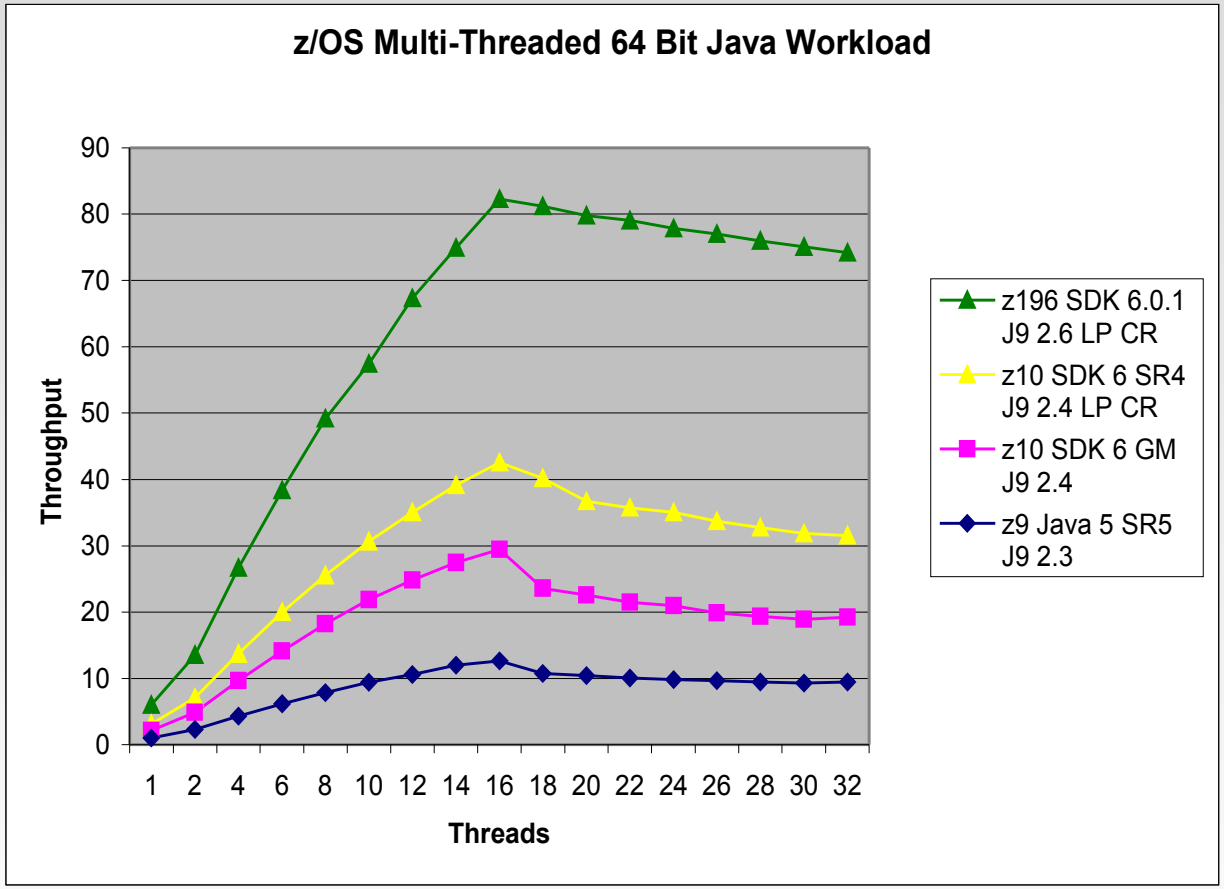
Java SDK 6.0.1 Performance:

