QUESTION

Why are we Still Talking About HSM, ILM

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We have been discussing multi-tiers since the 90's
HSM - ILM - >>>>>>

Does anyone

Doubt

The Concept

Tiered Data - Intelligent Management - Lower Cost Media

Everyone I know agrees in Dying and Dead Data
W.O.R.S.E.

Write Once
Read Seldom
If Ever

Regardless of the classification can we really afford to integrate restrictions to data accessibility

Users - Applications Still Need Access
HOW MANY YEARS

Cheap Disk
Cheaper Disk
Even Cheaper Disk
Tape
Backup Software
rsync scripts

Was This The Answer...?
SOME SUCCESS

Hard Work

a Lot of Thought

Very Good People

But... Only a Few
THE QUESTION

Can Current Technologies Provide Tomorrows Ideals Today

What Should We Expect
Abstraction

While we can expect the Cost of Media to continue to decline, Cost of Media is not a Solution.

True Transparent Data Availability is Key
We Should Expect

- **Infinite Object Count Capability within a Single Global Name Space** - We are building True Digital Libraries. What is the difference between a physical paper library and a digital repository. You can expand a physical building as large as you want. Traditional file systems and applications have object limitations.

  *Internally the repository or digital library - Must be Pointer-Less*

- **Multiple Access Paths to the same exact information store** - The HSM environment must provide and support for multiple access protocols.
  - CIFS and NFS - Full Cross Platform Permissions Support
  - REST / S3 - etc.
  - SQL Non-Proprietary Direct table / catalog lookups - Quires to all aspects of the information. Metadata, All Indexed Data, Attributes, Extended Metadata
  - User available API for any user requested customization - etc.

Available Today - Mandatory Tomorrow
We Should Expect

- **A Global Perspective to Access** - A True Private Cloud Capability, Within a Building, Across a Campus, Across a Continent or Around the World we need to present our data through a common access paths regardless of where the physical asset resides.

  *In addition the system must provide Locality Aware Retrieval*

- **Private to Public Cloud Seamless Integration** -
  Whether it is the concept of a simple access portal or the actual use of the public options the system must provide for Bi-Directional Access and Support.
  - Limited Data Set Representations
  - Sharing of a common data pool
  - Utilization of an Off-Site storage capability, etc.

Available Today - Mandatory Tomorrow
We Should Expect

- **Object Based Architecture** - *Intelligence and Physical Asset Independence*, The ability to provide lookups, analytics, analysis without scanning the physical media or file system.

- **Data Mobility** - *One Button Zero Impact Non-disruptive* hardware and media refresh migrations across any type of storage and media to any type of storage and media anywhere in the world. Container Based Capability – Eliminate the Small File management issue.

- **Physical Transportability** - Seamless Export and Import of removable media
  - LTFS import / export. TAR import / export, etc.

- **True Any Hardware, Any Media Support** -
  - Transparent Direct Read From Tape, NO Disk Staging
  - Erasure Based Disk Systems Support

Available Today - Mandatory Tomorrow
We Should Expect

▷ **User Defined Access and Reliability** - Different Data, Different models.
  - 2 way, 3 way, “N” way access. 1, 2, 3 copies or more. Your choice Your reasons.
  - Multi-Point On-Site Off-Site Private Cloud Capable Replication.
  - Division, Department, Directory or Folder Multi-View Point in Time Fall Back
  - Definable Dynamic Versioning with Global and Granular Policy Controls.
  - Block Level Self Audit / Self Repair on any media including tape.

▷ **Compatible with Current Methodologies / Philosophies** -
*The Solution can be phased in* without disrupting current operating models.
Seamless transition to improved policy based file management controls while aligning with existing technology refresh schedules.

▷ **Backup to Near Line to Archive incorporating Disaster Recovery** -
*Today – Yes – This can be done.*
We Should Expect

Total System Monitoring, Maintenance and Support -
- Monitoring and reporting on every aspect of the entire system
- Servers, HBA’s, Switches, Tape Drives, Disk Drives, All Media.
- Performance Metrics – Peaks, Valleys, Nominal and Averages.
- All Access Conditions and Parameters.
- Compliance, Remediation, Encryption and WORM.

You can turn the concept of a solution into a culture - If you want?
- Set and Forget
- Reduce operational overheads
- Intuitive
- Self Aware
- Predictive
- Self Healing
- Simple, Policy Based, Easy
An Active File Management Concept
Providing Primary Read
Backup and Secondary Tiers
In an Active Archive Environment
+
On Site - Off Site Replication Recovery
+
Private and Public Cloud Integration