



New Technologies, New Challenges: Records Retention and Disposition in the Clouds

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Research Question #1

How does the use of cloud services affect our ability to retain and dispose of records in accordance with the law and other applicable guidelines?



http://recordsmanagement.tab.com/records-retention-2/solving-the-challenges-of-records-retention-in-the-cloud/attachment/cloud_storage

Research Question #2

What can be done to mitigate any risks arising from the gaps between our ability to apply retention and disposition actions to manage records residing within the enterprise and those residing in the cloud?



Points of Discussion

- Records Retention and Disposition Functional Requirements
- R&D Functionality & Cloud Services
- User Experiences
- Conclusions



Obligations of the Organization

Retention

An organization shall **retain its information for an appropriate time**, taking into account all operational, legal, regulatory and fiscal requirements, and those of all relevant binding authorities.

Disposition

An organization shall **provide secure and appropriate disposition for records that are no longer to be maintained** by applicable laws and the organization's policies.

~ARMA International, The Principles

Records Retention and Disposition Functional Requirements

Extrapolated from the following standards documents:

- ISO 15489 (parts 1 and 2) - Information and documentation—Records Management
- ISO 23081 (parts 1, 2, and 3) - Information and documentation—Records Management processes—Metadata for records
- ISO 16175 (parts 1, 2 and 3) - The Principles and Functional Requirements for Records in Electronic Office Environments
- DoD 5015.2 - Department of Defense Electronic Records Management Application Design Criteria Standard
- MoReq 2010® - Modular Requirements for Records Systems

Retention & Disposition System Requirements

- Record systems should be capable of *facilitating and implementing decisions* on the retention or disposition of records.
- It should be possible for these decisions to be made *at any time in the existence of records*, including during the design stage of records systems.
- It should also be possible, where appropriate, for disposition to be *activated automatically*.
- Systems should provide *audit trails* or other methods to track completed disposition actions.

Defensible Disposition

- Allow *retention periods* to be defined from one day to an indefinite length of time
- Allow the *definition of disposition classes*, which can be applied to electronic records, either through the internal functionality of the Business System software or via an automatic or manual external mechanism.
- Ensure the definition of each class includes a *disposition trigger, a retention period, and a disposition action*.
- Support the following disposition actions: *review, export, transfer, and destruction*.

~ISO 16175, Module 3, 53-54

“We wanted to create a product that made it economical to never throw anything away.”

~Tom Kershaw, Google director of product management for the Cloud Platform team, upon the launch of Nearline Cloud Storage

Cloud Vendors Under Review

1. Amazon Web Services
2. ArchiveSocial
3. CenturyLink Cloud/Tier 3
4. Cloud 9 Discovery
5. Crashplan
6. Egnyte
7. Dropbox
8. GoGrid
9. Google Apps for Business/
include Google Cloud
10. HP Records Manager
(formerly HP Trim)
11. Microsoft One Drive
12. Office 365
13. SharePoint
14. MS SP Add-on Gimmel
15. MS SP Add-on Collabware
16. NextPoint
17. Preservica and Archivemata
18. Rackspace
19. Smarsh
20. Symantic

<p>Cloud Storage</p> <p>Amazon S3 & Glacier Dropbox for Business Egnyte One Drive for Business</p>	<p>RM Software and add-ons</p> <p>Collabware Gimmal HP Records Manager (formerly HP Trim)</p>	<p>Infrastructure as a Service</p> <p>Amazon Web Services Century Link (Tier3) GoGrid Rackspace</p>	<p>Litigation Support & E-Discovery</p> <p>NextPoint CloudNine</p>
<p>Archiving Solutions</p> <p>ArchiveSocial Google Vault (email & chats) Symantec Enterprise Vault Smash</p>	<p>Collaboration / Content Mgmt.</p> <p>SharePoint Online Office 365/ Exchange/Linc Online</p>	<p>Long-term Digital Preservation</p> <p>Archivematica Preservica</p>	<p>Backup & Data Protection</p> <p>CrashPlan HP Autonomy Live Vault</p>

Functional Requirements

- Privacy and Security (5 questions)
- Establishing disposition authorities (3 questions)
- Applying disposition authorities (5 questions)
- Executing disposition authorities (4 questions)
- Documenting disposal actions (2 questions)
- Reviewing disposition (5 questions)
- Integration (1 question)

Retention & Disposition Functional Requirements

Questionnaire for use when evaluating specific cloud products/services

No.	Questions	Yes	No	Don't Know
Privacy and Security Considerations				
1	Does the vendor allow independent audits of systems and processes?			
2	Is the content encrypted when in transit to the cloud?			
3	Is the content encrypted when at rest in the cloud?			
4	Are the physical servers located within a jurisdiction approved for your organization?			
5	Are the backup servers located within a jurisdiction approved for your organization?			
Establishing disposition authorities				
6	What indexing capability is supported (can it accommodate customers' taxonomy for indexing)?			
7	Can retention periods be applied?			
8	Can destruction be automated?			
Applying disposition authorities				
9	Can a disposition authority (retention and disposition specifications) be applied to aggregations of records?			
10	Can records be locked down for viewing only?			
11	Can records be retained indefinitely?			
12	Can records not in an aggregation be destroyed at a future date?			
13	Can records not in an aggregation be transferred at a future date?			