Aggregate HW and SDK Improvement z10, z196, Java6 to Java6.0.1

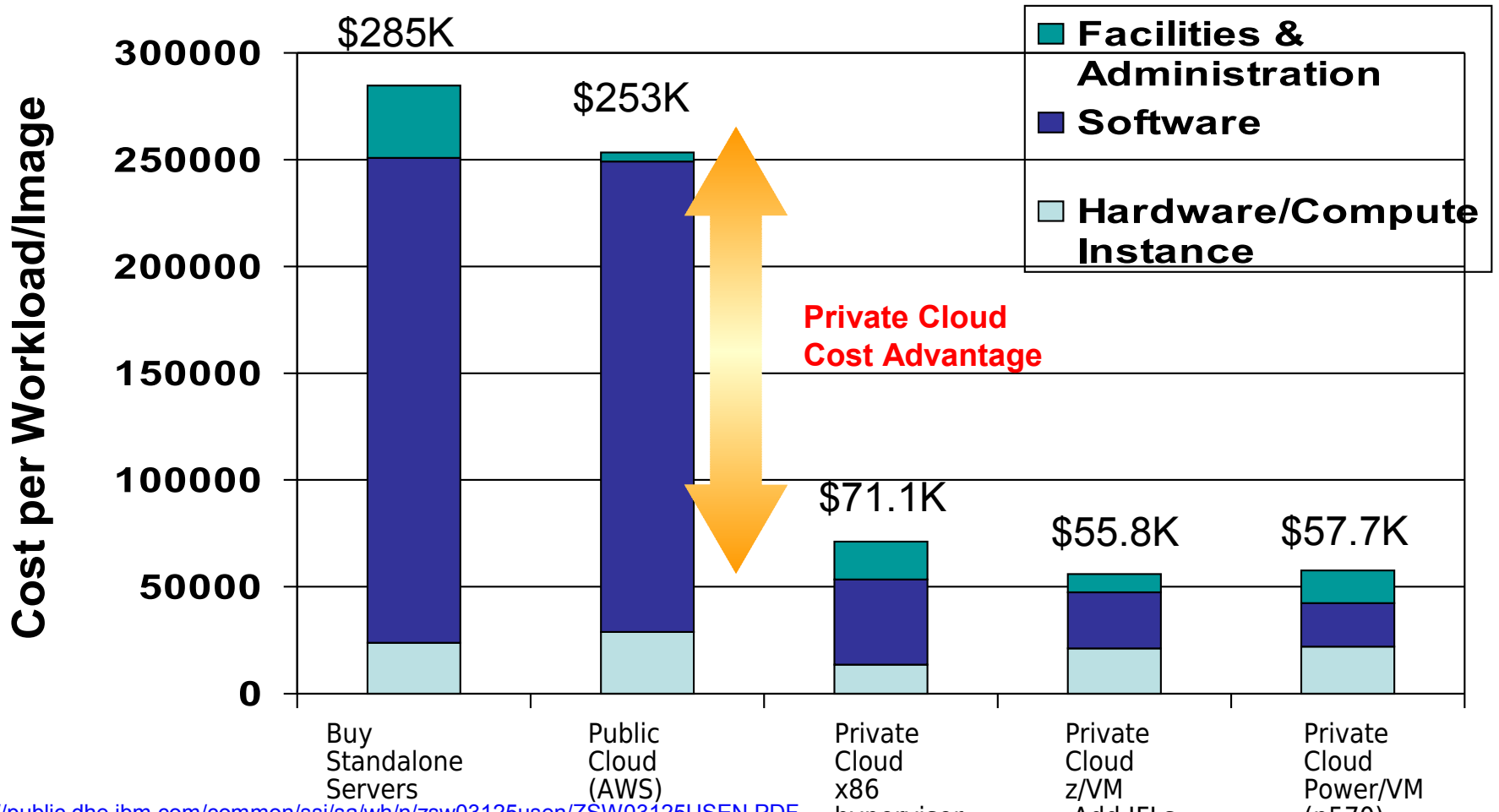


~7x Improvement from z10, z196, Java6 and Java6.0.1

(Controlled measurement environment, results may vary)

Private Cloud Cost Advantage
Think about buy vs lease – both are valid

Cost Per Image for Linux Workloads (5 Yr TCO)



ftp://public.dhe.ibm.com/common/ssi/sa/wh/n/zsw03125usen/ZSW03125USEN.PDF

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Hybrid Collaboration as a Private Cloud

