COGNITIVE DATA MANAGEMENT

How Metadata is Changing the Landscape of Storage

The New York City Subway Mystery

Ever wonder...

- Why the A train is so wide
  but the 1 train is so narrow?

- Why you have to walk an entire avenue
  to transfer between them at 42nd St?

Proprietary Vendors

NYC's early subway system were made up of

3 competing companies:

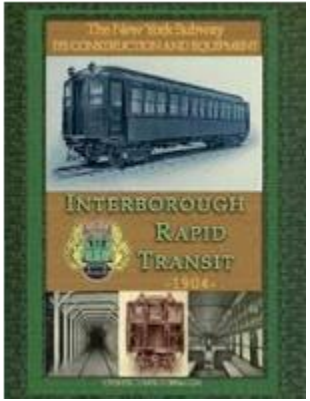
1

BMT

2

IND

3



IRT

A Complex Network

277 stations underground	**153** stations elevated	**29** embankments	**468** stations total
31,180 turnstiles	**60** elevators	**230** total route miles	
656 miles of track	**68** bridges	**14** underwater tunnels	

Longest ride with no change of trains:

The A train 31 miles from 207th Street in Manhattan to Far Rockaway in Queens

Longest ride with transfers:

The 2 Train from 241st Street in the Bronx then transfer to the A train to Rockaway. 38 miles.

Technical Delays

- Second avenue subway construction started in 1929, went on hold multiple times:
  - **2500 design changes!**
  - **$30m on top of the current $4.5B cost**
- **TODAY:**
  Carries more passengers each day than Chicago's entire subway system

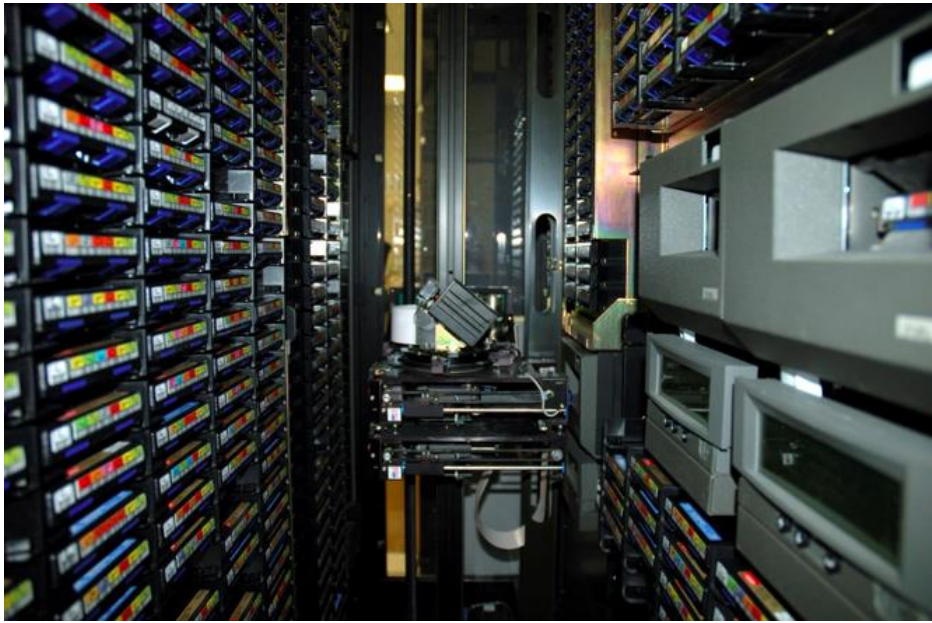
Increasing Costs

- The first subway cost five cents to ride.
- Brass tokens were introduced when fares were raised to 15 cents, as they couldn't construct turnstiles that would accept two different coins.
- Tokens -- once an icon of the NYC subway -- were used for fifty years before the MetroCard was introduce
- 2006: Introduction of electronic payment with MasterCard. Mobile payment for 2021....