Executing disposition authorities				
14	Can records be deleted according to the retention/disposition schedule?			
15	Can backups be deleted according to the retention/disposition schedule?			
16	Are users alerted to conflicts related to links from records to be deleted to other records aggregations that have different records disposition requirements?			
17	If more than one disposal authority is associated with an aggregation of records, can these multiple retention requirements be tracked to allow the manual or automatic lock or freeze on the process (ex. Freeze for litigation or freedom of information request)?			
Documenting disposal actions				
18	Are disposal actions documented in process metadata?			
19	Can all disposal actions be automatically recorded and reported to the administrator?			
Reviewing disposition				
20	Are electronic aggregations presented for review along with their records management metadata and disposal authority information so both content and records management metadata can be reviewed?			
21	Can records be marked for destruction, transfer, further review?			
22	Are all decisions made during review stored in metadata?			
23	Can the system generate reports on the disposition process?			
24	Is the ability to interface with workflow facility to support scheduling, review, and export transfer processes provided or supported?			
Integration				
25	Is the metadata schema compatible with other systems, such as Enterprise Content Management or Records Management Systems?			

Outcome of Cloud Vendor Research

- Questions 1-5 relate to ***vendor services***: Approximately 57% of the cloud services encrypt content residing in the cloud, and 71%, provide encryption for content while in transit. Approximately 50% allow independent audits of systems. Approximately 38% have physical servers located within a jurisdiction approved for the client, and approximately 33% have backup servers located within an approved jurisdiction.
- Questions 6-8 relate ***to establishing disposition authorities***. The cloud services explored did not refer to disposition authorities but 71.4% allow retention periods to be applied. Destruction is automated in 47.6% of the services. Indexing capability is present in 61.9% of the cloud services studied.

Outcome of Cloud Vendor Research

- Questions 9-13 relate to ***applying disposition authorities*** and ***locking down records for view only***.
 - Less than half (47.6%) of the services allow a disposition authority (retention and disposition specifications) to be applied to aggregations of records.
 - Only 52.4% of cloud services allow records that are not in an aggregation (individual records) to be destroyed (42.8%) or transferred (42.8%) at a future date.

Outcome of Cloud Vendor Research

Questions 14-17 relate to ***executing disposition authorities***.

- 76.1% allow records to be deleted according to a retention/disposition schedule, and 57.1% allow backups to be deleted according to the retention and disposition schedule.
- However, only 9.5% of the services alert users to conflicts related to links from records to be deleted to other records aggregations that have different retention requirements, and
- 33.3% allow multiple retention requirements to be tracked to allow the manual or automatic lock or freeze on the disposition process if more than one disposal authority is associated with an aggregation of records.

Outcome of Cloud Vendor Research

- Questions 18-19 relate to ***documenting disposal actions***.
 - 57.1% of the services document disposal actions in process metadata, and
 - 57.1% automatically record disposal actions and report them to the administrator.
 - In some cases, the metadata exported is descriptive and does not include operational metadata added while in the custody of the cloud provider.

Outcome of Cloud Vendor Research

- Questions 20-24 relate **to reviewing disposition**.
 - Only 19% of the solutions reviewed preset electronic aggregations, their metadata, and disposal authority information to be reviewed;
 - 28.6% all records to be marked for destruction, transfer, or further review;
 - 23.8% store all decisions made during the review in metadata;
 - 61.9% provide system generated reports on the disposition process; and
 - 38% provide the ability to interface with a workflow facility to support scheduling, review, and export transfer processes.

Outcome of Cloud Vendor Research

- Question 25 is related to ***integration***
 - Only 33.3% of the services reviewed indicated they use a metadata scheme compatible with other systems, such as Enterprise Content Management Systems or Records Management Systems.
 - In some instances, third party providers develop connectors that allow integration of cloud services with other products.
 - Vega used to merge Salesforce Cloudbase with ECM repositories, file systems, databases, and workflow systems.
 - Preservica includes multiple connectors to allow content to be ingested from ContentDM, DSpace, Outlook, Lotus Notes, and SharePoint.

