


Hey You, Get Onto My Cloud

Leading change to the cloud

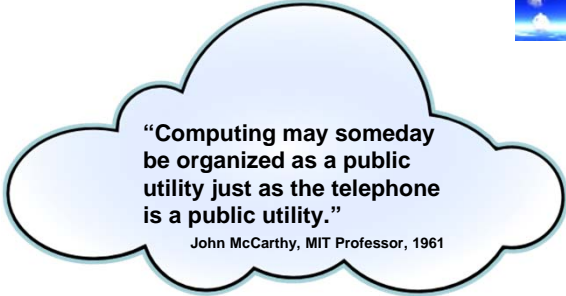
“You never change things by fighting the existing reality. To change something, build a new model that makes the existing model obsolete.”

—R. Buckminster Fuller, American inventor and futurist



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What is cloud computing?

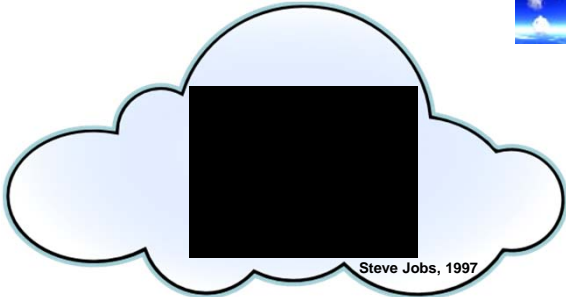


“Computing may someday be organized as a public utility just as the telephone is a public utility.”

John McCarthy, MIT Professor, 1961

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What is cloud computing?



Steve Jobs, 1997

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The first cloud service – Salesforce.com



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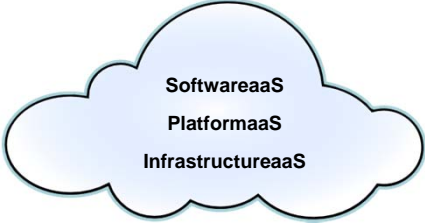
Cloud characteristics

- Real-time accessible computing infrastructure
- Constant availability and SLAs
- Scalable on the fly
- Easy Web management interface
- Security/privacy
- Supports apps/services/storage
- Access by others – public cloud
- Access only by you – private cloud
- Access in both public and private areas – hybrid cloud



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Cloud computing – “as a Service”

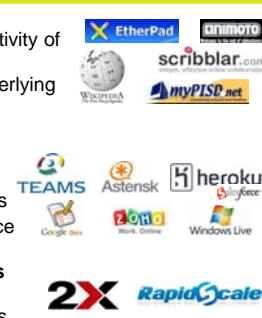


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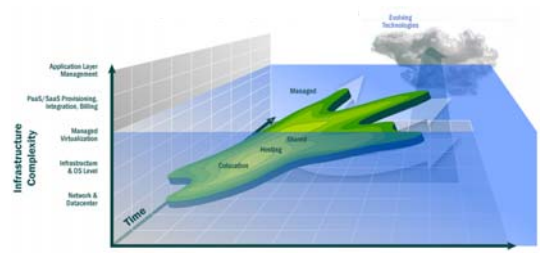
Cloud services: Web 2.0, SaaS, remote apps

- **Web 2.0**
 - Interconnectivity and interactivity of web-delivered content
 - New services exploiting underlying platforms
- **SaaS providers**
 - Run on top of underlying cloud infrastructure platforms
 - ERP, VoIP, BI, Web presence
- **Remote desktop applications**
 - Run on top of underlying cloud infrastructure platforms



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Amazon (EC2) – the largest cloud provider



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Amazon (EC2) – the largest cloud provider



How Amazon Powers the Internet
It began as a way for Amazon's engineers to work together efficiently. Now Amazon Web Services hosts some of the most popular sites on the web and is responsible for a significant amount of the world's online traffic. Here's a look at some of the companies that rely on Amazon's cloud computing platform.