Capacity

- 24 lines in subway run 24/7/365
- Over 5 million people use it daily on weekdays, most trafficked public transit system in the Western world.

What do the NYC Subway and IT have in common?



Required change that support

1

Simplicity

2

Scalability

3

Vendor neutrality

was a requirement

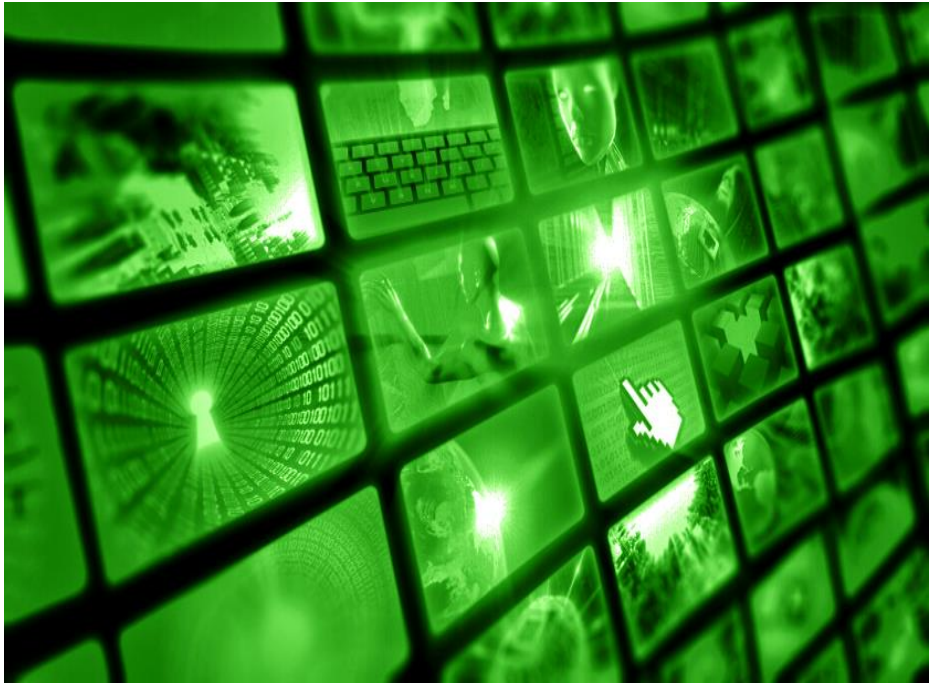
4

Maximized utilization

of their infrastructure

Data Usage Has Evolved

- Global broadband and mobile technology now expose timely, worldwide information
- The right information to the right people - in real time - producing better business and social outcomes
- Keep it all, keep it forever
- Collaboration



How do you get from point A to point B?

Collaboration Is KEY

Has the natural evolution of

open technologies

caught up to, and surpassed,

the functionality of proprietary

systems?

Proprietary Data Movement

The workhorses of traditional data center:

HIERARCHICAL STORAGE MANAGEMENT

...But is it still what we need?

What about everything else?

Your data center

What Do You Do With The Next

BIG Thing?

It Shouldn't Take a "Moonshot" Program

To take control of the problem:

- **Fits your current infrastructure** and flexibility to deploy whatever new storage technology - NO MORE RIP & REPLACE
- **Provides an intelligent and constantly updating** link between data assets across file systems and storage locations on any hardware
- **Automates data movement** between storage tiers for continuous optimization of storage capacity
- **Enables the management of all file and object data across all storage infrastructure** regardless of storage hardware type, configuration or vendor…

Goals for the next big thing

This is where metadata becomes powerful:

a. Maximize the value of data and **improve workflow**
b. "Silo Busting" so data is always in your control
c. Never be dependent due to proprietary technologies - **Universal Translator**
d. No more "rip and replace" storage strategies
e. EverGreen storage means seamlessly migrate and the ability to add the newest technology anytime

Use the most cost effective storage solutions - **Easily!**

A metadata driven solution

STRONGLINK

As a robust and cognitive platform for managing data across any heterogeneous storage and any location