User Survey

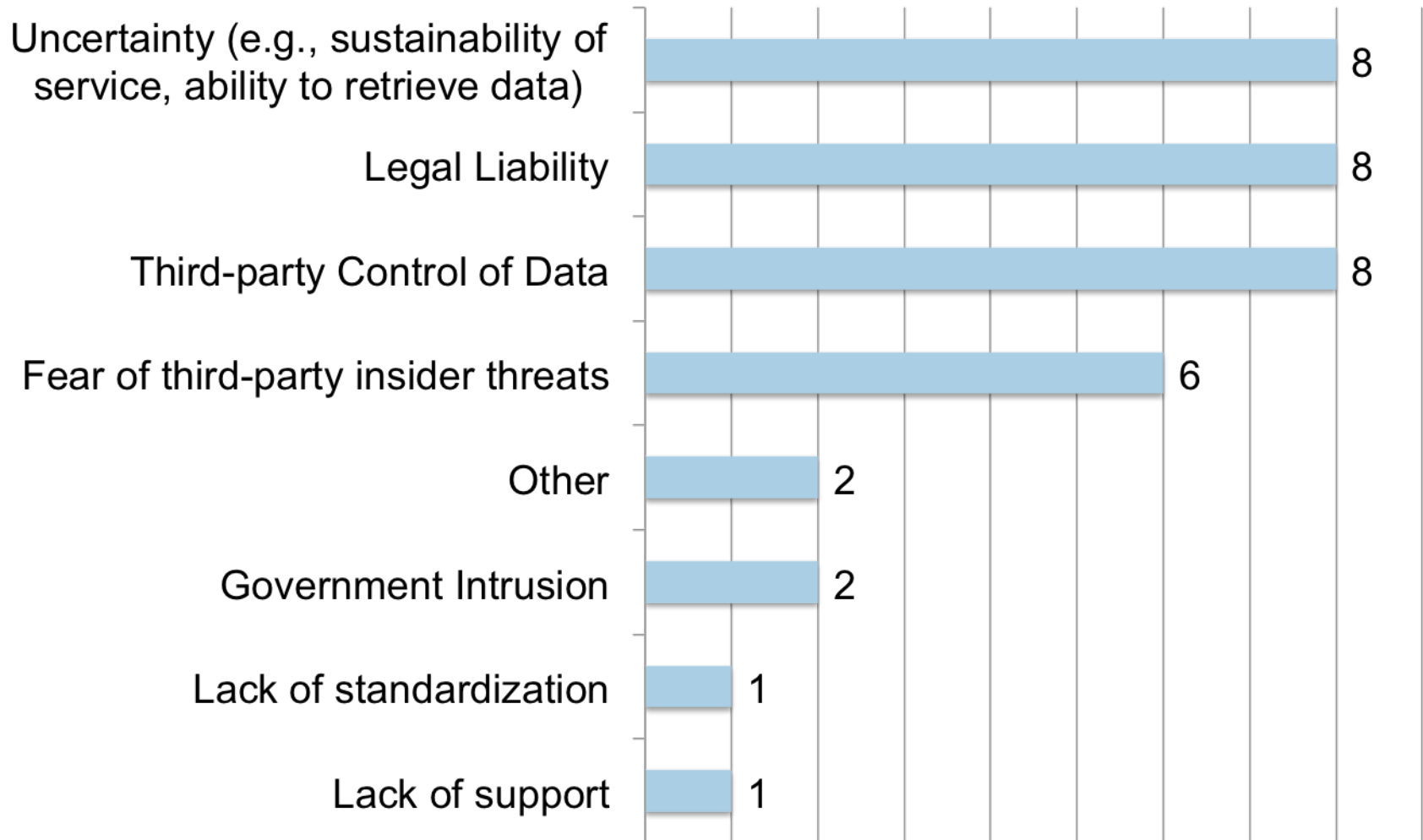
Members of ARMA International were invited to participate in a web-based related to Retention & Disposition in the Cloud.