Customer	What it uses Amazon Web Services for
FourSquare	3 million check-ins a day
Harvard Medical School	Real-time processing for genomics research
NASA Jet Propulsion Lab	Processing of its own satellite images to help guide its robots
Netflix	Video streaming service that accounts for 25% of US internet traffic
Newsweek/The Daily Beast	1 million pageviews every hour
PBS	
SmugMug	Storage for 10 billions of photos and videos
US Department of Agriculture	Geographic information systems for food storage recipients
Virgin Atlantic	Cloudsourced travel review service
Wp	Data storage for its 27 million plus revenue

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Amazon (EC2) – the largest cloud provider



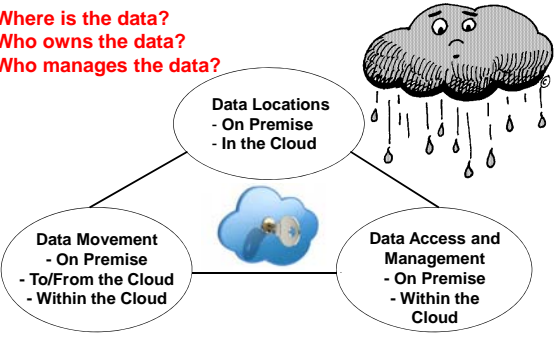

Competing Visions
The Kindle Fire isn't just a rival to the iPad; it represents an alternate model of computing: it's Apple's post-PC vs. Amazon's post-web.

Apple: Post-PC	Amazon: Post-Web
Device-centric	Cloud-centric
Own the OS	Forget the OS
Specialized apps	Specialized browser
Hardware is king	Content is king
Downloaded media	Streamed media

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Cloud computing – critical factor

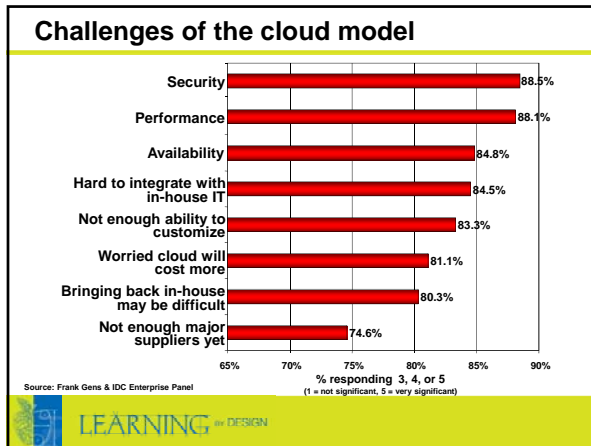
- Where is the data?
- Who owns the data?
- Who manages the data?

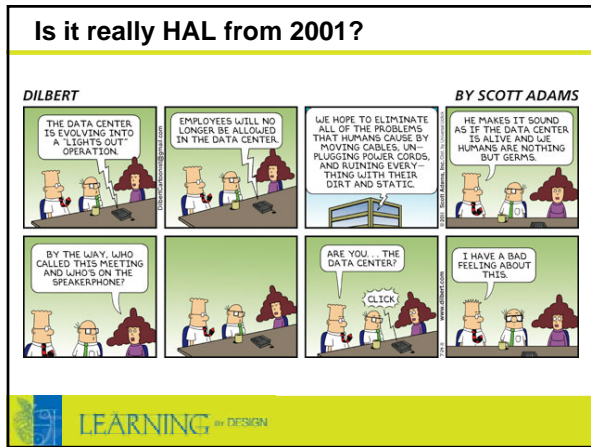


The diagram features a central cloud icon with three surrounding ovals. The top oval, titled 'Data Locations', lists 'On Premise' and 'In the Cloud'. The bottom-left oval, titled 'Data Movement', lists 'On Premise', 'To/From the Cloud', and 'Within the Cloud'. The bottom-right oval, titled 'Data Access and Management', lists 'On Premise' and 'Within the Cloud'. A cartoon cloud with a face and raindrops is positioned above the 'Data Locations' oval.

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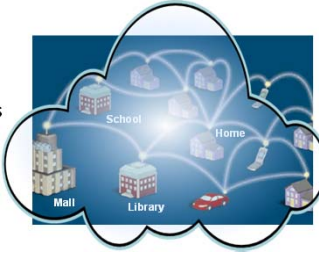
Jim Hirsch

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Access into the cloud

Connecting learners...

