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October 11-14, 2010
The Gaylord Texan
Dallas, Texas

360 View of Storage and The Cloud

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Agenda

- Exploring the Cloud Menagerie
- IT and Storage in the Cloud
(What is it good for?)
- Private Cloud or Converged IT
(What's the Difference?)
- Predictions and Final Thoughts
- Questions



What is Cloud for Providers of IT Hardware, Software, and Services?

- Cloud is an architecture
 - Services-oriented applications running on converged servers, storage, and networks in an optimally managed and designed data center
- Cloud is a customer base
 - BPaaS, SaaS, Web 2.0, and other service providers
- Cloud is a delivery strategy (ITaaS)
 - Basic IT resources (Capacity, processing)
 - Advanced IT applications
 - asset management
 - information management
 - security

What Is The Cloud?

Welcome to the Cloud Menagerie

Shared consumer and/or business products, services and solutions delivered and consumed in real-time over the Internet

Public Cloud



Standard services-optimized applications on virtualized and automated systems/storage accessible via Internet standards (internal or hosted)

Private Cloud



An overhyped idea that is about getting companies to redo their IT infrastructure and application environment, yet again

Hype Cloud



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Many Dimensions of Cloud

Who has access to it? → **Public/Marketplace**
→ **Private/Enterprise, extended enterprise**

Where is it? → Customer premises (e.g., private cloud)
→ 3rd party premises (e.g., public cloud, virtual private cloud)
→ Both (hybrid cloud)

Who's operating it? → Customer staff (e.g., private cloud)
→ 3rd party staff (e.g., public cloud, virtual private cloud, managed private cloud)

How is it deployed? → Remote service
→ Local system, custom-developed/integrated
→ Pre-integrated Appliance – SW only,
SW-HW integrated, et al

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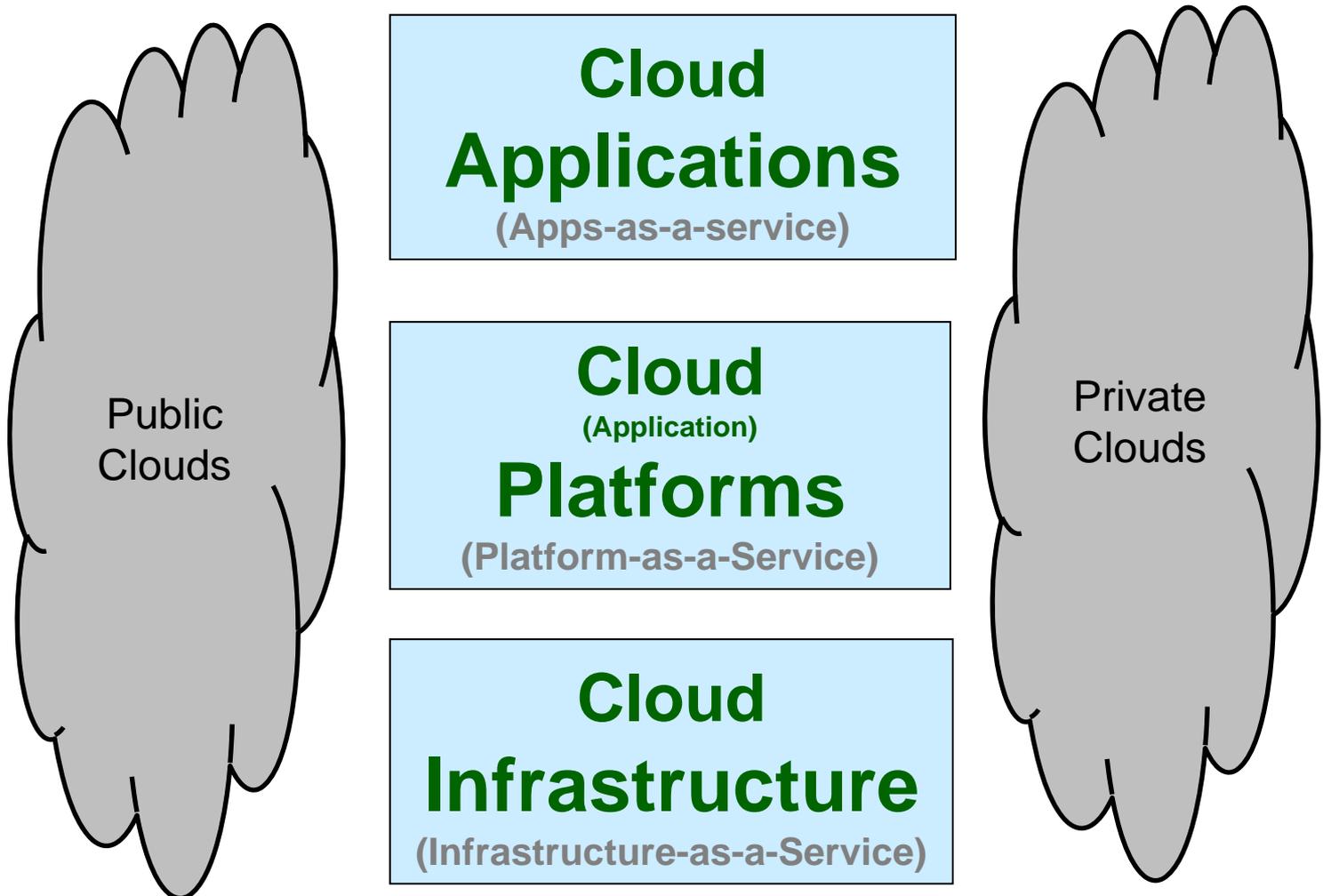
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Three Major Layers of IT Cloud Services