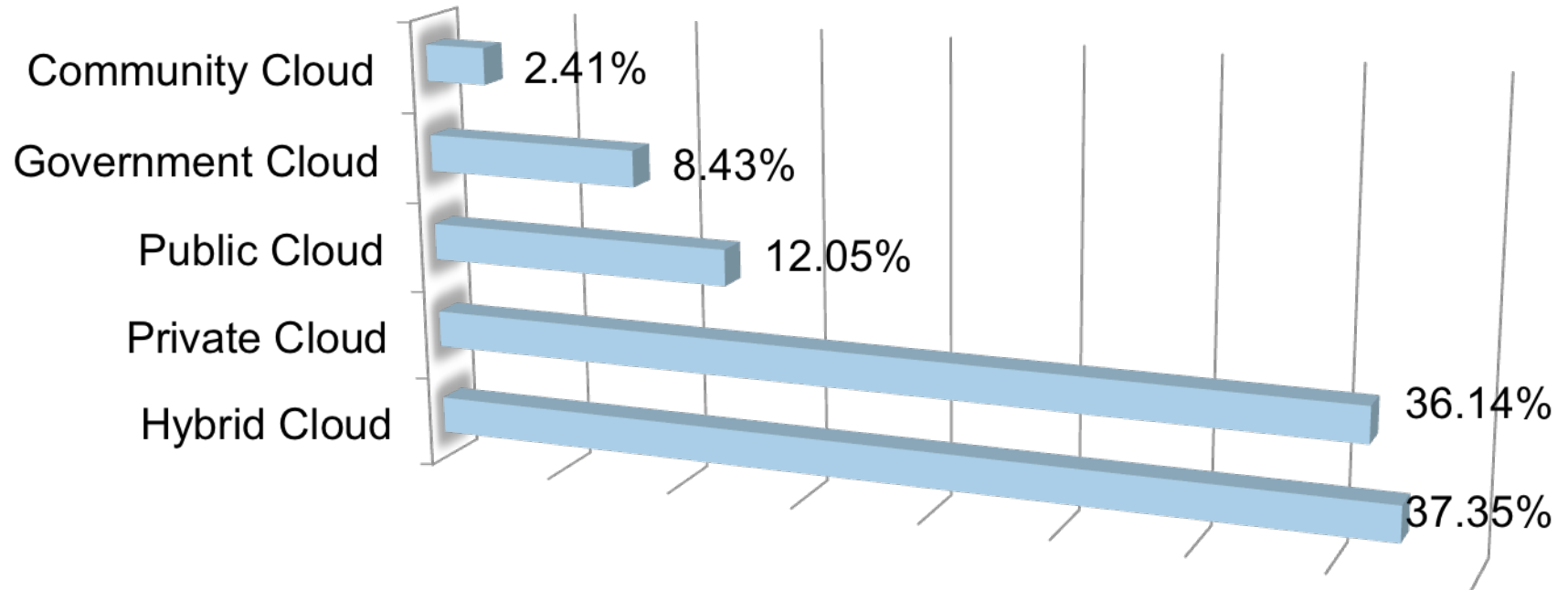
- 168 useable responses were collected.
- 101 of the 168 are records managers, 15 others have “records” in their title, and 17 are information governance professionals.
- 97 of the 168 reported their organizations use cloud services, and 26 plan to use it
- 62 work in government, followed by 15 in professional/scientific/technical services and 14 in finance and insurance.