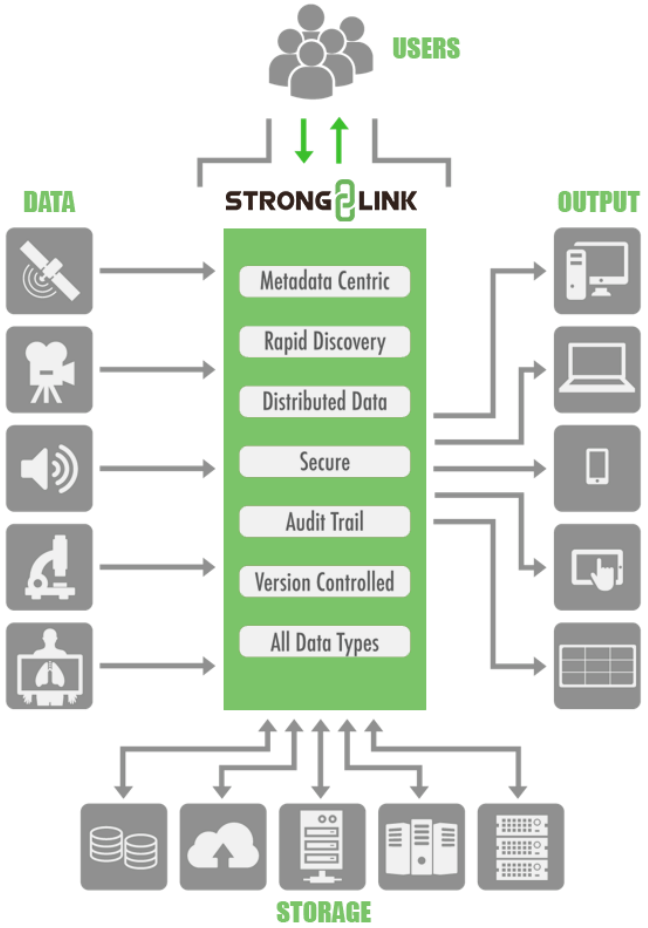
Leveraging the full range of de facto and de jure standards for data access, data organization, and data monitoring

Easily added to existing environments

Providing a Simple and Cost-Effective Solution for

DISCOVERING
AGGREGATING
MANAGING

all data based on metadata and business policy...



Gateway To the Archive and Cloud

StrongLINK Use Case 1

- Cloud enable your current storage.
- Seamlessly archive to LTFS tape and object storage.
- Policy driven content movement including migration, replication and multi-copy data protection.
- Use your own hardware: No “rip and replace” or “Plug and Play” Appliance.
- Powerful ROI: No Terabyte based licensing.
- Replaces applications like backup and HSM.

Backup and Data Protection

StrongLINK Use Case 2

- Simple “set and forget” policies
- Business data continuity
- Multi-copy, multi-site, LTFS tape and cloud
- **Version control, journaling and audit control**
- Meet governance and compliance requirements
- Easy-to-use restore

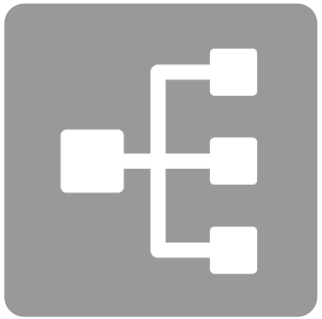
Collaboration

StrongLINK Use Case 3

- Search anything: object and file storage
- Accelerate business processes and workflow
- Parse most file “headers”
- Metadata level control
- Access right and policy based management
- Custom view based on query results

Global Accessible Namespace

StrongLINK Use Case 4



- Global visibility into all storage
- Unite disparate, heterogeneous storage
- Share across data types and silos
- Connect: SAN, NAS, DAS, Object, Cloud, etc.
  - S3/Glacier, CEPH, SWIFT, StrongBox NAS, BlackPearl
- Manageable data lakes