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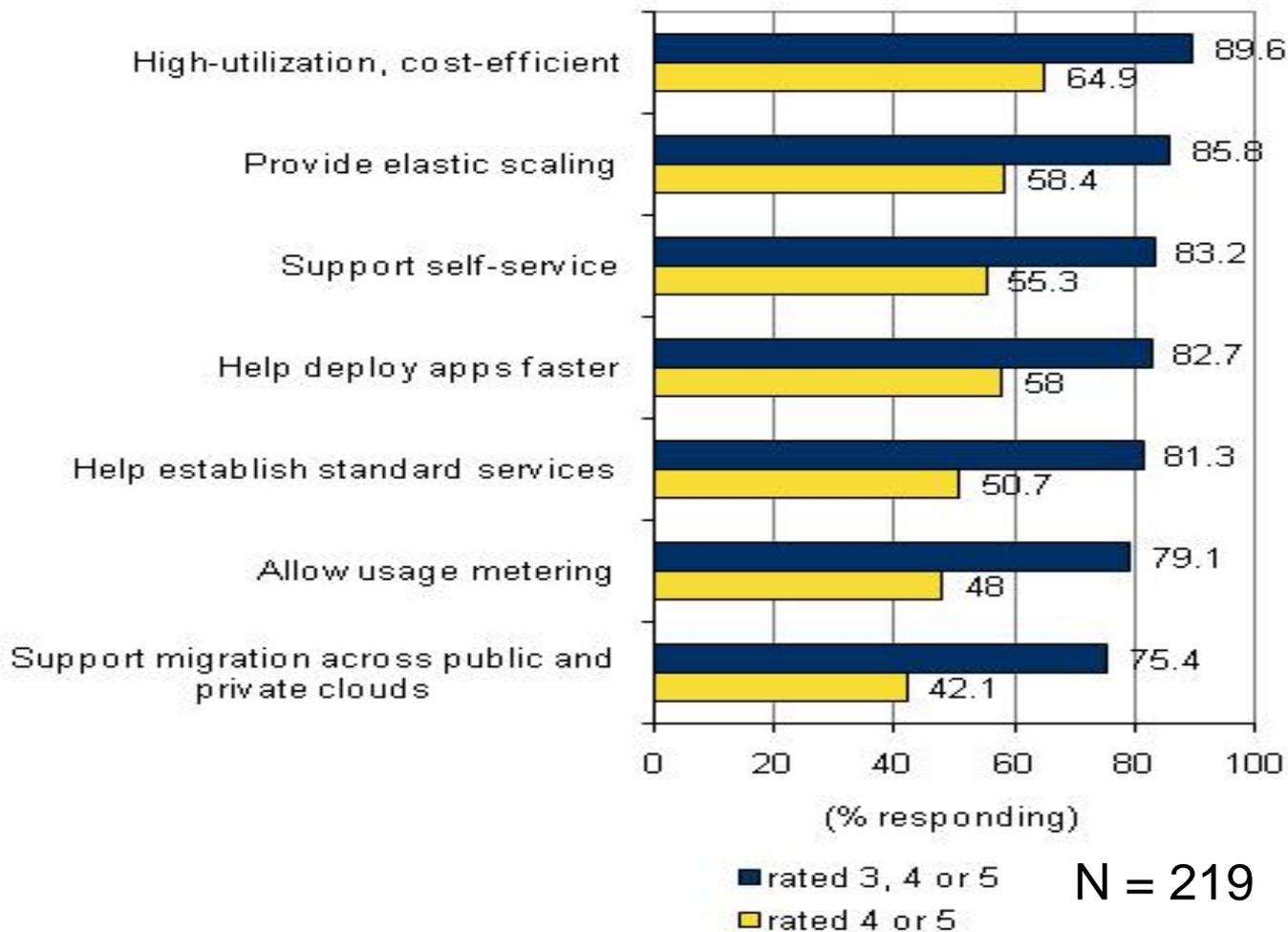
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What's So Appealing About Cloud



