

Is **2012** the beginning of the **end** for IT!

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Evolution is continuing

Changing Workforce



4

4 Generations

Generation	Timeframes
Traditionalists	1922 – 1945
Baby Boomers	1946 – 1965
Gen X	1966 – 1980
Gen Y	1980 – 1995

4

4 Generations

Generation	Attributes
Traditionalists	hard working and willing to go the extra mile
Baby Boomers	independent, seek meaningful work and self employment
Gen X	like own time schedules and independence
Gen Y	Multitasking, team work, mixing work and play

4 Generations

Generation	Access to media
Traditionalists	radio
Baby Boomers	Television, phone
Gen X	Internet, television, mobile phone
Gen Y	Internet, television, mobile phone and social media

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as of

Airlines stretched so thin that one piece out of place throws them off

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By [Dan Reed](#), USA TODAY

Charlie Miller could be a poster child for nightmarish air travel during the winter now drawing to a close.

A hospital consultant from Barneveld, N.Y., Miller got caught in the Dec. 20 blizzard that closed Denver International Airport for more than two days. Told by his carrier, Continental Airlines, that it would be Christmas night before it could get him home, Miller eventually set out on his own.

CABIN FEVER: [Events conspire to keep fliers trapped at airports](#)

PLANE TALK: [Today in the Sky with Ben Mutzabaugh](#)

He managed to get home late on Christmas Eve. But to do it, he had to sleep two nights at the airport, check in at two high-



[+ Enlarge](#)

By [Will Powers](#), AP

Passengers sleep in a Denver concourse Dec. 21 after a blizzard left the airport snowbound.

priced hotels, pay \$150 for an 8-mile cab ride in Denver, buy a first-class ticket on United, fly to Los Angeles, then connect through Philadelphia. His total extra cost: \$2,800.

- Cloud Computing



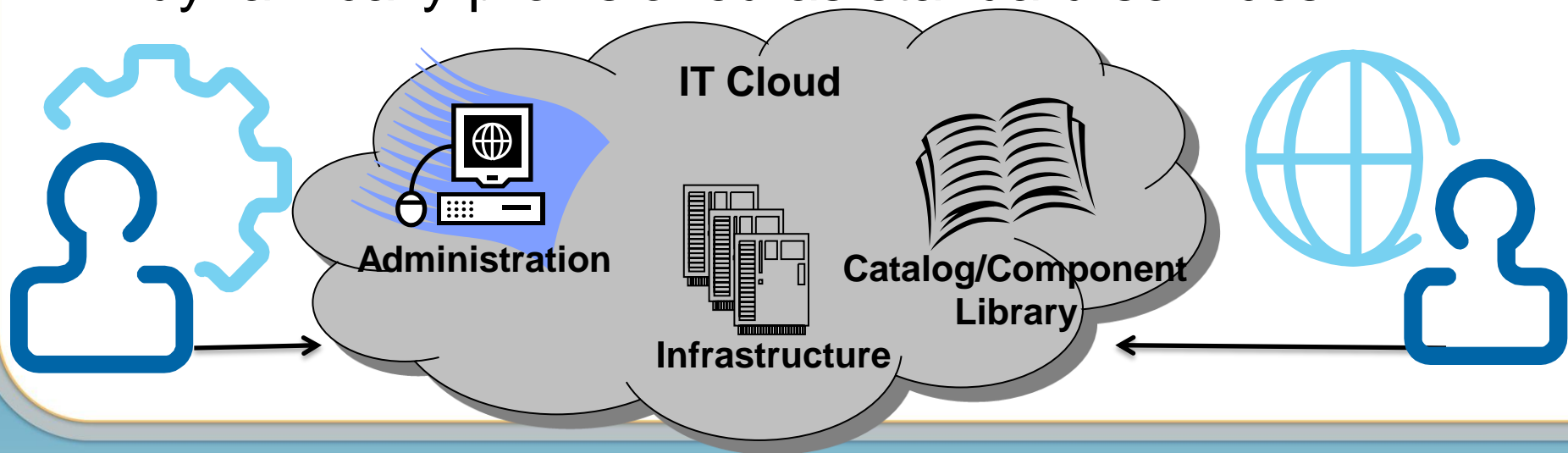
Cloud Computing - drivers



- Business and Cloud Computing
- Reduce amounts of IT capital equipment spending
- Gain flexibility and speed in implementations
- Leverage IT technology evolution

Disruptive = Cloud

- Cloud provider
 - Manage highly virtualized resources to create the illusion of a single, unified resource to deliver elastic, scalable services
- Cloud consumer
 - Consume applications, data, etc that are rapidly and dynamically provisioned as standard services



Cloud Architectures

Vendor Cloud (External) (Public Cloud)

Cloud computing services from vendors that can be accessed across the Internet or a private network, using systems in one or more data centers, shared among multiple customers, with varying degrees of data privacy control.