Reasons Cloud Services are not Used

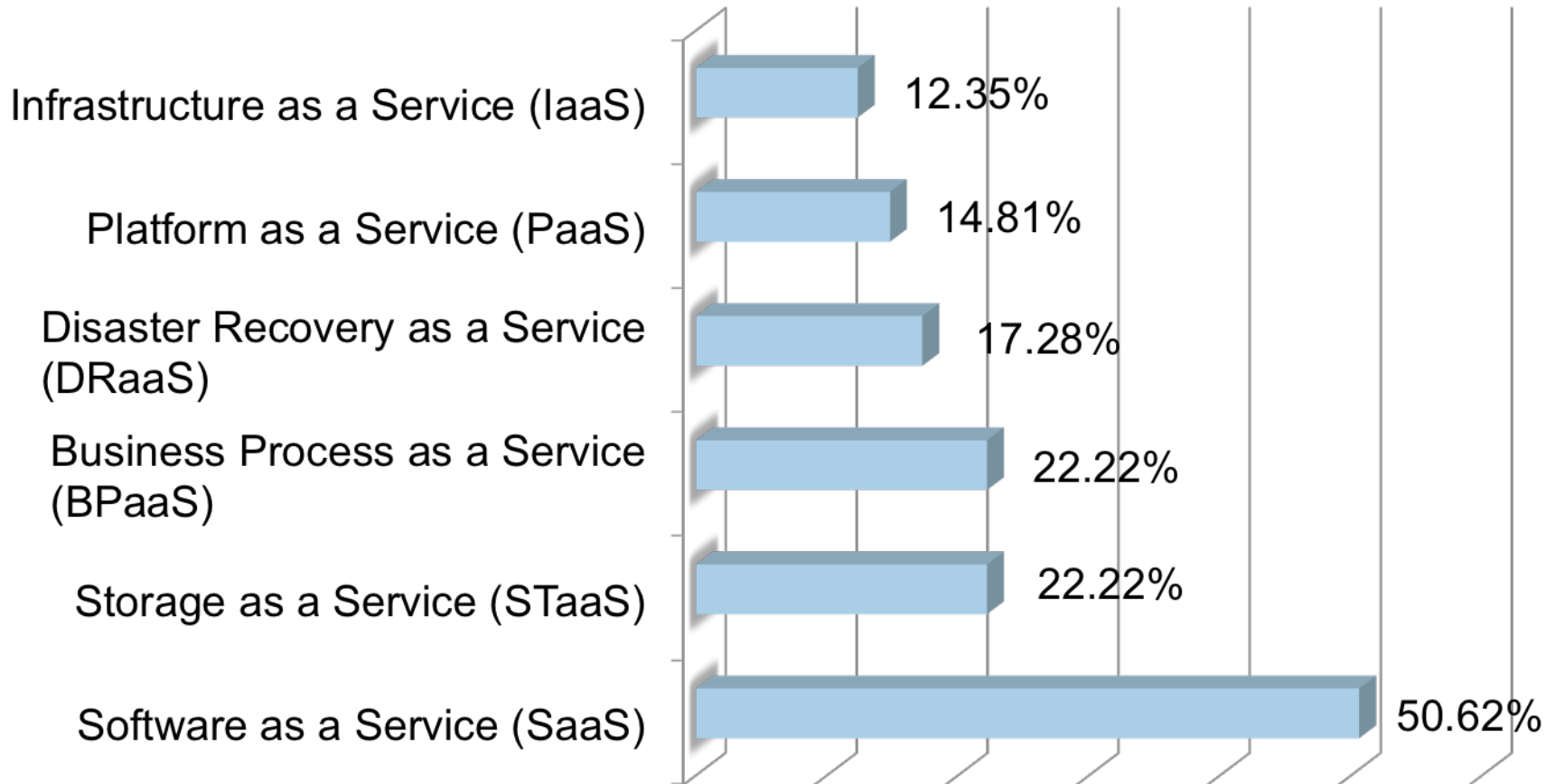
12 respondents



Cloud Deployment Models



Cloud Service Models

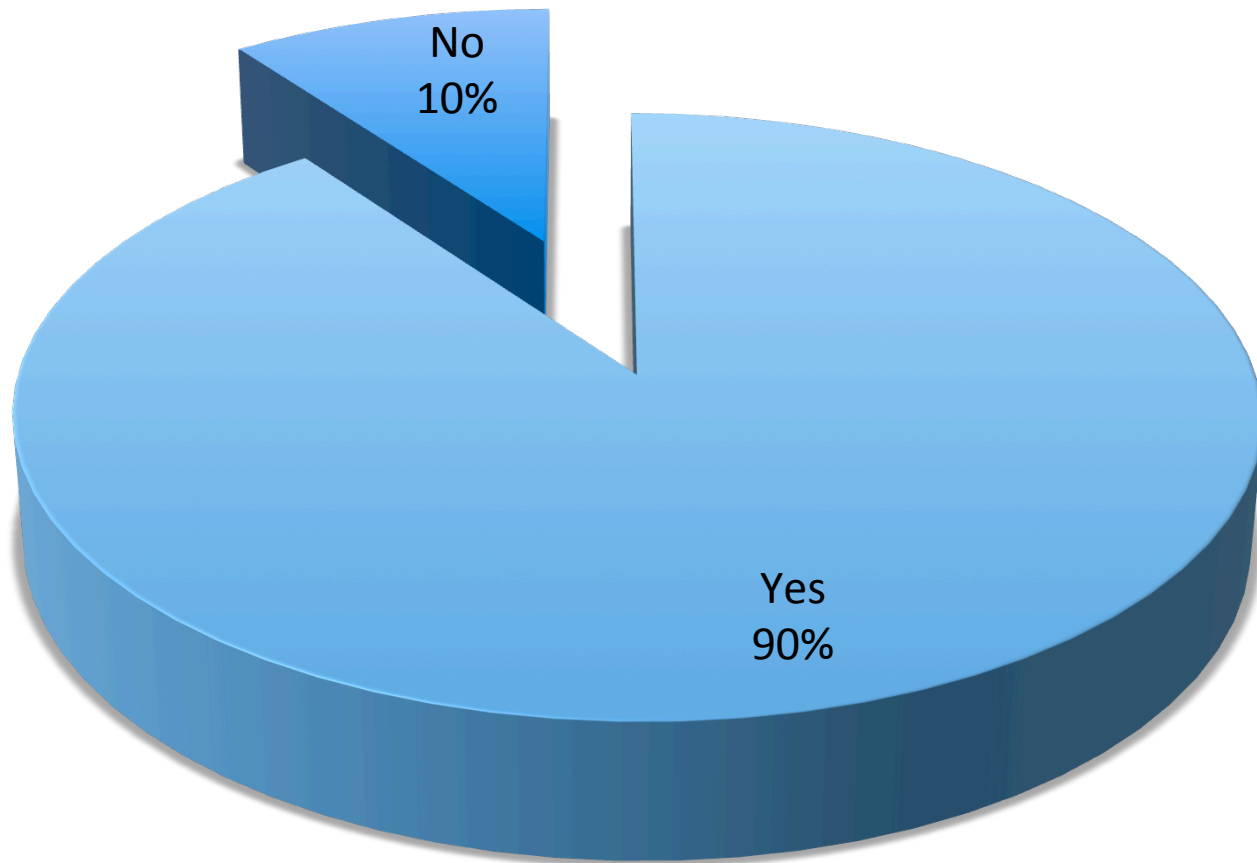


Involvement in Cloud Service Selection

86 responses, 66 no (18 yes, 2 decline to answer) 54 left comments

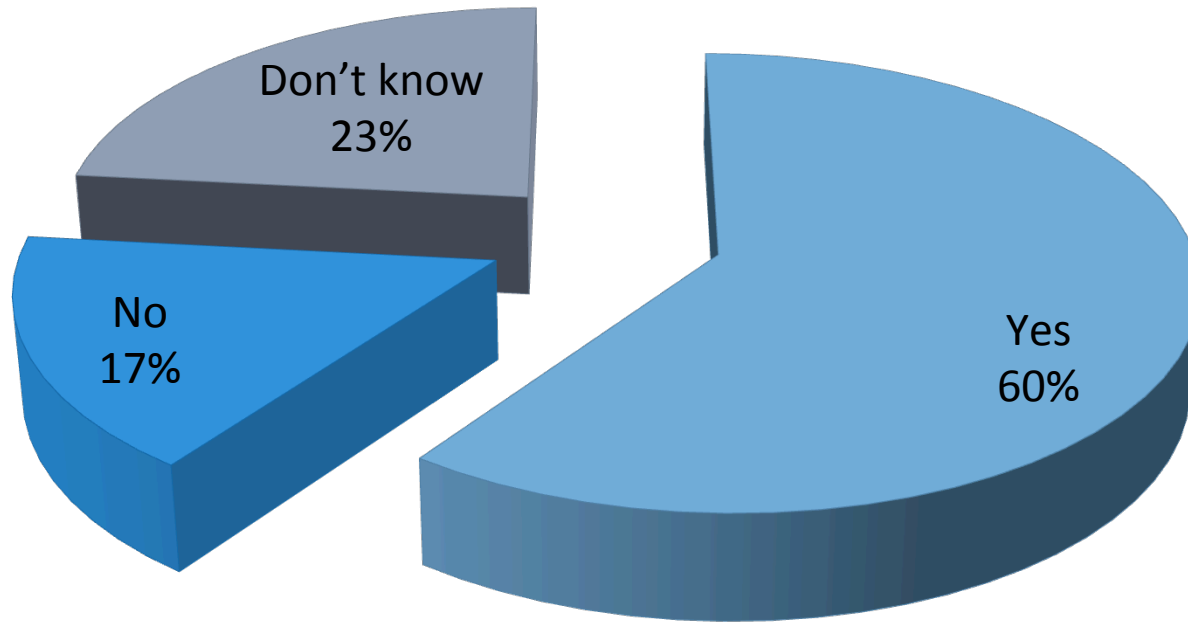
- IT alone or in conjunction with management, legal, or business unit.
- RM partially involved (e.g., part of team, consulting, research, evaluation)
- Decision made before some respondents became employed
- In only 1 case, respondent took lead, small firm, professional/scientific/technical services.

Does your organization have a retention and disposition policy in place?