Source: IDC's IT Cloud Services Survey, Q2 2010 (# 225021)



Why Use the Public Cloud?

- Cloud solutions address many business requirements
 - I don't want to build a data center
 - Lower cost of entry for start ups (SaaS, Web 2.0, departments, etc...)
 - Its where the users are
 - Efficient delivery of information/applications to Internet and mobile users
 - I have a temporary problem
 - IT on-demand for intermittent, bursty or unpredictable workloads (e.g., reporting, analytics, media launch)
 - I need to park some data for a long time
 - Lower/shared cost solutions for long term archiving of digital assets (medical records, personal images, backups. eDiscovery archives)

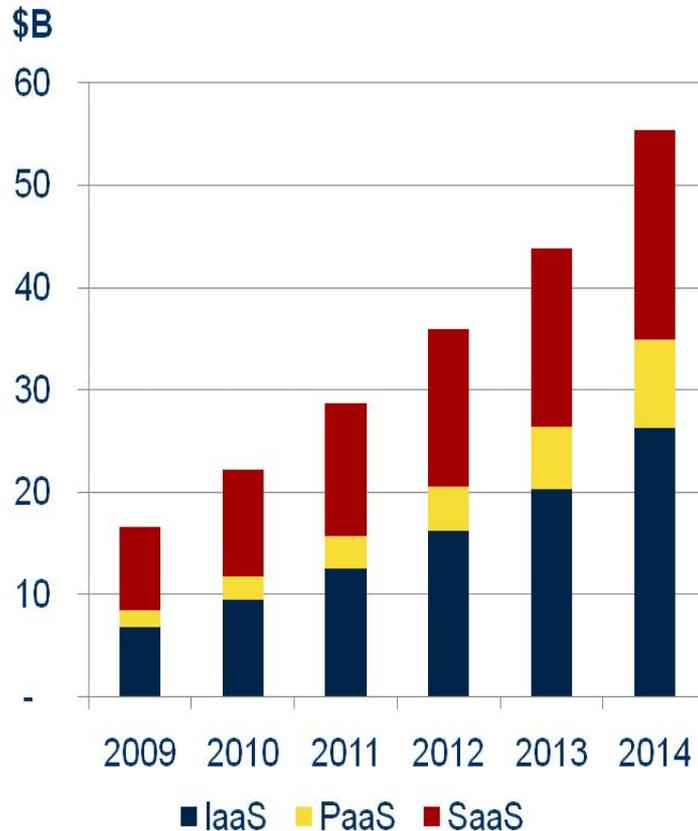
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WW Public Cloud Services Revenue



Source: IDC Worldwide and Regional Public IT
Cloud Services 2010–2014 Forecast (# 223549)

- Public IT cloud services will grow at over five times the rate of traditional IT products
- Mix will shift toward more IaaS and PaaS
 - Emergence of wholesale IaaS market
 - PaaS becomes primary entry point
- US dominance will begin to fade
 - 70% in 2009
 - 51% in 2014

