



Cloudy Topics

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Topics

- **Introduction to Cloud computing**
 - Including Software as a Service (SaaS), Information as a Service (IaaS) and Platform as a Service (PaaS) aspects
- **Customer vs. Provider responsibilities**
 - Including Third Party Content issues

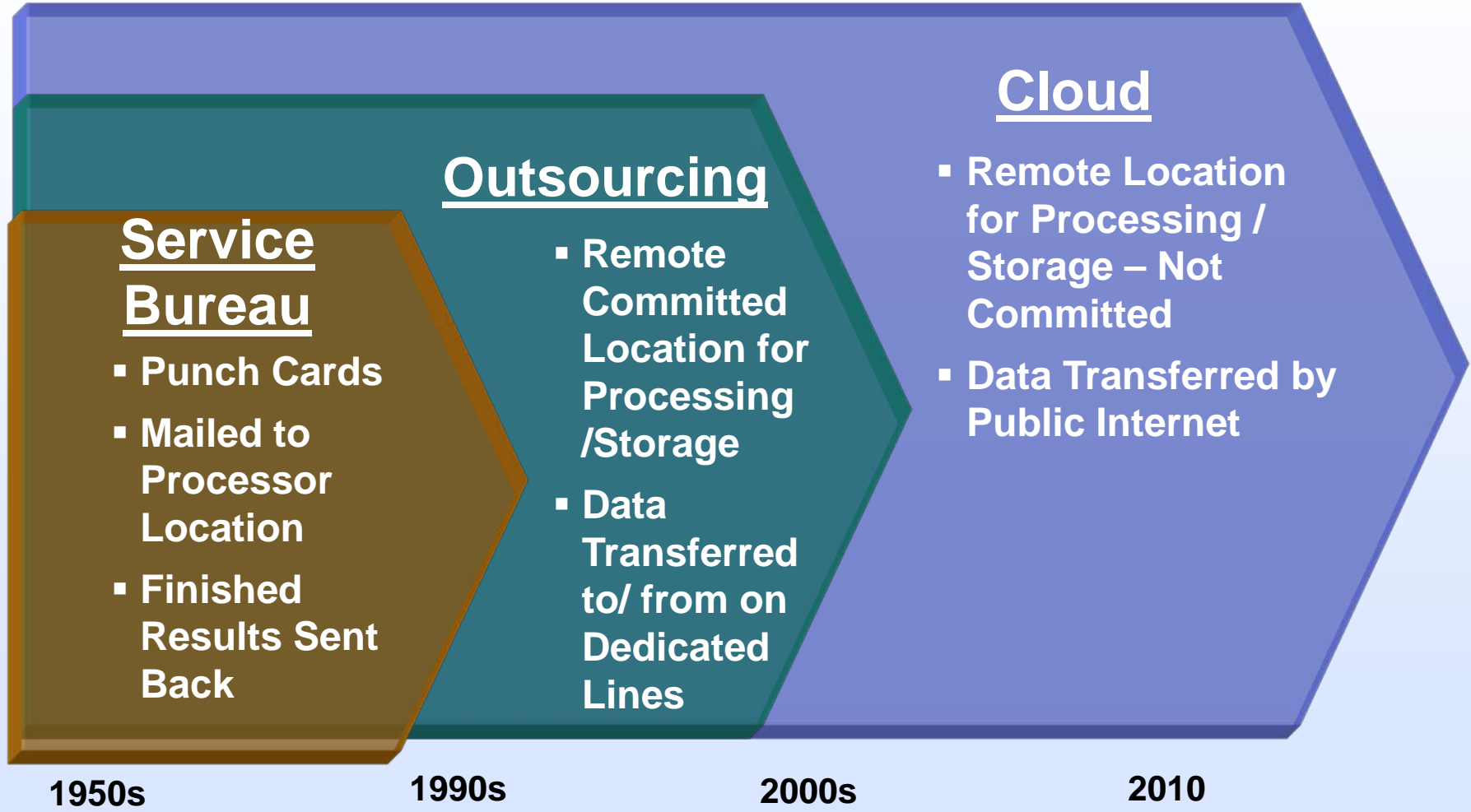
Introduction to Cloud computing: Definitions

- **Cloud computing is Internet ("cloud") based development and use of computer technology ("computing"). It is a style of computing in which dynamically scalable and often virtualized resources are provided as a service over the Internet. Users need not have knowledge of, expertise in, or control over the technology infrastructure "in the cloud" that supports them. Wikipedia 3-06-09**
- **An emerging computing model by which users can gain access to their applications from anywhere, through any connected device. A user-centric interface makes the cloud infrastructure supporting the applications transparent to users. The applications reside in massively scalable data centers where computational resources can be dynamically provisioned and shared to achieve significant economies of scale. - IBM**

Is Cloud computing new?