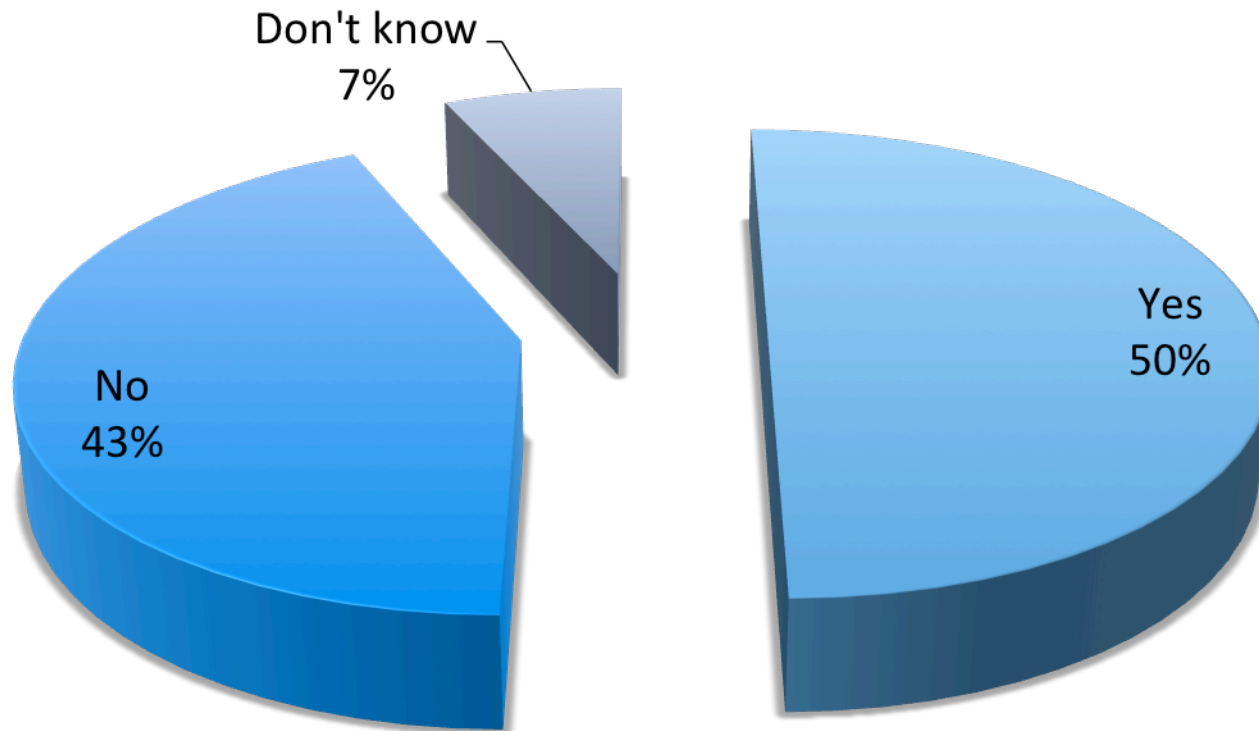
83 responses of 97 employing cloud services

Does your organization store content that is evidence of an activity or transaction in a cloud service that is not stored elsewhere?



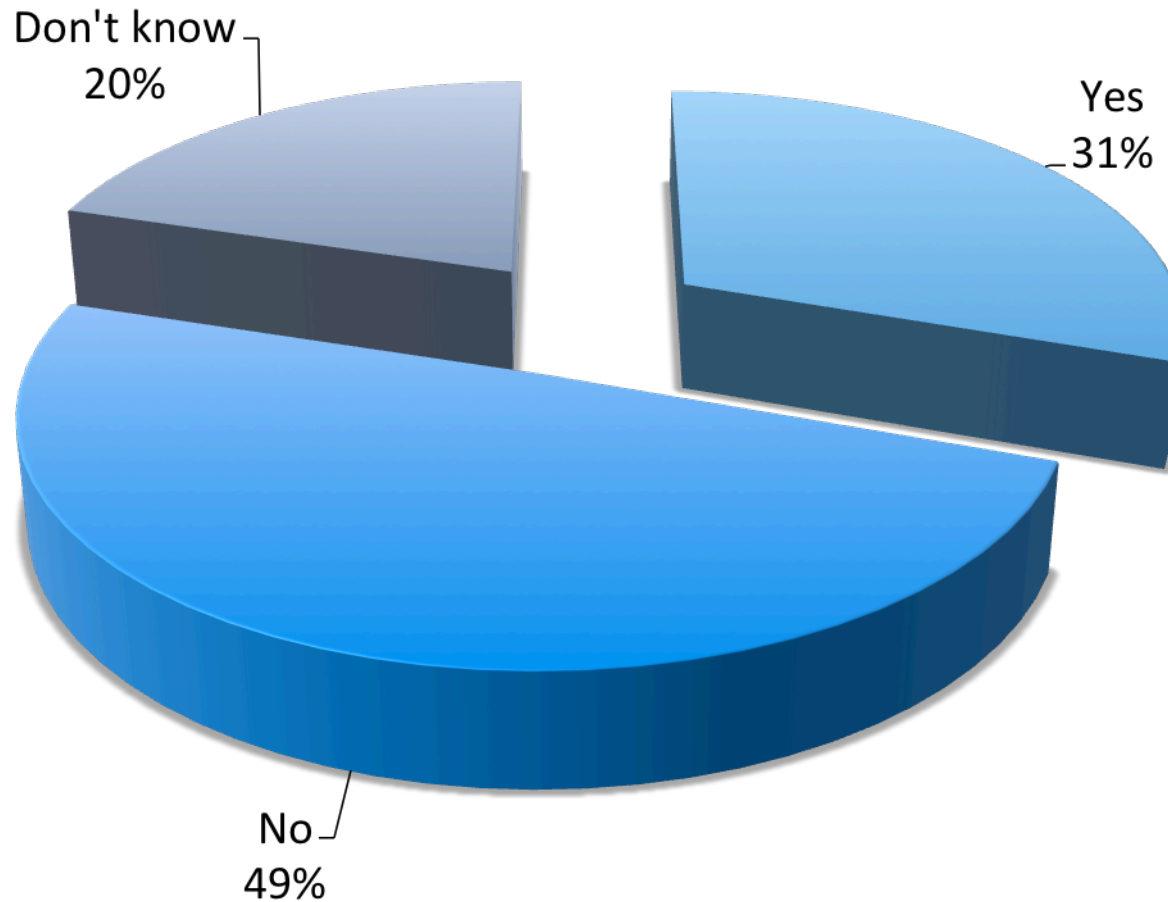
83 responses of 97 employing cloud services