Private Cloud (Internal)

Computing architectures modeled after vendor Clouds, yet built, managed, and used internally by an enterprise; uses a shared services model with variable usage of a common pool of virtualized computing resources. Data is controlled within the enterprise.

Hybrid Cloud (Mixed)

A mix of vendor Cloud services, internal Cloud computing architectures, and classic IT infrastructure, forming a hybrid model that uses the best-of-breed technologies to meet specific needs.

X as a Service

Infrastructure as a Service (IaaS)

Definition

- Delivers computer infrastructure, typically a platform virtualization environment as a service. Service is typically billed on a utility computing basis and amount of resources consumed.

Customization

- Customization where technology being deployed requires minimal configuration

Operational Notes

- Easier to migrate applications
- User of Cloud maintains a large portion of the technical staff (Developer, System Administrator, and DBA)

Platform as a Service (PaaS)

Definition

- Delivers a computing platform as a service. It facilitates deployment of applications while limiting or reducing the cost and complexity of buying and managing the underlying hardware and software layers

Customization

- Moderate customization - build applications within the constraints of the platform

Operational Notes

- Applications may require to be re-written to meet the specifications of the vendor
- User of the Cloud maintains a development staff

Software as a Service (SaaS)

Definition

- Delivers software as a service over the Internet, avoiding the need to install and run the application on the customer's own computers and simplifying maintenance and support.

Customization

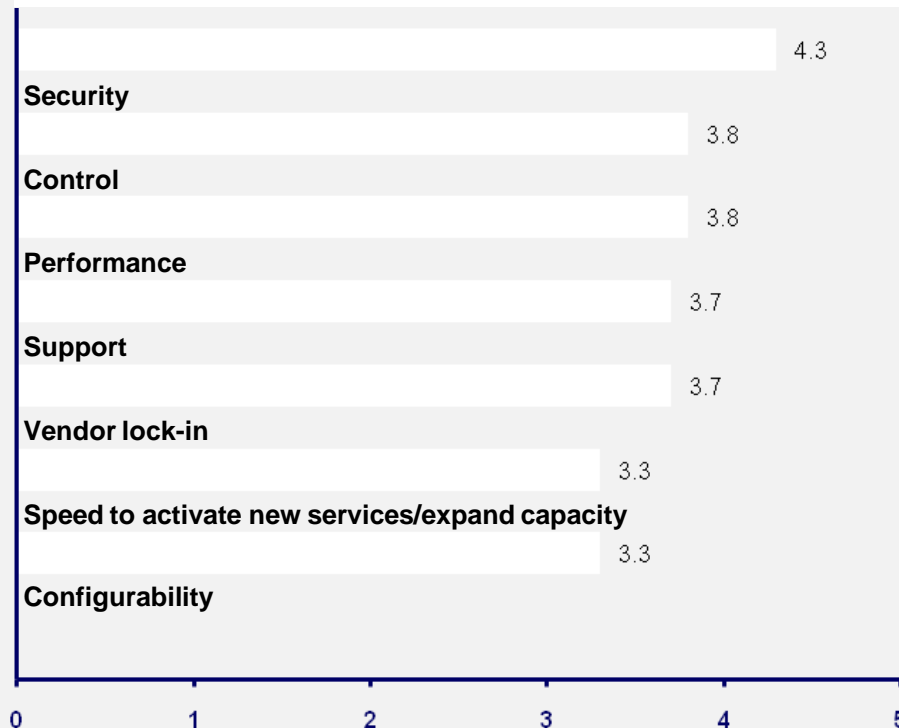
- Limited customization – existing applications will not be able to migrate

Operational Notes

- Applications may require to be re-written to meet the specifications of the vendor
- User utilizes the vendors IT staff and has limited to no technical staff

Security tops Cloud concerns

How concerned are you with following issues as they relate to cloud computing?