Tomorrow's Possibilities

BlackBerry on x86

SameTime Video on UNIX

Managed as a single Business unit of work

One single heterogeneous server

High Speed private virtual networks

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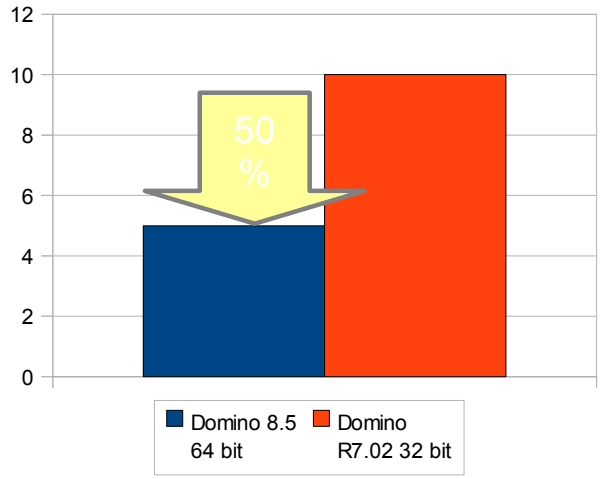
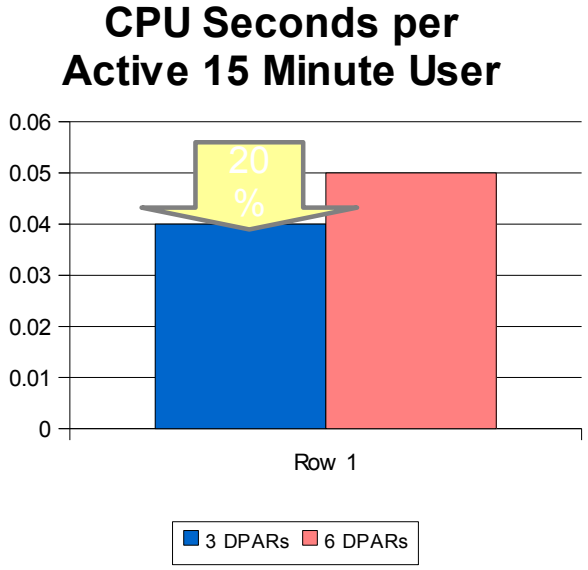
System z Advantages of Domino with 64 Bit

- Exploitation of the 3 TB of RAM on the z 196
  - •Greater vertical scalability within 1 box
  - •Four levels of h/w cache for improved memory performance
- Elimination of the 2GB virtual storage limits with the Domino 32 bit code
  - •Dramatic vertical scalability of a single DPAR image





- Reduction of DPARs by 50%
  - •32 bit sized for 1500 active users per DPAR
  - •64 bit size for 3000 active users per DPAR
- Reduces administration CPU costs
  - •Less servers to manage, monitor, and upgrade
  - •More efficient use of resources growing vertically

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http://www.ibm.com/developerworks/lotus/library/domino-

Overview of IBM's Deployment

- Domino on Linux for System z is IBM's strategic direction
  - Part of Project Big Green
  - Application servers went first- Completed in 4Q 2009
    - +40K Domino application databases
  - Mail is ongoing within all Geos at different states
    - Currently worldwide over 160K IBMers are on Domino on Linux for System z
  - Not just Domino servers, but entire messaging infrastructure
    - Hubs, Admin servers, etc...
  - Designed to save
    - Space
    - Energy
    - Money

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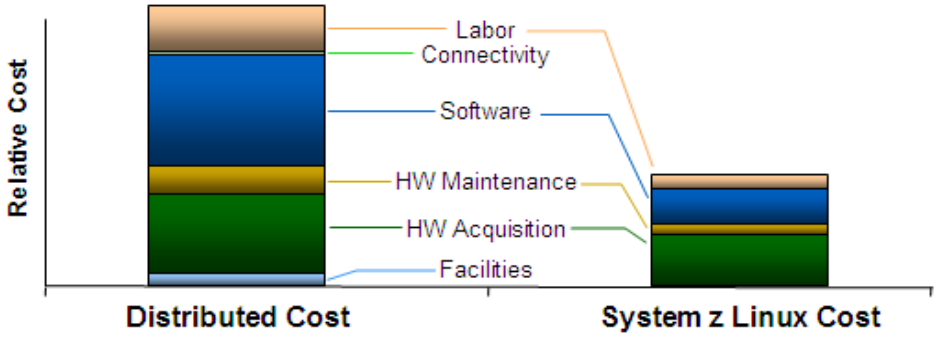
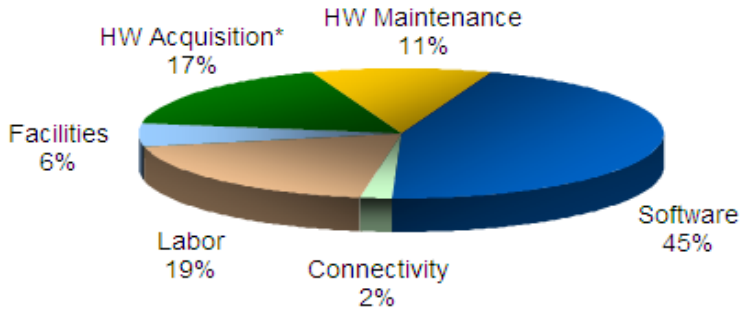
IBM IT Transformation