If yes, does your organization's retention schedule address this content residing in the clouds?



44 responses of 97 employing cloud services

Were retention and disposition considerations included in selecting a cloud service?



79 responses of 97 employing cloud services

What else did we learn?

- The use of cloud products and services is a recent phenomenon according to the respondents. Only 25% have employed cloud services more than three years.
- The types of cloud models in use vary. A hybrid cloud was used by 37.35% of respondents—third-party hosted and public cloud (19.28%) and an enterprise-hosted and public cloud (18.07%). A private cloud was the next most used (36.14%).
- Only 17.5% of the respondent stated their organization had performed any dispositions on its content in the cloud, the majority (53.75%) indicated they had not.

What did we learn about disposition authorities and actions?

- **Privacy and Security Considerations:** Almost 40% of the cloud vendors allow independent audits of their systems and processes. Over 49% state content is encrypted when in transit to the cloud, and over 40% state that content is encrypted when at rest in the cloud. Physical servers are located within a jurisdiction approved by the client for more than 53% of the organizations, and backup servers are located within an approved jurisdiction for more than 50%.
- **Establishing Disposition Authorities:** Indexing capabilities supported by the cloud services they employ: metadata schema (50%), document naming conventions (45.16%), classification codes (38.81%), taxonomies by 29.03%, and retention periods by 24.19%.

What did we learn about disposition authorities and actions?

- **Applying Disposition Authorities:** Retention and disposition specifications can be applied to aggregations of records according to 25% of the respondents to this question, and records can be locked down for viewing according to 34.78% of the respondents. Records can be transferred to other systems from 56.16% of the cloud services.
- **Executing disposition authorities:** More than 45% of respondents indicated records can be deleted according to a retention/disposition schedule, but only 24.29% indicated that backups could be deleted according to the same schedule.
- **Documenting disposal actions:** Under 15% of respondents stated that disposal actions are documented in processes metadata; slightly over 66% did not know if this was the case in their organization.

What did we learn about disposition authorities and actions?

- **Reviewing disposition:** When asked if disposition notifications are presented to the administrator to allow a review of content and records management metadata prior to disposition, 22% said yes but 55.88% did not know. The system could generate reports on the disposition process for 18.84% of the respondents, but 60.87% of the respondents did not know if this was possible within the cloud services employed by their organization.
- **Integration:** When asked if the metadata schema was compatible with other systems, 29.17% said yes, but 57.75% did not know. In response to a similar question, 26.39% of respondents stated it was possible to integrate the cloud provider's system with other systems, such as an ECM or an RMS, but 63.89% did not know if this was possible for their organizations.

User Challenges

- Decision are frequently made based upon budgets and business needs under the control of IT staff creating or launching the cloud services.
- Some enterprises do not use cloud services out of a lack of trust in the cloud to retain and properly and securely dispose of record aggregates according to their retention schedules.
- Records Managers seldom included in cloud service decisions before implementation.
- Some Records managers are uncertain as to the abilities and limitations of the cloud service and therefore do not trust the service, particularly for sensitive and confidential information.

Retention & Disposition in the Clouds

Closing thoughts

- Cloud products and services differ widely. Each has to be evaluated in order to understand the functionality provided. A framework to help the user better understand the retention and disposition functionality provided and risks presented would prove useful.
- The providers of large digital storage providers and services (e.g., Google cloud and Amazon Web Services) advocate keeping everything forever, making discussions about defensible deletion more difficult.
- Additional research is needed into related topics, such as trusted third-party providers, authenticity of records, chain of preservation, standards for integration, along with new metrics and longitudinal studies to analyze the effectiveness of cloud services related to retention and disposition.

Thank you!

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