- Cloud computing evolved from existing technologies
- Not the same as **Grid computing** – but similar goals
- Not the same as **Utility computing** – but can provide utility computing
- Not just **Provisioning** – but use provisioning
- See “Above the Clouds: A Berkeley View of Cloud Computing” at <http://d1smfj0g31qzek.cloudfront.net/abovetheclouds.pdf> for additional discourse

Evolution to Cloud computing



Types of Cloud computing

Public Cloud:

- **Cloud computing involves providing applications, data and IT resources as services to users over the web**
- **Cloud computing is a way of managing large numbers of virtualized resources such that they resemble a single large resource**

Private Cloud:

- **An Interim Solution...**
 - **Converting existing Data Centers into Cloud computing centers**
 - **Reduces some of the security, management, control issues**
 - **Allows a focus on a subset of applications and their interactions**
- **Private Clouds provide many of the benefits of Cloud computing for people with existing Data Centers**
- **Allow a near term focus on optimizing the management of the data center**
- **Allows utilization of existing infrastructure and capacity planning**

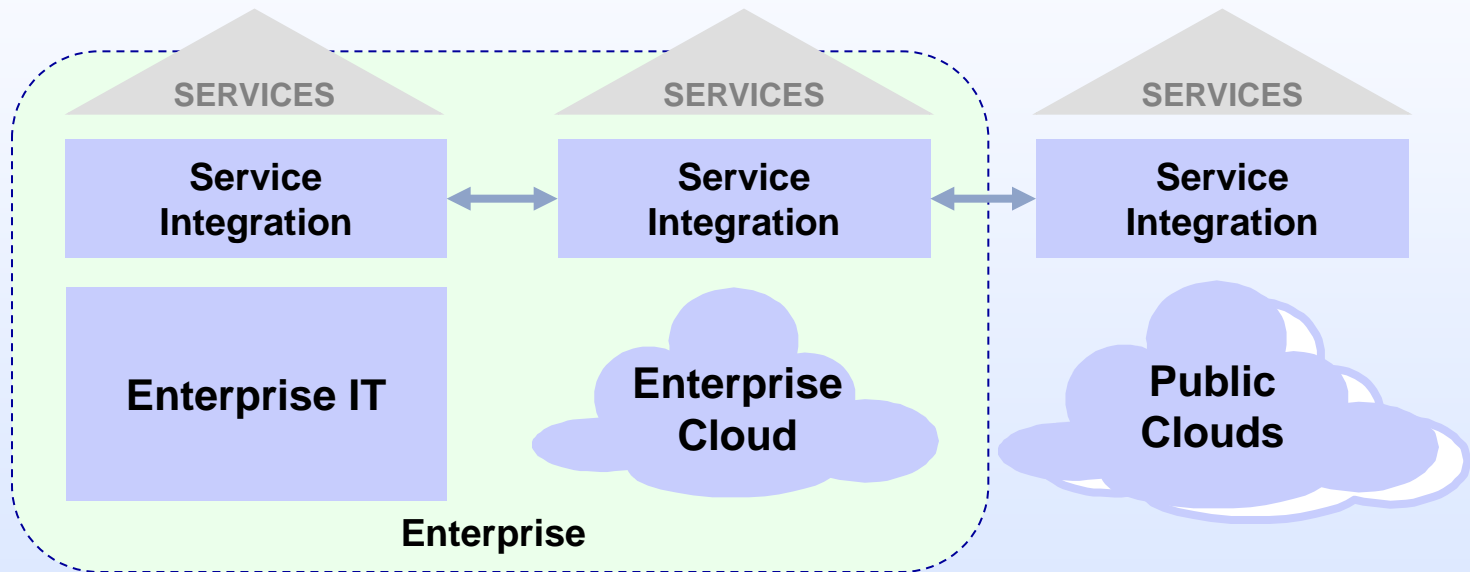
Why is There Interest in Cloud computing?