Operating Cost: Distributed vs. Mainframe



Potential Savings: Categories as a % of Gross Savings



* HW Acquisition compares server/disk refresh of distributed environment to the cost of acquiring new mainframes/storage

Dramatic Simplification

Unit	Distributed	System z Linux	% Reduction
Software Licenses	26,700	1,800	93%
Ports	31,300	960	97%
Cables	19,500	700	96%
Physical Network Connections	15,700	7,000	55%

Results will vary based on several factors including # of servers and work load types

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IBM IT Transformation = Cost Savings

- Consolidated and virtualized over 3,900 server images onto 30 System z servers
- 80% less energy used
- 85% less floor space … a 16,500 sq. ft. reduction
- Cumulative benefit yield of ***$4.1B over the last 5 years***

	1997	Today
Host Data Centers	155	7
Web Hosting Centers	80	5
Network	31	1
Applications	15,000	4,700

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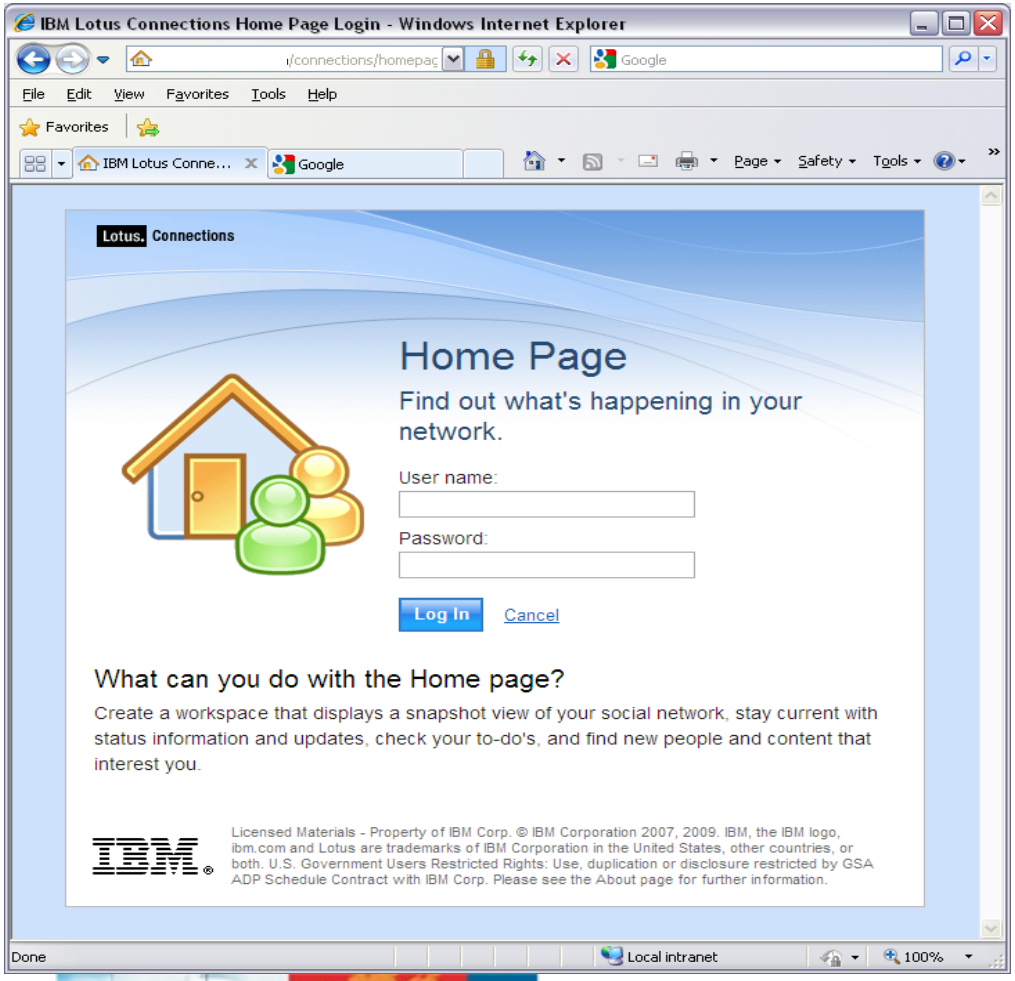
Connections in IBM is now on Linux for System z Virtual Images



