



Cloud Computing In the Technological Stratosphere

At the
New York Association of
Local Government Records Officers
Annual Meeting
June 5, 2018
Lake Placid, New York

By
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James M. Tamaro

James M. Tamaro served as records manager for the Town of Amherst from 1981 to 1990, establishing and then administering the town's comprehensive records management program involving an archives component.

From 1990 to September of 2011, Jim served as an Archives and Records Management Specialist III for the Region 8 Office of the New York State Archives. In his position with the Archives, he worked with local governments in the eight Western New York counties assisting the governments in improving the way records and information are managed. Part of Jim's responsibilities involved administering the Local Government Records Management Improvement Fund (LGRMIF) Grants awarded to local governments in Western New York.

Jim received his MLS Degree from SUNY Buffalo in 1990. He held the certified records manager (CRM) designation from 1987-2011 and is a past founding director of the New York Association of Local Government Records Officers (NYALGRO). He holds memberships in the Mid-Atlantic Regional Archives Conference (MARAC), the Society of American Archivists (SAA), the Association for Library and Information Science Education (ALISE) and currently serves on the board of NYALGRO. In addition he is a member of the Phi Beta Mu Library Science Honor Society.

Jim also served as Past-President of the Western New York Chapter of the Association of Records Managers and Administrators (ARMA) and served as Acting President of the SUNY Buffalo Phi Beta Mu Library Science Honor Society Chapter. In addition, he served as the Archivist for the Amherst Symphony Orchestra Association from 2013-2015 and is the recipient of NYALGRO's 2012 Guy D. Paquin Award for noteworthy achievements and exceptional support and involvement in the records management profession and the Stan Lundine Award for Outstanding Service to the Southern Tier West Region of New York State. He is also recipient of the New York Library Association's 2016 Mildred Lowe Award for significant contributions to government documents librarianship and access to government information.

He currently serves as an adjunct professor at the SUNY at Buffalo, School of Graduate Education, Dept. of Library and Information Studies where he teaches graduate-level courses on records management and managing archival records. In addition, he has served as an archives and records management consultant for organizations both in the private and public sectors.

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New York Association of Local Government Records Officers, Annual School, June 5, 2018

James M. Tammaro, Adjunct Professor, SUNY Buffalo, Department of Library and Information Studies

Topics to be Covered



- A basic introduction
- Definitions
- Fundamental elements
- Advantages
- Disadvantages
- Challenges
- Concerns and Issues
- Elements of a contract for cloud computing

You Live in a Cloud Already!



- Your e-mail
 - Gmail, Yahoo, Hotmail
- Your photographs
 - Flickr, Facebook, Tumblr
- Your documents
 - Google Docs
- Your life online!
 - Facebook, Twitter

“Cloud Adoption Up Across All Industries”

- Adoption up with regulated industries
 - Despite security concerns
- CASBs addressing security
 - Lack of encryption a concern
 - Data protection driving adoption



“Local Government Agencies and the Cloud: Moving to IaaS”

- IaaS holds benefits
 - Repurposing time to support customers
 - Realizing personnel savings
- Cybersecurity concerns
 - Information sharing

By Participating in the Cloud You Have Abandoned

- Absolute Control over your records
- The responsibility for managing these records
- Privacy
- Knowledge of how your records are managed



But...What you have Gained from Cloud Computing...

- Easier management of your records
- Instant access to your online information
- Easy ability to share information
- An online filing system without the work



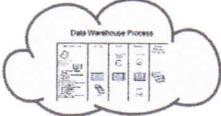
Fundamental Elements of Cloud Computing

- 1) Universal connectivity
- 2) Open access
- 3) Reliability
- 4) Interoperability
- 5) Security
- 6) Privacy
- 7) Economic value
- 8) Sustainability



Cloud Data

- Stored on vendor servers
- Transmitted to servers via their hardware
- Created and processed with vendor software
- Accessed through a connection managed by the vendor



Delivery Models

- **Software as a service (SaaS)**
– Also known as *storage* as a service or *security* as a service
- **Platform as a service (PaaS)**
- **Infrastructure as a service (IaaS)**

Deployment Models

- **Private cloud**
– Operated for solely one organization
- **Community cloud**
– Shared by several organizations in one community
- **Public cloud**
– Available to anyone
- **Hybrid cloud**
– Private cloud for mission-critical applications but hosting public website with cloud provider

Advantages of Cloud Computing – I

- Improved services to citizens
- Rapid scalability and deployment capabilities
- Decreased maintenance/upgrades
- Improved resource utilization
- Improved economies of scale
- Efficient storage of records