- **Dramatic increase in the amount of data which companies must process and manage (ie, offload to others)**
- **Corresponding increase in IT systems and services costs (ie, cost effectiveness)**
- **Complexities associated with a rapidly growing IT environment (ie, potentially less complex)**
- **Availability of systems and applications (ie, ready supply, easier deployment)**
- **Energy costs and requirements (ie, potential reductions)**

Various models of Cloud computing

Consumers & Organizations


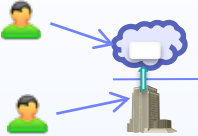

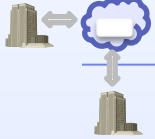
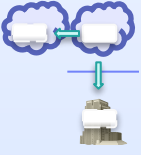

BUSINESS MODELS



Various cloud components



Cloud Usage Models

<p>1. End User to Cloud - Application running on the cloud with access for end-users</p>	
<p>2. Enterprise to Cloud to End-user (Interoperability) - Applications running in the public cloud – access from employees and customers</p>	
<p>3. Enterprise to Cloud (Integration) - Cloud application integrated with internal IT capabilities</p>	
<p>4. Enterprise to Cloud to Enterprise (Interoperability) - Cloud application running in the public cloud and interoperates with partner applications (supply chain)</p>	
<p>5. Enterprise to Cloud (Portability) - Cloud application running in the cloud – flexibility to move to a different cloud provider in the future or in-house</p>	
<p>6. Private (intra) Clouds - Interoperability / integration within elements of a private cloud and between a private cloud and a traditional Services Oriented Architecture environment</p>	

Customer vs. Provider Responsibilities

Customer vs. Provider Responsibilities

- Public Cloud Agreement, Sec. 1.5 **Online Policies**
- IBM's Acceptable Internet Use Policy for IBM Services at www.ibm.com/services/e-business/aup.html ("Acceptable Use Policy") and IBM's Privacy Practice at www.ibm.com/privacy ("Privacy Practice") are also part of this Agreement and apply to all Services.

Customer vs. Provider Responsibilities

- Public Cloud Agreement, Sec. 5.1 **Ownership**
- You (or your third party suppliers) retain all right, title, and interest in Content. By adding, creating, installing, uploading, or transferring Content, you grant IBM and its subcontractors a non-exclusive, worldwide, royalty-free, paid-up, transferable license and approval to host, cache, copy, and display Content for the purpose of and in conjunction with providing a Service. You represent that you have and will keep in effect during your use of a Service, all such licenses and approvals necessary to grant IBM these rights and that they will be provided at no charge to IBM.
- You agree to reimburse IBM for any reasonable costs and other amounts that IBM may incur from your failure to obtain these licenses or approvals.
- **Content** – all data, software, and information, including, without limitation, any hypertext markup language files, scripts, programs, recordings, sound, music, graphics, images, applets, or servelets that are created, installed, uploaded, or transferred in connection with the Services by you or others using your Account.

Customer vs. Provider Responsibilities

- Public Cloud Agreement, Sec. 10.2 **ITEMS FOR WHICH IBM IS NOT LIABLE**
- **UNDER NO CIRCUMSTANCES IS IBM, ITS SUBCONTRACTORS, OR PROGRAM DEVELOPERS LIABLE FOR ANY OF THE FOLLOWING EVEN IF INFORMED OF THEIR POSSIBILITY:**
 - a. LOSS OF, OR DAMAGE TO, CONTENT;
 - b. SPECIAL, INCIDENTAL, EXEMPLARY, OR INDIRECT DAMAGES OR FOR ANY ECONOMIC CONSEQUENTIAL DAMAGES; OR
- **c. LOST PROFITS, BUSINESS, REVENUE, GOODWILL, OR ANTICIPATED SAVINGS.**

Miscellaneous Resources

- Cloud Computing Use Cases Ver. 3.0:
<http://www.scribd.com/doc/18172802/Cloud-Computing-Use-Cases-Whitepaper>
- Privacy in the Clouds:
<http://www.ipc.on.ca/images/Resources/privacyinthecLOUDS.pdf>
- IBM offerings: <http://www.ibm.com/ibm/cloud/>