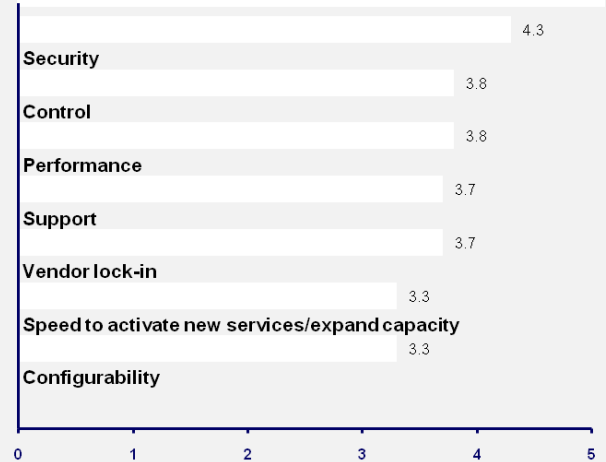
Data: *InformationWeek Analytics Cloud computing Survey of 453 business technology professionals*

A recent survey was conducted of 244 IT executives/CIOs about their companies' use of, and views about, IT Cloud services. Biggest Cloud challenge reported was security.

Clouds, clouds, clouds

- What corporate security policies are in place?
- What type of configuration management is used to protect against accidental changes that could negatively affect security?
- Where is the data?
- How is data backed up?
- How will availability objectives, recovery time objectives, and recovery point objectives be met?
- How will disaster recovery testing occur and will clients have access to truthful results?
- Who will have access to the data?
- Will you have accessibility to the data for audits, etc.?
- Consumer users – Privacy, data usage
- Enterprise users – Encryption, data integrity
- Service providers – Cross-border issues, regulations

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Clouds lead to rain!

- Cloud Computing is here to stay and will become **business as usual**
- Enterprises leverage cloud computing or cloud computing behaviors to change the way they deliver IT enabled business
- Private Cloud is **widespread**
- Supplement with public cloud for non-core activities
- Audit processes must be developed for cloud decisions

Social Networking

Changing communications..

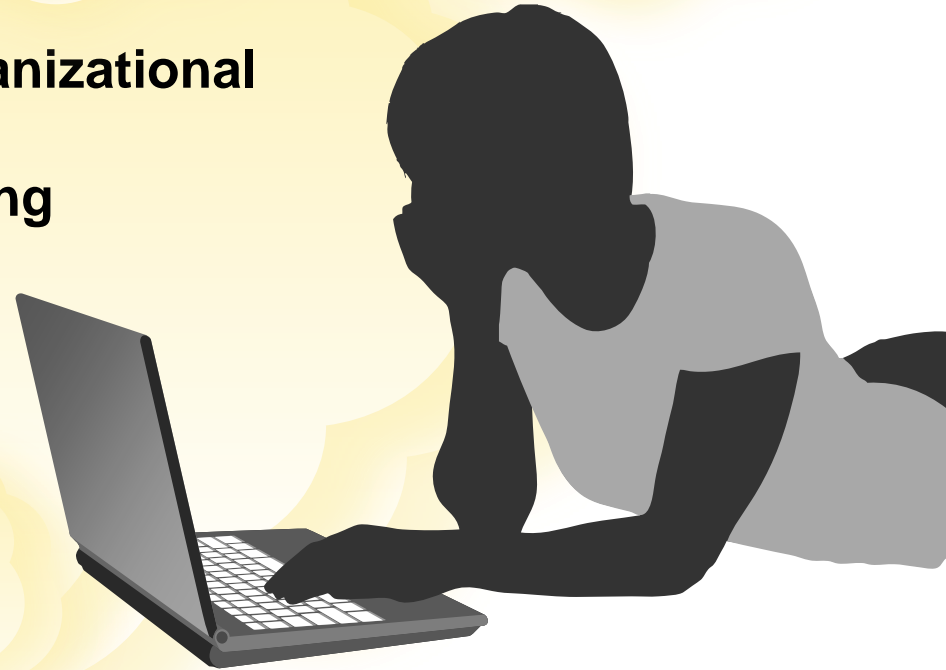


**Personal and organizational
goals
are merging**

facebook

You Tube

salesforce.com ~~SOFTWARE~~
Success On Demand.™



The Rise of Social Media



facebook

Facebook has more than 600 million active users

LinkedIn

LinkedIn has more than 100 million registered users, spanning more than 200 countries

twitter

Twitter has 200 million users, generating 65 million tweets a day

"Social media has played a crucial role in the unrest in Egypt, with many of the protests organized through Facebook."
— BBC News

Social Media Drives Value

Trust in, and value from, information systems

- Enterprises are enjoying numerous tangible benefits of social media:
 - Enhancing brand recognition
 - Better sales
 - Improved search engine optimization (SEO)
 - Higher web traffic
 - Rapid feedback and insight from customers
 - Better ability to monitor the competition
 - Easier ability to search for and communicate with potential employees
- Of the Fortune Global 100 companies,
 - 65% have active Twitter accounts
 - 54% have Facebook fan pages
 - 50% have YouTube video channels
 - 33% have blogs

Smashed guitars

- Smashed guitar
YouTube song United is listening now
 - Last year, while he was flying from Nova Scotia to Nebraska on United Airlines, somebody broke his \$3,500 guitar.
 - But Carroll and his band, Sons of Maxwell, have told their tale with rhythm, harmony, rhyme, not to mention some wicked humor, and their four-minute, 37-second complaint, “United Breaks Guitars,” above, is racking up views on YouTube.
 - The Times newspaper reported that within 4 days of the video being posted online, United Airline's stock price fell 10%, costing stockholders about \$180 million in value
 - More information at <http://www.davecarrollmusic.com/>



You just can't say it!