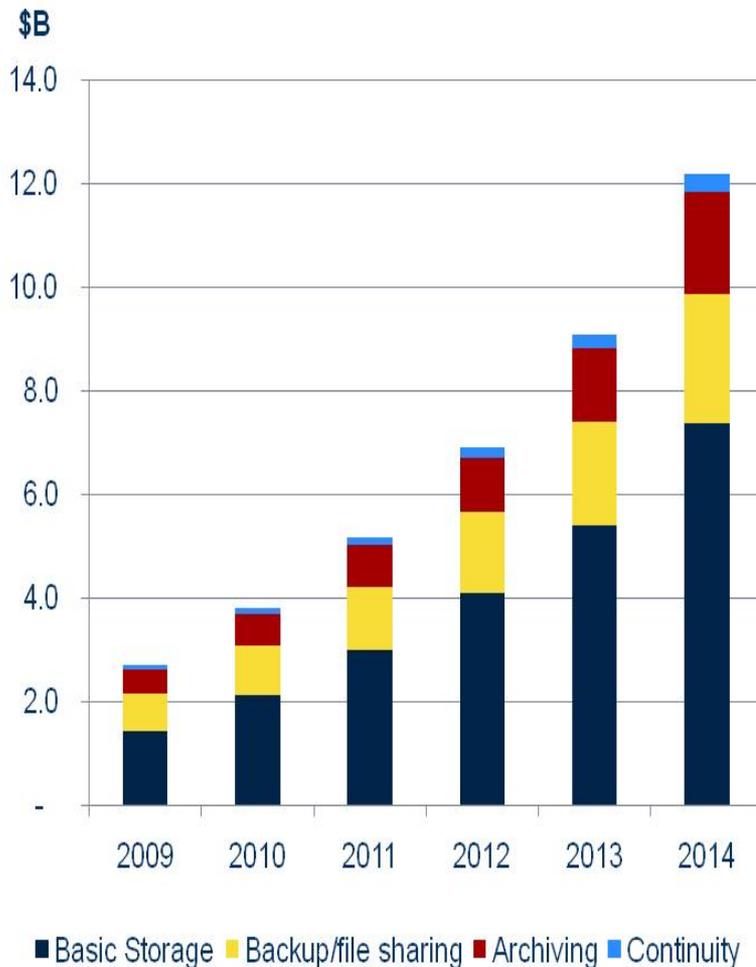
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WW Public Cloud Storage Services



Source: Worldwide Storage in the Cloud
2010–2014 Forecast (# 223396)

- Majority of basic storage service revenue is resold as part of other services
- SMB/consumer account for most of backup/sharing revenue
- Archiving is still limited by regulations and long term storage cost issues
- Continuity/DR is wildcard
 - Requires closer links with cloud compute service offerings



Some Radical Thoughts on Public Cloud

- Virtualization is the gateway drug
 - Finally cutting the physical device umbilical
- Cloud is not just the “Horseless” Buggy
 - New applications before replacement
 - Business units, not IT are main drivers
- You too may soon be a cloud provider
 - Are your ready?

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What about Private Clouds?

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What Is Converged IT Infrastructure

Converged IT Infrastructure treats server, storage, and network infrastructure resources as pools, to be assigned as needed to Business Services

Converged Infrastructure Maturity Map

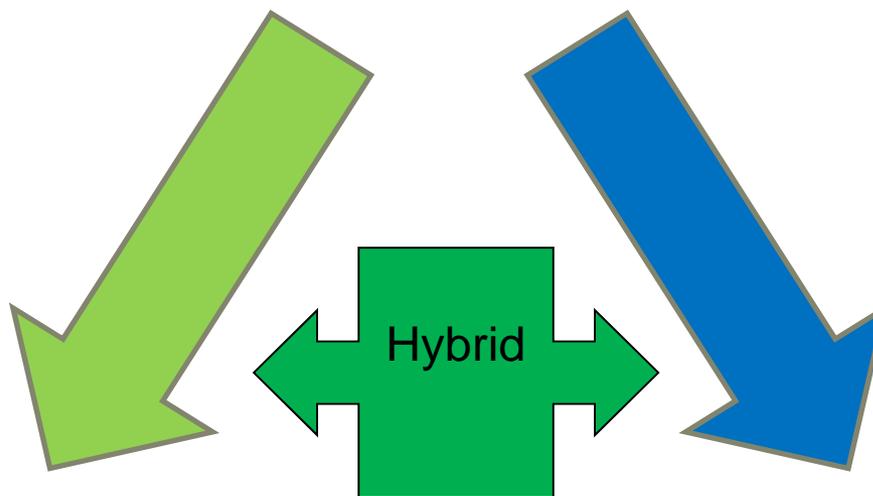
Phase 1
Integration Of traditional hardware functionality (e.g. combining servers, storage, and network in standard bundles or Pods)