- In classrooms
- At home
- On the street
- At their friends' homes
- At Starbucks
- On multiple devices
- Everywhere
- All the time

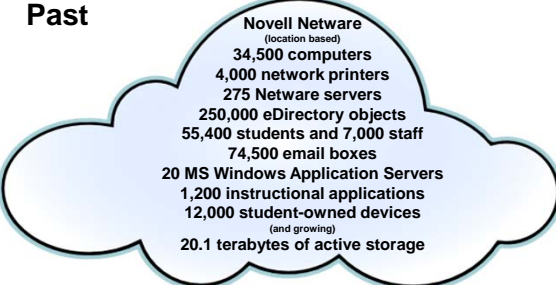


"Things that think want to link"
Nicholas Negraponte, MIT Media Labs

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Transitioning to cloud computing

Past

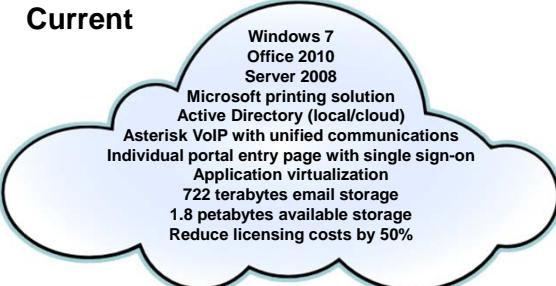


- Novell Netware (location based)
- 34,500 computers
- 4,000 network printers
- 275 Netware servers
- 250,000 eDirectory objects
- 55,400 students and 7,000 staff
- 74,500 email boxes
- 20 MS Windows Application Servers
- 1,200 instructional applications
- 12,000 student-owned devices (and growing)
- 20.1 terabytes of active storage

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Transitioning to cloud computing

Current




- Windows 7
- Office 2010
- Server 2008
- Microsoft printing solution
- Active Directory (local/cloud)
- Asterisk VoIP with unified communications
- Individual portal entry page with single sign-on
- Application virtualization
- 722 terabytes email storage
- 1.8 petabytes available storage
- Reduce licensing costs by 50%

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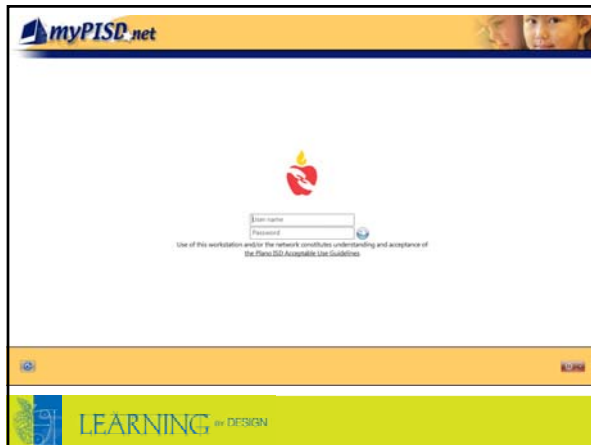
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Identity management

- Completed the full directory migration in one day
- ETL from two major information systems (ERP and Pinnacle DB)
- Access Request Management System (ARMS)
 - Account management
 - Application access
 - Group management
- Data Synchronization System (DSS)
 - Move, transform, and validate data between systems



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myPISD.net

Use of this workstation implies the network constitutes understanding and acceptance of the PISD ISD Acceptable Use Guidelines

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Which primary cloud solution?



The diagram compares three cloud solutions: Amazon Web Services, Google Cloud Connect, and Salesforce. Amazon Web Services is shown with a cloud icon and the text 'amazon web services'. Google Cloud Connect is shown with a cloud icon and the text 'Google Cloud Connect'. Salesforce is shown with a cloud icon and the text 'salesforce'. A central diagram shows 'Hosted Applications' and 'On-Premise Applications' connected to a cloud icon. To the right, a list of services is shown: Windows Cloud, Windows 10, SQL Server 10, Exchange 10, Sharepoint 10, and Office 10.


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Microsoft Live@EDU



- 1 • Integrated with the Microsoft product suites
- 2 • Fat client (Outlook) hooks directly into Live
- 3 • Mobile device integration is native for this format

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Additional cloud apps



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TRANSFORMING PEDAGOGY WITH TECHNOLOGY
IT'S Personal!

TIES 2011

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Jim Hirsch