- Gave away 100 Ford Fiestas to influential bloggers.
- 37 percent of Generation Y were aware of the Ford Fiesta before its launch in the United States.
- 25 percent of Ford's marketing spend has been shifted to digital/social media initiatives
- The only U.S. auto company that didn't take a government loan.

"You can't just say it. You have to get the people to say it to each other"

James Farley, CMO Ford.

Value from Twitter!

Heads up for the bay to basin travelers:
we've got daily flights from SFO, OAK,
and SJC to LGB for as low as \$39 ea ch
way: jetblue.com



2:11 PM Jan 14th from TweetDeck



JetBlue
JetBlue Airways

@AndyBenton Honda outboard engines
are 65% cleaner than what's required by
the U.S. EPA and Environment Canada.
More: <http://twurl.nl/l1y6m1>



5:00 PM Jan 14th from Tweetburner in reply to AndyBenton



Alicia_at_Honda

Employee's use Social Media regardless!



EMPLOYEE USE OF SOCIAL MEDIA—RISKS AND IMPACTS



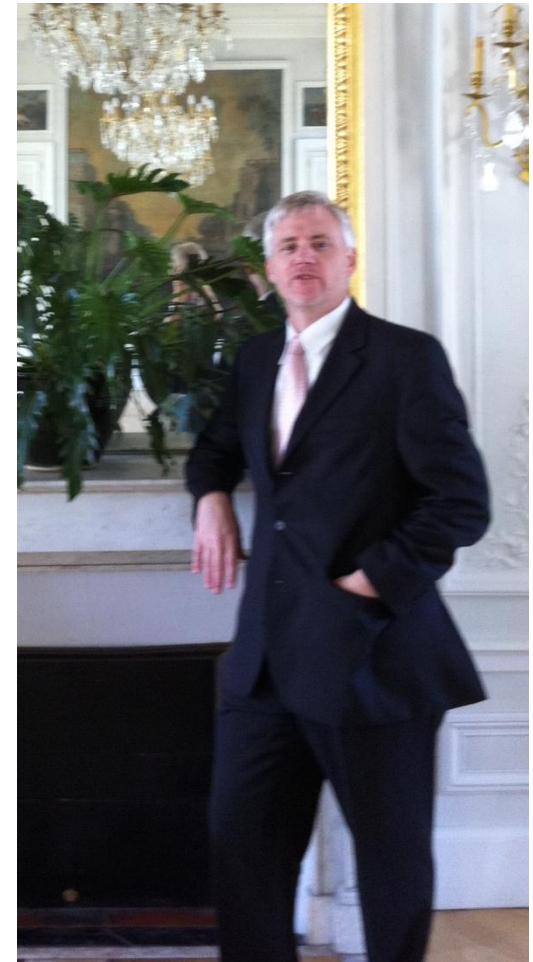
RISK	IMPACT
Use of personal accounts to communicate work-related information	<ul style="list-style-type: none">• Privacy violations• Corporate reputation damage• Loss of competitive advantage
Posting of photographs or information that link users to their employers	<ul style="list-style-type: none">• Brand damage• Corporate reputation damage
Excessive use of social media in the workplace	<ul style="list-style-type: none">• Network utilization issues• Loss of productivity• Increased risk of exposure to viruses and malware
Use of company-supplied mobile devices (such as smartphones) to access social networking sites	<ul style="list-style-type: none">• Infection of mobile devices• Data theft from mobile devices• Data leakage• Bypassed enterprise controls

Top Social Media Risks



Trust Me!

- The greatest risks posed by social media are all tied to violations of trust
- Social media is built on the assumption of a network of trusted friends and colleagues
- Continual education program is critical



Bypass your IT folks!