Phase 2
Tight integration of control (and application) software with hardware in the Pod

Phase 3
Integration of services provisioning and coordinated resource management across Pods and data centers (Private Cloud)

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2 ½ Paths to Convergence/Cloud



General Purpose (IaaS)

Common pool of IT assets

- Compute
- Storage
- Infrastructure services

Dedicated (PaaS or SaaS)

Tuned IT assets for each service

- Analytics/Database
- Collaboration
- New App development

What Are The Top Two Challenges To Converged IT Infrastructure?



Total	N=250
Cost Prohibitive	39%
Skilled Staff	32%
Difficult To Integrate With Existing Infrastructure	29%
Cultural Barriers	15%
Security	12%
Don't Know	10%
Technology Maturity/ Imaturity	9%
Vendor Lockin	5%



Source: IDC Enterprise Platforms Survey, Jan 2010 (N=255)

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Tips for Making the Move to Converged Infrastructure and Private Clouds

- Clearly Understand The Impact Of Network Convergence
 - Converged Infrastructure requires enhanced I/O and networks
- Embrace Standardization
 - Legacy systems need a seamless transition path
- Implement A Mature Approach To Management Operations
 - Invest in performance monitoring & analytics
 - Install a charge back system



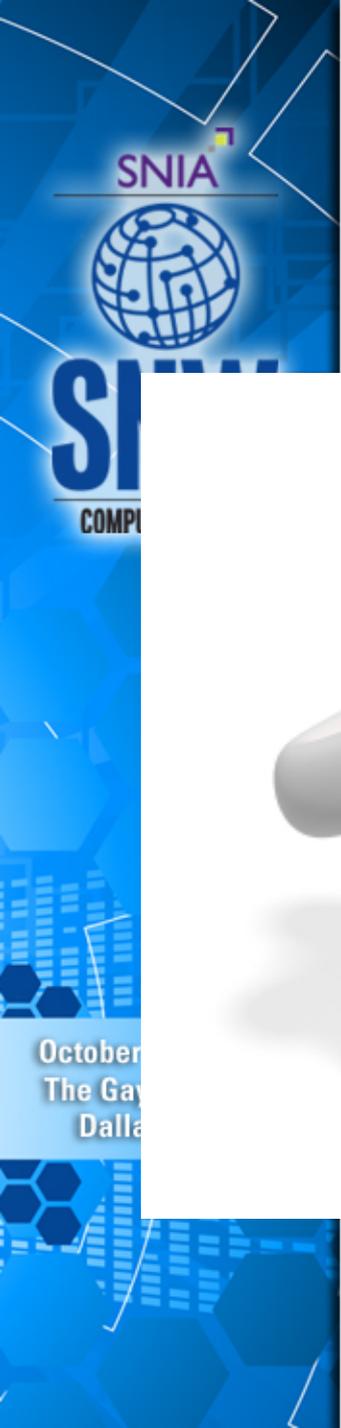
Predictions: Storage and The Cloud

- Would you like some cloud with that storage (Cloud extensions to NAS/iSCSI storage)
 - Addresses SOME channel concerns
 - Local control of namespace and security
 - Drives shift to per TB pricing for data management
 - When will major storage players enter?
- Emergence of the Private Storage Cloud
 - Private Cloud isn't just about compute
 - Private cloud for archives and DR
- Cloud Storage and DR: The Next Big Thing
 - Recover from the cloud and recovery in the cloud
 - Virtual versions of standard arrays



Essential Guidance: Rethink Your IT Organization For Clouds

- Information Facilities Team
 - Build, run, and optimize the “stuff “ in transformed data centers
 - Less about administering individual components and more about ensuring the entire facility is performing optimally
 - Will serve as the primary administrators of public and private cloud infrastructure offerings
- Information Services Team
 - The face of IT when someone wants a new capability
 - Leaders in transition to a more services-orient IT model and evaluators of cloud-based platform and application services.
 - Comprehends the full life cycle of an application/service from idea, to launch, to refresh, to end of life
- Information Access Team
 - Ensuring the "right" people securely access information anytime and on any desired device (laptop, smartphone, or smart tablet)



Questions?

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