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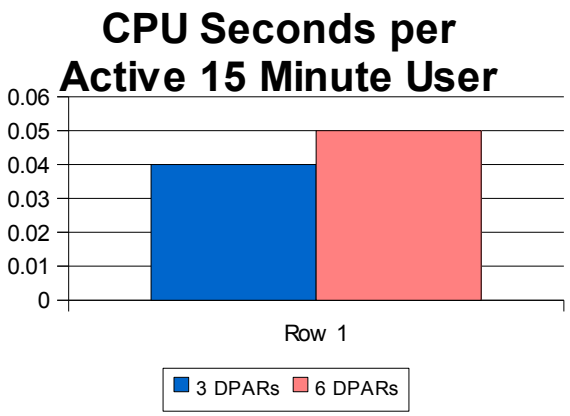
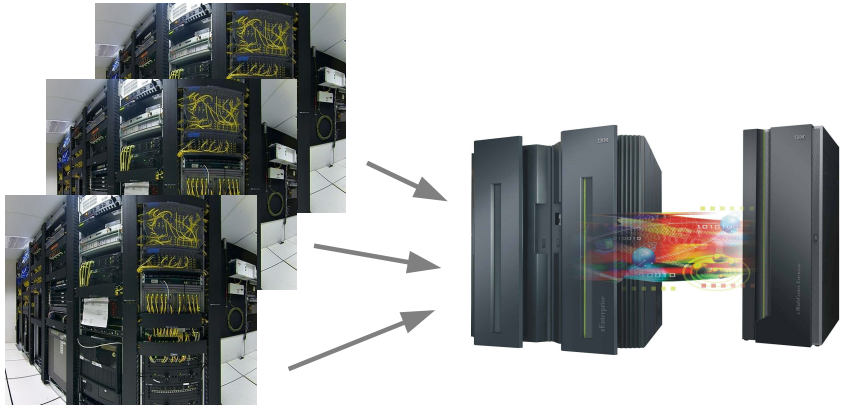
Customer TCO Case Study

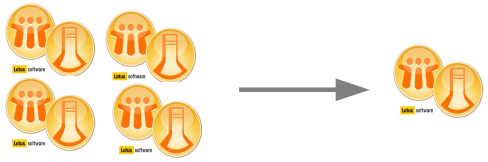


Vast Majority of cost are not in Software and CPU Hardware



Over 300 Physical Boxes to 2 existing z footprints
No increase in the z staff to support new workload
99% Reduction in Physical Devices

Over +350 Domino images to under 50
88% Reduction in Domino Images



Over +300 OS Images to 16
94% Reduction in OS Images

Forklift Upgrades: Fast, Easy, Upwardly Compatible

IBM System z10 IBM zEnterprise System

"One of the key advantages we see of running Linux on System z is as new generations of hardware technology are introduced, we're able to basically do a forklift upgrade – we don't have to re-certify applications as we have had to do on other platforms in the past."
– IT Manager, Delivery Industry Company

Why Collaboration on zEnterprise

Domino is a OODBS product and Connections is a DB/2 & Portal product both with **very large** IO requirements.

- z is recognized as the platform with the best IO infrastructure
- Domino has been running as a mixed workload on a single box since 1997

Ability to virtualize with the lowest overhead cost and greatest scalability

- Hardware all the way through software virtualization integration

Vertical scalability vs horizontal scalability

- Lower cost to Customers the greater the vertical scalability

Lowest TCO

Admin, backup/restores, Capacity on Demand, growth without adding in support staff, vertical scalability, security, etc...