- Social media doesn't require tools from IT
- Introduced by individual employees

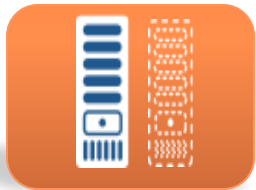
- **Companies should embrace, not block:**
 - **Empower employees with knowledge**
 - **Implement sound social media governance**





Virtualization

“3 clicks, not 3 weeks”



- Lab consolidation — reduced lab locations by 19
 - Average 800 concurrent, active virtual machines
 - >23,000 additional software pushes
 - 48,807 virtual machine provisions



- Cost Savings
 - \$6.5M in labor savings to date
 - Server utilization up 50%
 - Increased server to admin ratio by over 400%

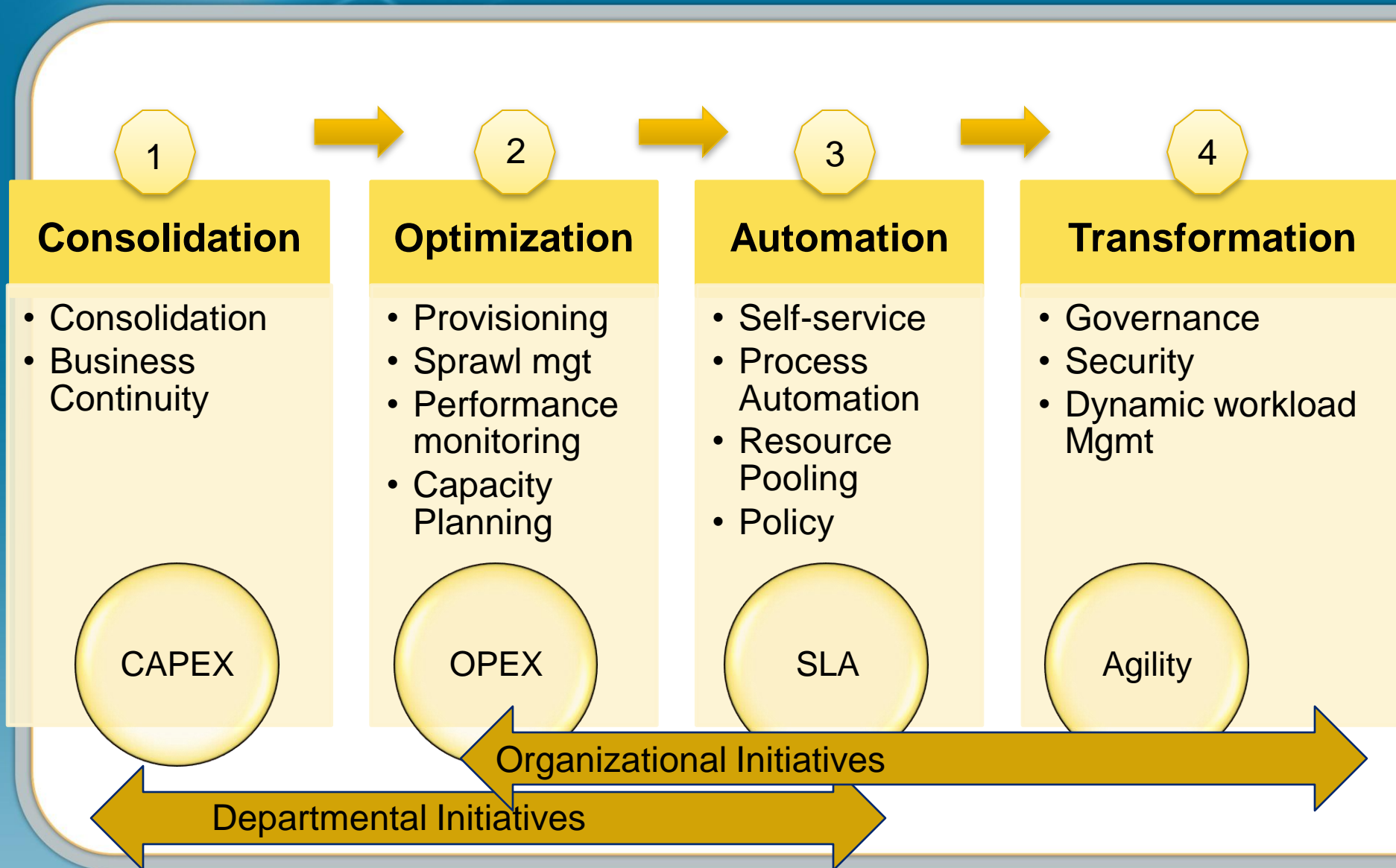


- Real estate savings
 - 19 locations closed, 15,904 sq ft reduction
 - \$2.4 million projected 5 year savings
 - 2,330 machines relocated, ~ 50% virtualized in