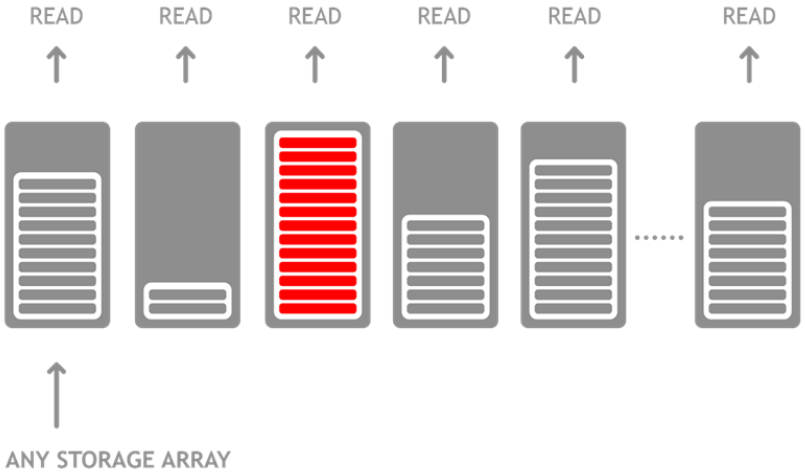
Virtual Storage Architecture

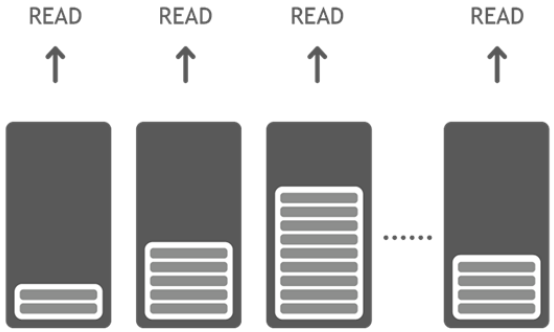
StrongLINK Use Case 5

- Consolidate storage infrastructure
- Automatic migration for the right data in the right storage
- Maximize storage utilization and performance
- Automate management by workflow
- Painless migrations, eliminate storage sprawl
- Reduce vendor dependencies
- Lower total cost of ownership

Managing Data Across Digital Stove Pipes

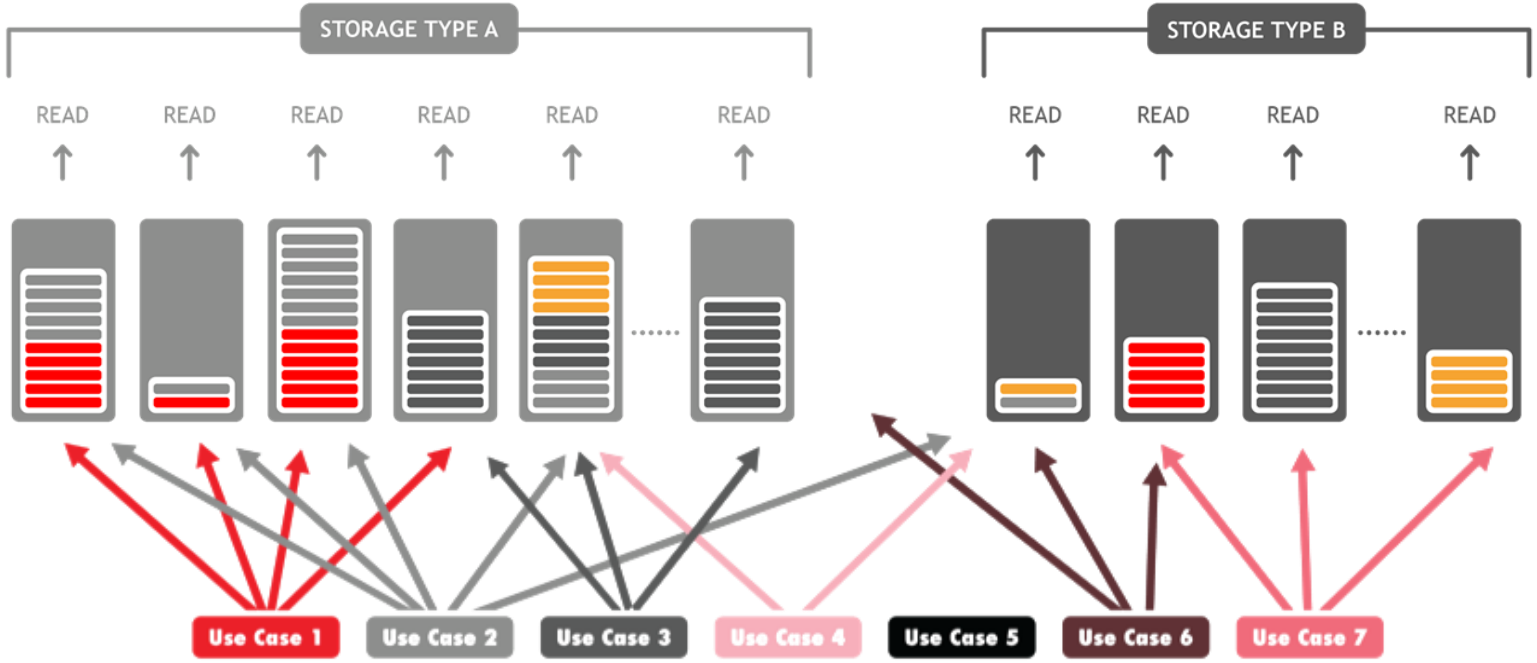
Different Storage Types and Use Cases Increase Management Complexity





