



Transformational Aspects of Cloud Computing

for the Financial Services Industry

October 7, 2010

Cloud Computing

U.S. Department of Commerce Definition



- ④ The National Institute of Standards and Technology (NIST) is an agency of the U.S. Commerce Department. The Information Technology Laboratory (ITL) is one of the major research departments of NIST.
- ④ ITL defines cloud computing as ***“a model for enabling convenient, on-demand network access to a shared pool of configurable computing resources (e.g., networks, servers, storage, applications, and services) that can be rapidly provisioned and released with minimal management effort or service provider interaction.”***
- ④ According to 2009 ITL definition of ***cloud computing***, it is comprised of:
 - ④ five essential ***characteristics***;
 - ④ four* ***service models***; and
 - ④ four ***deployment models***.

See <http://csrc.nist.gov/groups/SNS/cloud-computing/cloud-computing-v26.ppt>). *Since 2009 an additional model - DaaS - was added (see TechTarget definition below).

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Five Essential Characteristics



- ⊗ On-demand self-service
- ⊗ Broad network access
- ⊗ Resource pooling
 - Location independence
- ⊗ Rapid elasticity
- ⊗ Measured service

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Four Service Models



⊗ Cloud Software-as-a-Service (**SaaS**)

- Use provider's applications over a network

⊗ Cloud Platform-as-a-Service (**PaaS**)

- Deploy customer-created applications to a cloud

⊗ Cloud Infrastructure-as-a-Service (**IaaS**)

- Rent processing, storage, network capacity, and other fundamental computing resources

⊗ Cloud Data-as-a-Service (**DaaS***)

- Collect and store data for use / processing by 'legal parties of interest'

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Fourth Service Model – DaaS*



- ⊗ Since 2009 a fourth service model - DaaS - was added. TechTarget defines Data-as-a-Service (DaaS) as:
- ⊗ The concept of data-as-a-service (DaaS) basically advocates the view that -- with the emergence of service-oriented architecture (SOA), which includes standardized processes for accessing data "where it lives" -- the actual platform on which the data resides doesn't matter. With data-as-a-service, any business process can access data wherever it resides. Data-as-a-service began with the notion that data quality could happen in a centralized place, cleansing and enriching data and offering it to different systems, applications or users, irrespective of where they were in the organization or on the network.
- ⊗ See <http://searchdatamanagement.techtarget.com/answer/Data-as-a-service-explained-and-defined>

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Four Deployment Models



⊗ Private cloud

- enterprise owned or leased

⊗ Community cloud

- shared infrastructure for specific community

⊗ Public cloud

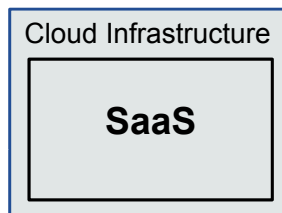
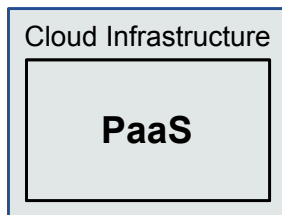
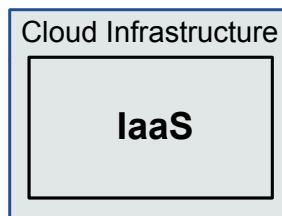
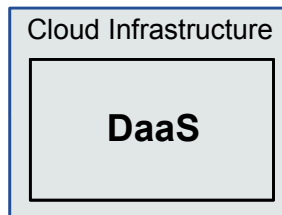
- Sold to the public, mega-scale infrastructure

⊗ Hybrid cloud

- composition of two or more clouds

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Questions for Panel Participants



(1) How does your cloud service(s) leverage the

- five essential characteristics
- four service models
- four deployment models

(2) Does your cloud service(s) help balance benefits from market fragmentation

- increased liquidity
- decreased margins
- improved price discovery
- other

Against necessary measures to ensure market structure and integrity

- improved transparency
- enhanced accountability
- automated controls
- other

(3) How can your cloud service(s) help to transform the financial services industry