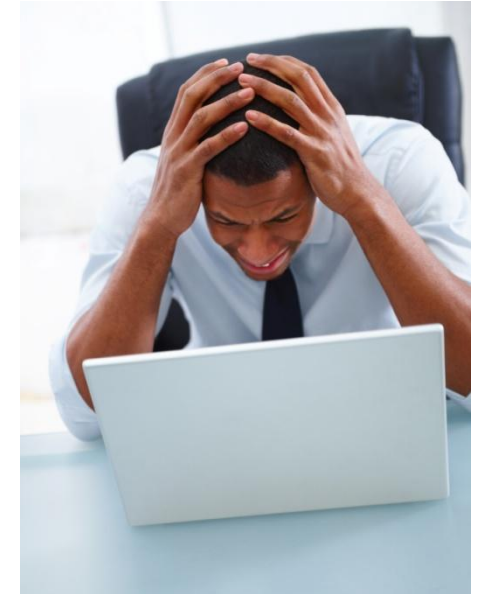
- Automatic power-off between reservations
 - 450 metric tons of carbon reduction

Virtualization maturity curve



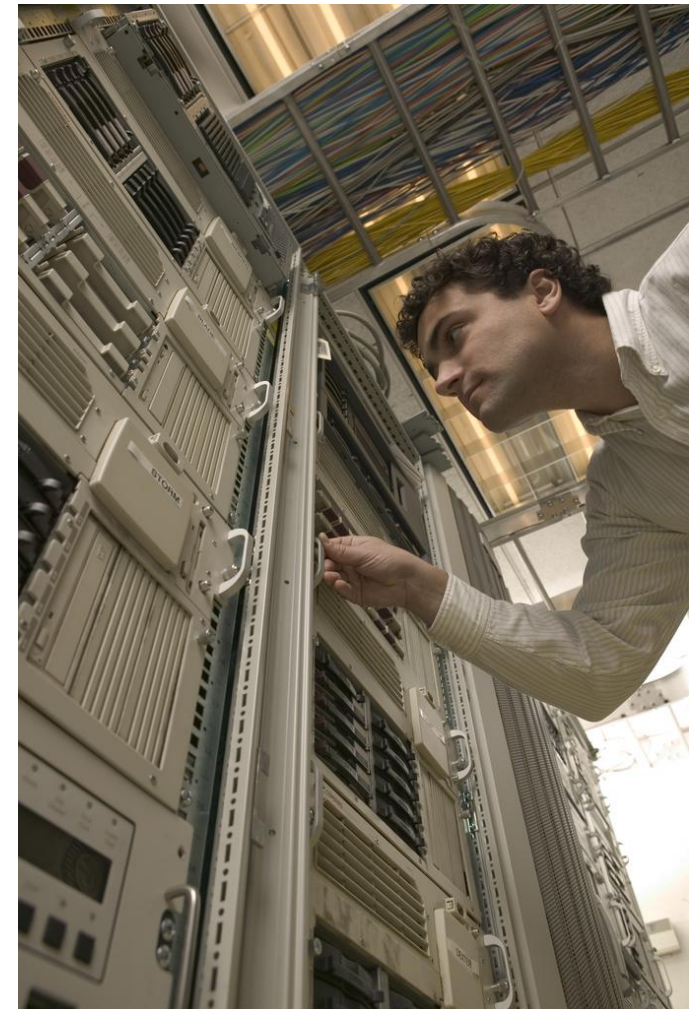
Virtualization

- Virtualization will be a catalyst to drive IT modernization
 - Server
 - Desktop
 - Network
 - Storage
- Managing your corporate access via virtual workspaces include the ability to ensure all corporate data is centrally managed including control of access, backups



Virtualization Issues

- Virtual Sprawl
- Virtual Crawl
- Security
- Hypervisor
- Management across the estate
- Effective automated controls are mandatory!



Security

Security is part of all we do and moderated by risk

- No longer passwords and User ID's
- Granular technological issues have become paramount rather than understanding real security risk
- Cybercrime
- Reputational risk
- Computer assisted crime



The death of IT. . . . as we know it!

“The Baby” to the iPad



Technology moving forward



[Products](#)[myMarketplace](#)

All Categories

Admin Tools 1

Application Development 0

Archiving and Discovery 0

Calendar and Scheduling 0

Customer Management 0

Document Management 2

GeoSpatial Solutions 5

Productivity 3

Social Networking 2

Training and Management 9

Workflow 0

myMarketplace

Create and manage
your workflow.

[Take Me to myMarketplace](#)

HIGHEST RANKED



Casualty Assistance
Program
Training and
Management

Casualty Assistance
Training and Management

7★

LSK Pashio Medical
Productivity

6★

New Soldier Handbook
Training and Management

5★

RECENTLY ADDED: [All Marketplace Categories](#)



iMuster APC, Inc.