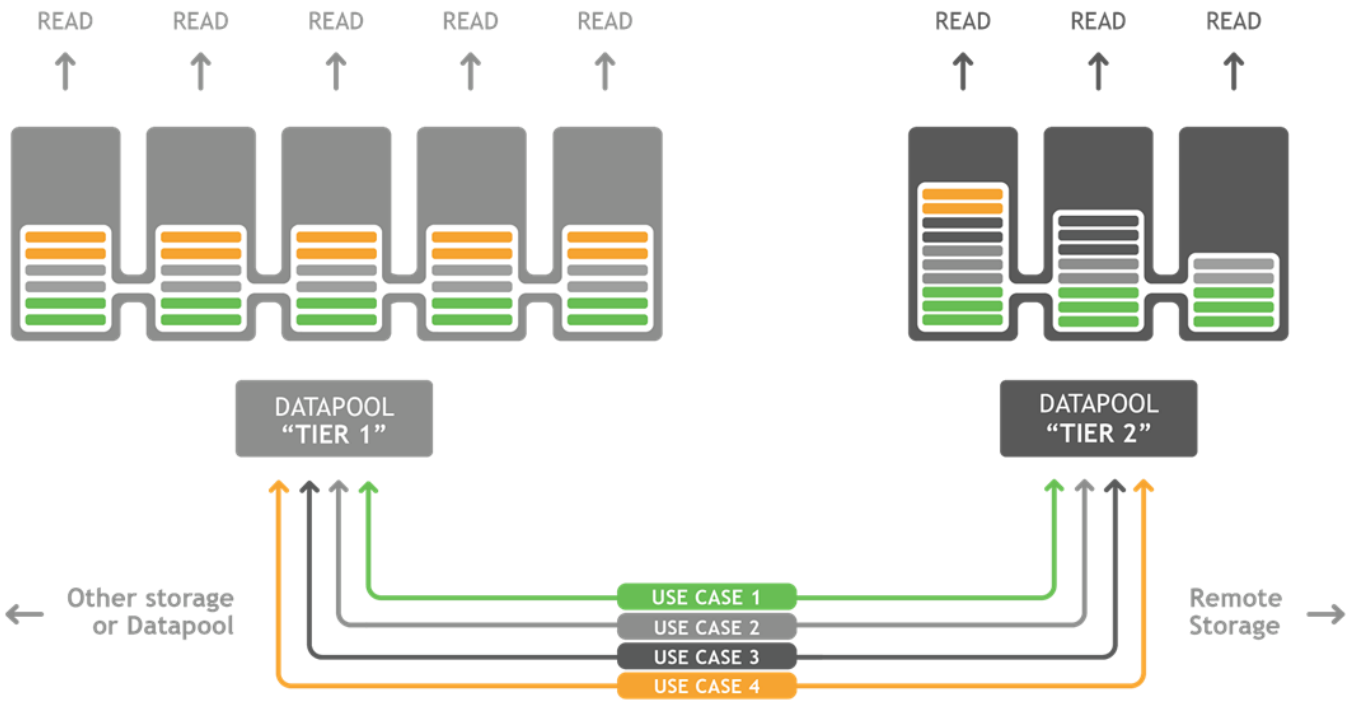
More Silos = More Confusion & Waste

1. New Data is added to each silo according to use case, performance, etc.
2. Each individual data group grows at different rates.