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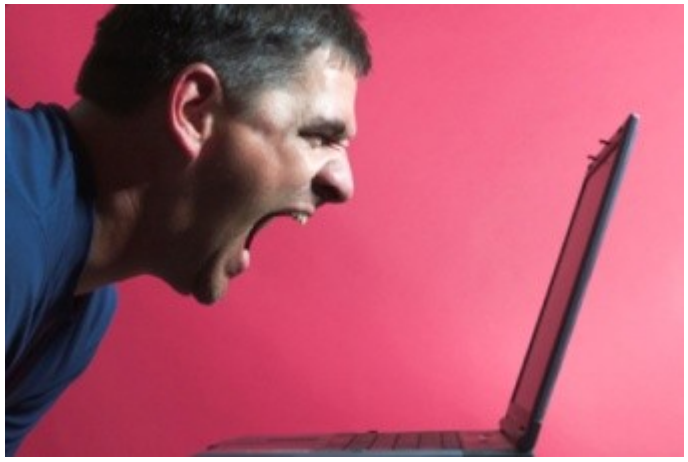
Addressing your Pain Points

- Weekly Patch Upgrades
  - People intensive
  - Outages when applying updates/synchronization issues
- Network Growth/bottlenecks
- Rapid Growth of server farm
  - Data Center floor space, cost, cooling
  - Remember the 40% of the CIO are looking at data center expansion in the next two years
- Reduce infrastructure cost and allow more of the IT budget for new Business/Competitive value
  - Administration People
  - Distributed Licensing fees
    - 100's of Distributed licenses versus 10's
- Slow to respond to business needs



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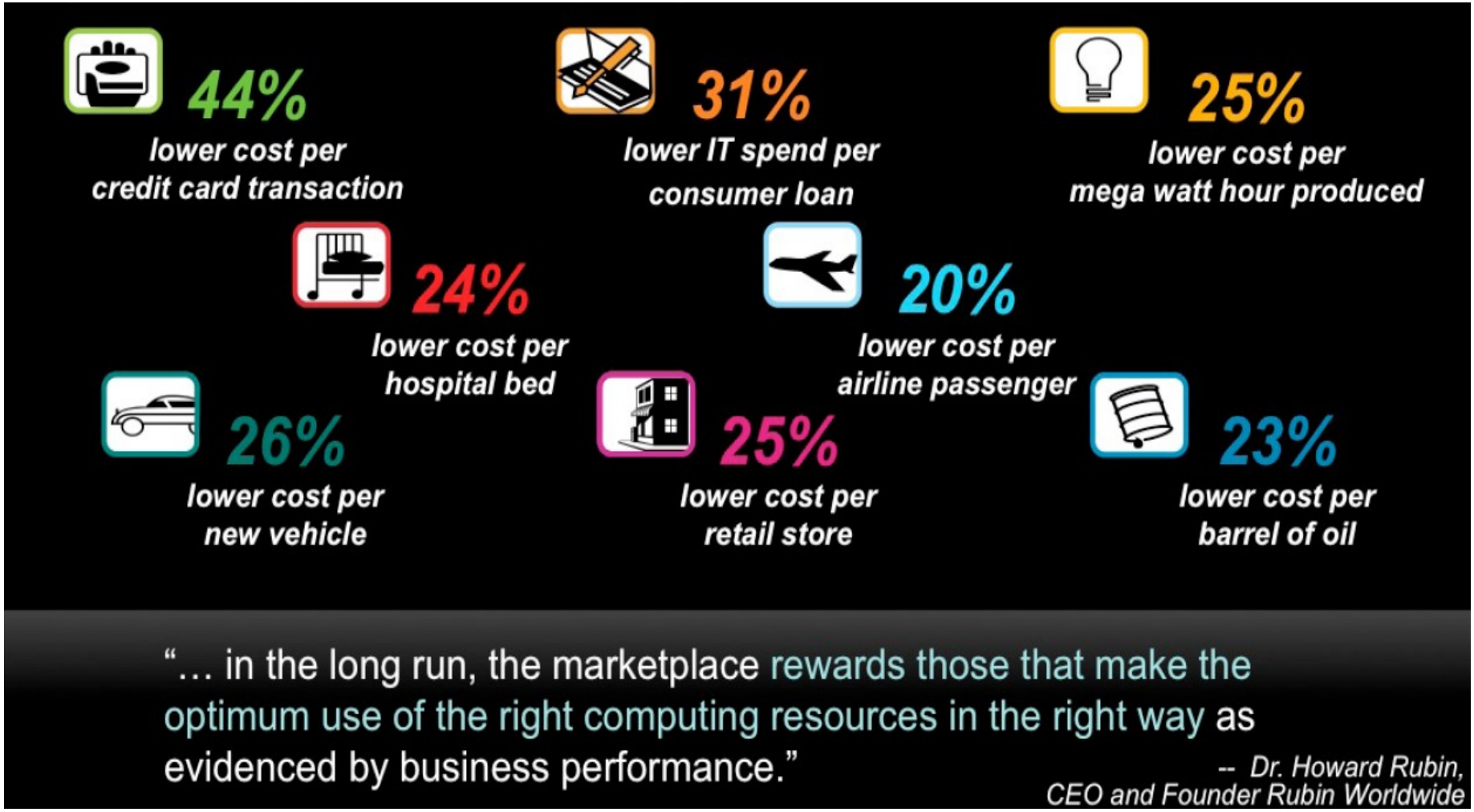
System z improves IT efficiency across industries



