**Discussion Session on Cloud Computing**

Facilitated by Dennis Cromwell & Craig Stewart

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**What is cloud computing?**

Cloud computing is the new buzzword that can and does mean anything. A number of influential thinkers say it is jibberish.

Higher Ed is already:

* using commercial cloud computing services, e.g., email outsourcing
* banning together to build cloud services for particular constituencies, e.g., the CIC
* building campus clouds of virtual servers
* trading ease of use for cheaper services
* disintermediation of services, i.e., you don't have to "have your own" to have great cloud computing

Discussion participants are already using cloud services for:

* remote backup
* augmenting HPC environments with Amazon
* remote storage
* mass storage economies of scale accessed via high speed networks
* email outsourcing
* learning management outhosting
* web space outhosting

Discussion participants want to use cloud services for:

* disaster recovery and business continuity
* collaboration
* application hosting
* content distribution to global audiences to put content closer to the users
* 24-hour server admin coverage because there isn't the budget to hire local 24 hour staff
* large disciplinary data repositories
* library collections

Not mentioned above are critical business functions, e.g., Salesforce.com and other SAAS applications. The closest example is learning management systems, which some institutions have tried. Higher ed is not as bottom line driven as the commercial space and tends to stick more to the status quo.

About one quarter of the room have collaborated via Google Docs. It has been "tantalizingly close" for a long time.

**Is the cloud the network, or is the cloud someone else's infrastructure?**

IDC has a new research paper on cloud computing. They say:

* we tend to reinvent terms for existing technologies and think that we have something new, e.g., some aspects of cloud computing are similar to the venerable service bureaus
* it is difficult to categorize cloud computing

**Is cloud computing safe? What are the advantages and disadvantages?**

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| --- | --- |
| Advantages | Disadvantages |
| * We think it will save money
* It might improve our availability
* It might improve our business continuity and disaster recovery
* Service Level Agreements and quality time with legal counsel
* Saving staff resources
* May reduce the barriers to HPC, especially for small job undergraduate use, at institutions that don't have local resources
* A greater service for a given dollar
* Scalability
* No need to recruit people with deeply technical and narrow skills.
* Higher quality services and functionality by going with a vendor who specializes in something that is only a small part of the university portfolio
 | * Giving up too much control to the commercial sector in particular
* Privacy and FERPA concerns (Not many people in the room, or their institution's lawyers, have read the Google Docs license agreement from end to end. A lot of the license terms reference web pages that could change.)
* Difficulty to get buy in
* Loss of internal capacity
* Loss of budget flexibility because outsourced services become fixed costs that can't be cut in tough budget times
* Intellectual property concerns
* Can you get your data back out to move to someone else's service
* Staff skills have to shift from the technical to vendor management
* Some IT skill sets are no longer as value as they once were which can cause reticence on the part of the IT organization
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Many discussion participants are thinking of using Turn it In as a service.

**The future of cloud computing**

Most participants think the impact of cloud computing will be felt at their institutions in the one to three year timeframe.

Will IT leaders have a choice of whether or not they go for cloud services? Faculty are already using cloud services and putting student information into them. They may then come back to local IT staff for support. We have no say in any of this, so we have to "relax and enjoy the horror" and see how it plays out. IT is no longer the buyer, so how are those costs resourced within the institution?

What institutions may do with cloud computing will depend upon the nature of the institutions, e.g., private institution email versus research 1 high performance computing.

The functionality used by the vast number of people is already available in cloud services, e.g., Google Docs.

Institutions cannot continue to put out large desktop computer labs for access to specialized and expensive software. Can these applications be delivered to student-owned laptops via virtualization. The students already own the laptops.

Cloud computing will provide disintermediation for the IT organization from standing between the end user and the service provider.

Legislation and compliance issues will not move as fast as the capabilities of cloud technology.

Will the IT organization become more of a utility provider than it has been in the past. Will that free up staff to serve the educational mission of the organization? At Indiana University, the outsourcing of student email freed up a key technical staff member to move to challenging support for research file systems. Once upon a time, email was the cutting edge research service.