123★

iMuster allows users to create a profile to share ideas, events, and interests within their networks.

v1.0, 331.2 MB · 117 Promotions in the last 48 hours



iMuster
Social Networking
APC, Inc.

123★



Versatile Mission Pack

117★

The VMF provides situational awareness and improved communication between boots-on-the-ground soldiers.

v1.2, 231.5 MB · 101 Promotions in the last 48 hours

iMuster

Social Networking

Metric Converter

Productivity

34★

Big Data

More than 168 *million* emails are sent
695,000 status updates and 510,040
comments are published on Facebook

Google serves more that 694,445
search queries

370,000+ minutes of voice calls done
by Skype users

20,000 new posts are published on
Tumblr

13,000+ hours of music streaming
flows from Pandora

More than 13,000 iPhone apps are
downloaded

6,600 images are published on Flickr
600 videos (about 25 hours of content)
are uploaded to YouTube





Cube Runner



Cubes Lite



DizzyBeeFree



DownTime



Dual Level



Eventful



Evernote



ezimba



Facebook



Google Mobile App



GuitarToolkit



Hee Button



iFooty



iPin



Labyrinth Lite Edition



Last.fm



LinkedIn



Locly



MarketingProfs



MIGHTYDocs



Mocha Telnet Lite



myLite Flashlight an...



NeoReader



NetNewsWire



Puzzloop Free



Rain Stick



Relax



Remote



reMovem (free)



Scribble



Shazam



Speed



Stanza



Stitcher Radio



Super Monkey Ball



Talking Portuguese P...



TimeValue Basic



TouchClock



Trailguru



TubeStatus



Twitterrific



Twittervision



VoiceNotes



Wikipanion



WordPress

Growing, growing, growing

Trust in, and value from, information systems

- 2020 – 50 billion networked devices – 7 per person
- More data in 1 day in 2011 than between 1995 to 2000
- A child today can access more information than a physician 15 years ago
-

CEO priorities “return to growth” drive new implications for CIOs



CEO Priorities

Grow through innovation

Drive growth and competitive differentiation through innovation?



Attract and retain new customers

Grow market share through a positive corporate image?



Maintain cost efficiencies

Continued cash and profit generation?



CIO Challenges

Increase speed and agility

Find new ways to serve the business by delivering services faster and more cost effectively?