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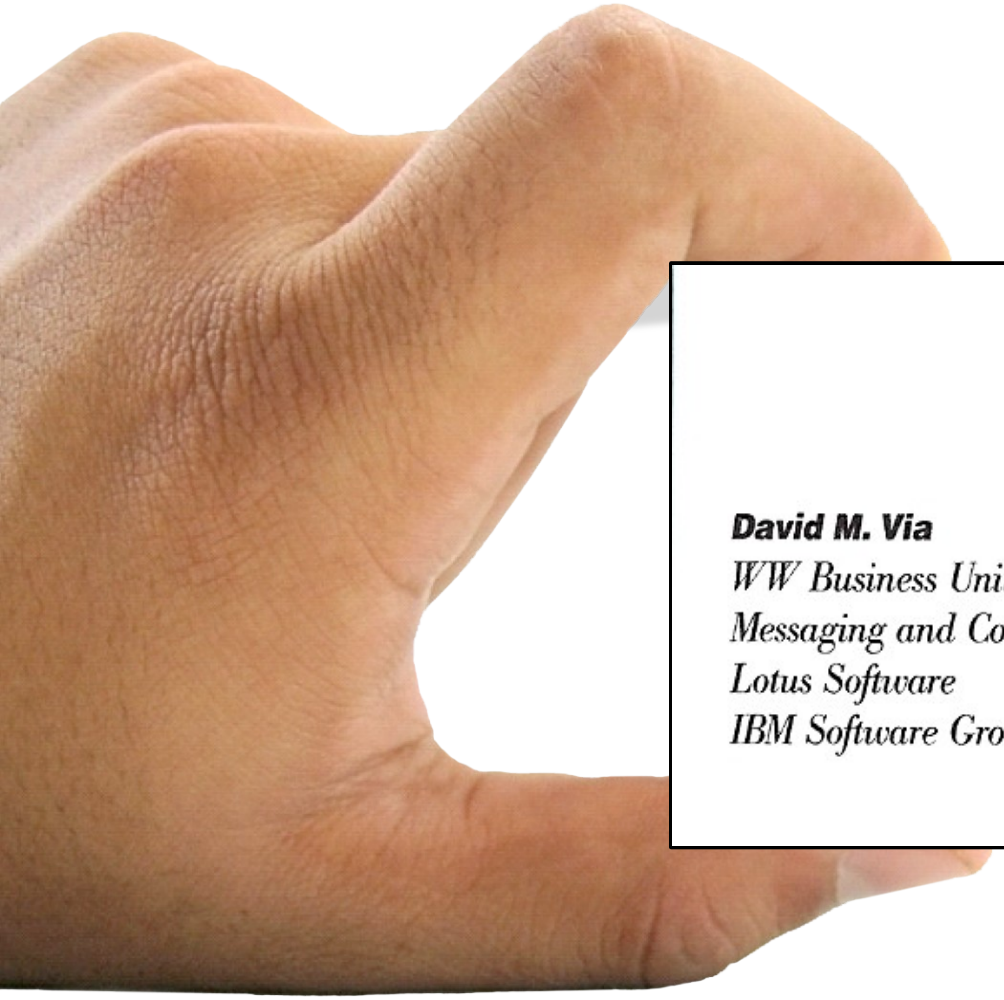
Connect with me...



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THANK YOU !!!

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