Advantages of Cloud Computing – II

- Improved collaboration capabilities
- Ability to engage in usage-based pricing
- Reduced IT infrastructure needs
- Capacity for on-demand infrastructure



Advantages of Cloud Computing – III

- Green friendly
- Improved disaster recovery



Concerns About Cloud Computing

- Cloud computing is a trap
- Need for careful evaluation of products
- Security is not always standard
- It's not a magic bullet



Concerns About Cloud Computing

From a Records Management Perspective

- Uncertain reliability
- Lack of open standards
- Vendor instability
- Security challenges



Security Challenges - I

- Lack of data control
- Applications not security tested
- Shared technology vulnerabilities
- Storage not separate for each customer



Security Challenges - II

- Malicious insiders
- Account, service and traffic hijacking
- Loss of control
- Compliance risks



“Are Cloud Security Concerns Overblown?”

➤ **Obstacles to cloud security**

- Unauthorized access – 53%
- Data leaking or loss – 49%
- Data privacy – 46%
- Hacking of accounts – 44%
- Insecure interfaces – 39%
- External access and sharing data – 33%



“Privacy in the Cloud: The Same as Everywhere Else”

Julie J. Colgan, CRM

➤ **Data in the cloud**

- Just another risk

➤ **Cloud, Social, Mobile**

- Blur boundaries

➤ **Start with policy, then technology**

“Should My Company Migrate to the Cloud?”

Seth Jaskow, CTO, Northgate Digital

➤ **Benefits to consider**

- Scalability
- Improved automation
- Reliability

“Should My Company Migrate to the Cloud?”
Seth Jaskow, CTO, Northgate Digital

- > **Challenges and Potential Drawbacks**
 - > Security
 - > Unintended consequences
 - > “Vendor lock-in”

Questions to Ask Internally 

- > What work do we have to get done?
- > What systems allow us to do this work now?
- > What recordkeeping needs do we have?
- > How accessible are these records now?
- > How much risk are we willing to accept?

Questions to Ask Vendors 

- > How portable are the records?
- > Where are the servers?
- > Where are the backups stored? How often? Where?
- > Is any part of the storage service offered offline? On what media? In what location?
- > What is the interval the media is refreshed or system migrated?

Questions to Ask Vendors



- > How can I access my records?
- > When can I access my records?
- > How reliable is access to my records?
- > What contractual redress do I have for downtime?
- > How can I designate access restrictions? In what time frame?

Questions to Ask Vendors



- > What access restrictions are there for your staff?
- > How is privacy and confidentiality of my information ensured?
- > How secure are my records?
- > What security methods are utilized?
- > What procedures are in place for a data breach?

Questions to Ask Vendors



- > What levels of support are available? Cost?
- > When/how is hardware and software serviced?
- > How quickly can I increase storage capacity? Cost?
- > How quickly to downgrade storage/services, etc. Cost?

Questions to Ask Vendors

"Local Government Agencies and the Cloud: Moving to IaaS" –
State Technology Magazine – Juliet Van Wagenen

- > Is the offering able to scale automatically?
- > Does the vendor offer value-added services?
- > Is the price aligned with the government market direction?
- > Are contract conditions flexible?
- > How does the vendor enter into and terminate the data contract?

Items to Address in a Contract

1. Costs
2. Disaster mitigation
3. Ownership
4. Records transfer
5. Accessibility
6. Security
7. Storage
8. Retention and Disposition
9. Termination of Contract



Litigation Issues

- > Possession, custody and control
- > Duties of cloud vendor to user
- > Authentication of data
- > Applicability of U.S. Laws internationally

“Recommendations to Mitigate Legal Risk When Outsourcing to the Cloud”

- Establish rules for the employee use
- Establish ownership for data
- Prohibit subcontracting
- Limit locations

“Recommendations to Mitigate Legal Risk When Outsourcing to the Cloud”

- Establish
 - A mechanism with cloud provider
 - How data will be stored
 - Access rights
 - Allocation of liability
 - Appropriate security
 - Rules for data disposition

Potential Uses of Cloud Computing in Government
With a Records Management Perspective

- Secure virtualized data centers
- Portals, collaboration and messaging
- Content, information and records management
- Enterprise software as a service

“Assess Before – and After – Moving Into the Cloud”
By Martin Tuip

- > Get rid of the junk
- > Assess remaining information
- > Evaluate potential cloud providers
- > Evaluate compatibility
- > Assess the IG program

“The Top Trends Driving Cloud Use”

1. Virtual offices for disaster recovery
2. Desktop as a service
3. Regulatory relief
4. Security
5. Mobile





Thank You! - Questions?

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