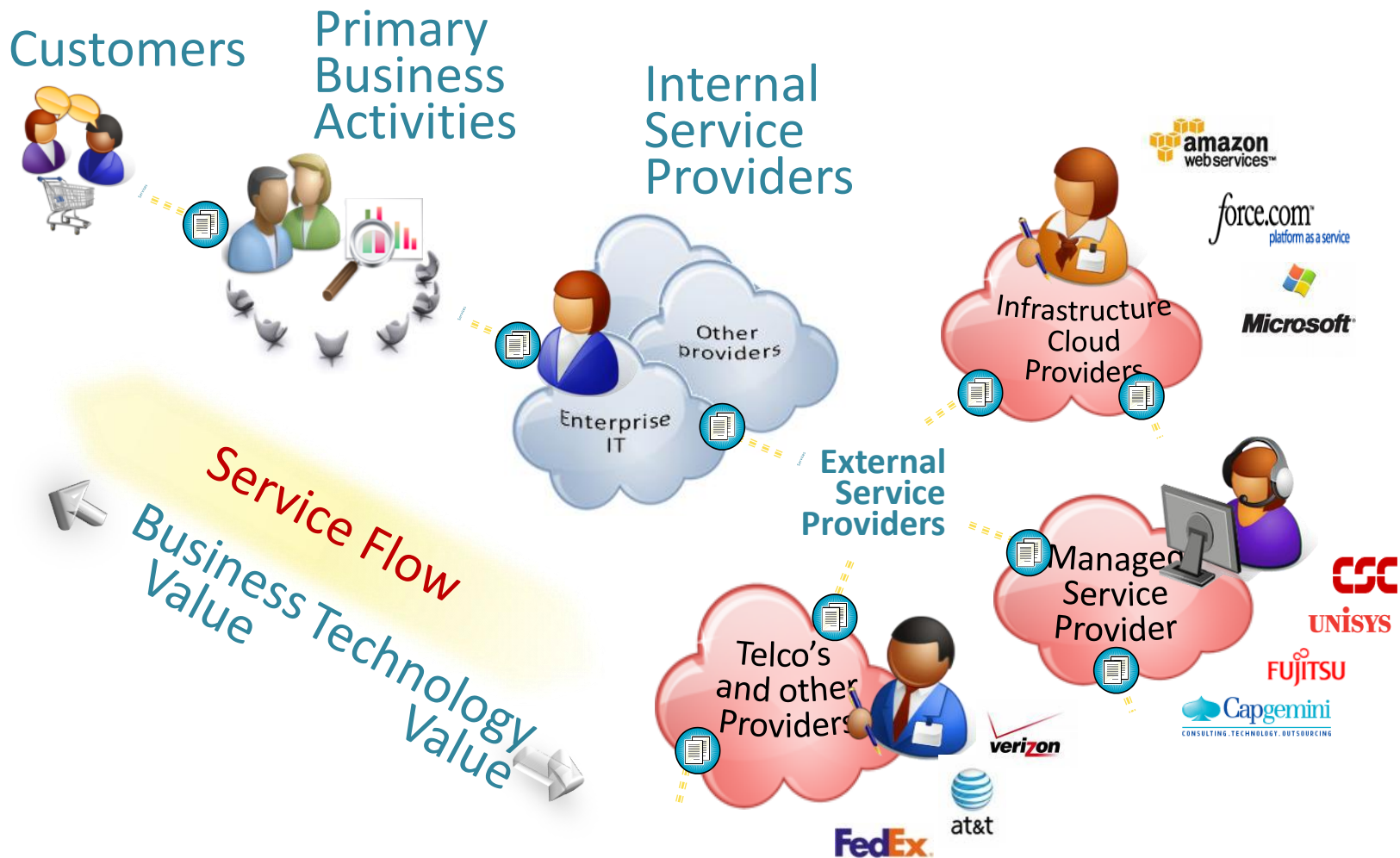
Mitigate risk

Resolve risk and security issues transparently for your business?

Reduce IT costs

Embrace innovation for competitive differentiation *and* reduce costs?

IT of tomorrow. . . .

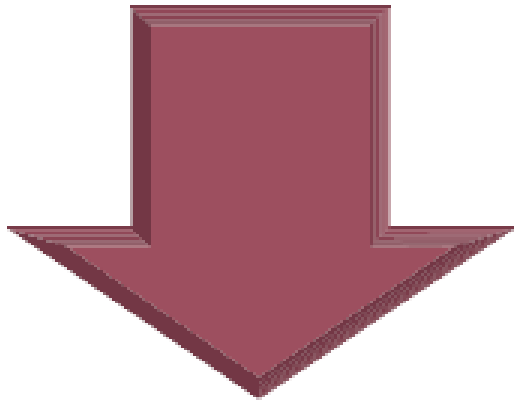


Effective ERM MUST be your best friend!



IT typically mitigates risk – we may need to accept it!

IT as Value Inhibitor or Destructor



IT Risk

- Unrealised or reduced business value through IT
- Missed IT-assisted business opportunities
- Adverse IT-related events destroying value

IT Opportunity

- Identification of new business opportunities through use of IT
- Enhanced business value through optimal use of IT capabilities



IT as Value Enabler

- IT risk is the business risk associated with the use, ownership, operation, involvement, influence and adoption of IT within an enterprise.
- IT risk always exists, whether or not it is detected or recognised by an organisation



Risk can deliver value

- Risk and value are two sides of the same coin
- Risk is inherent in everything we do
- Balance with and reward
 - Avoid value destruction
 - Allows value creation



Audit role in the future

Audit role in the future

- Audit - strategic advisor
- Assist the business to understand and determine risk posture and implications
- Continuous auditing – the time is now!
- Audit against benefits realization
- Be ahead of the technology innovation curve, not behind it



Role of Internal Audit in cloud computing

	Role of Audit	Risks Involved
Requirements	Understanding the business case Align requirements to the corporate policies and requirements	Incomplete requirements Poorly designed business case Requirements are not aligned within corporate policies and requirements
Vendors	Vendor evaluation and selection Update business case	Incomplete selection criteria
Implementation	Prioritization of migration Vendor contract	Controls not considered Insecure design
Test	Select area to pilot Migrate areas to test cloud	Non existent/ineffective controls Inadequate testing
Migration	Build infrastructure Migrate data and processes	Inadvertent exposure of data Business processes don't work as expected
Validate and Monitor	Decommission legacy systems SAS70, ISO etc	Loss of financial records Loss due to inadequate monitoring

Is IT Dead or is this
just the beginning?

Recommendations

- Technology is evolving at a rate we cannot comprehend
- The role of IT will change dramatically as the CIO becomes the “Chief Innovation Officer”
- Risk Management becomes a value creator
- Security is a critical component
- Communicate!

As my y gens say

- TY 4 YR Time 2day!
- CU I8R
- BG
- LOL (not “lots of love”)
- Text me DAD!

Thank you



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Thank you!