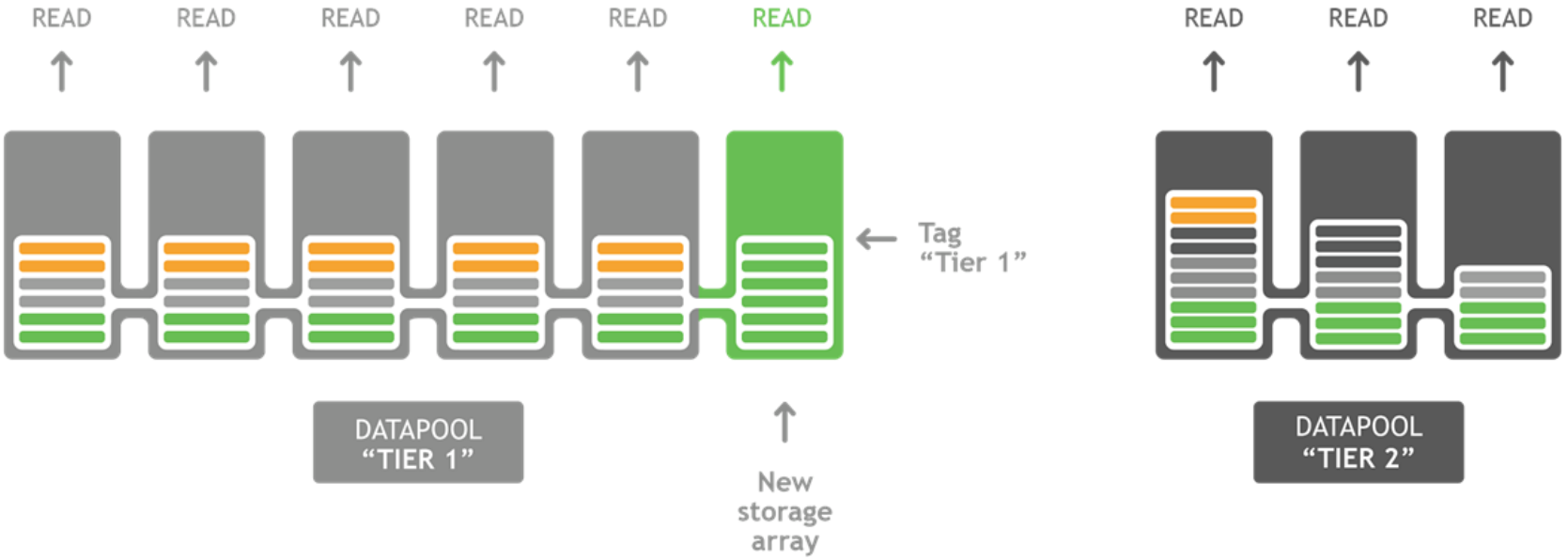
Quotas & Capacities Managed by Policy

Quotas and access rights defined by User, Role, Project, Data Types etc.



Adding or Removing Storage to Pools is Easy

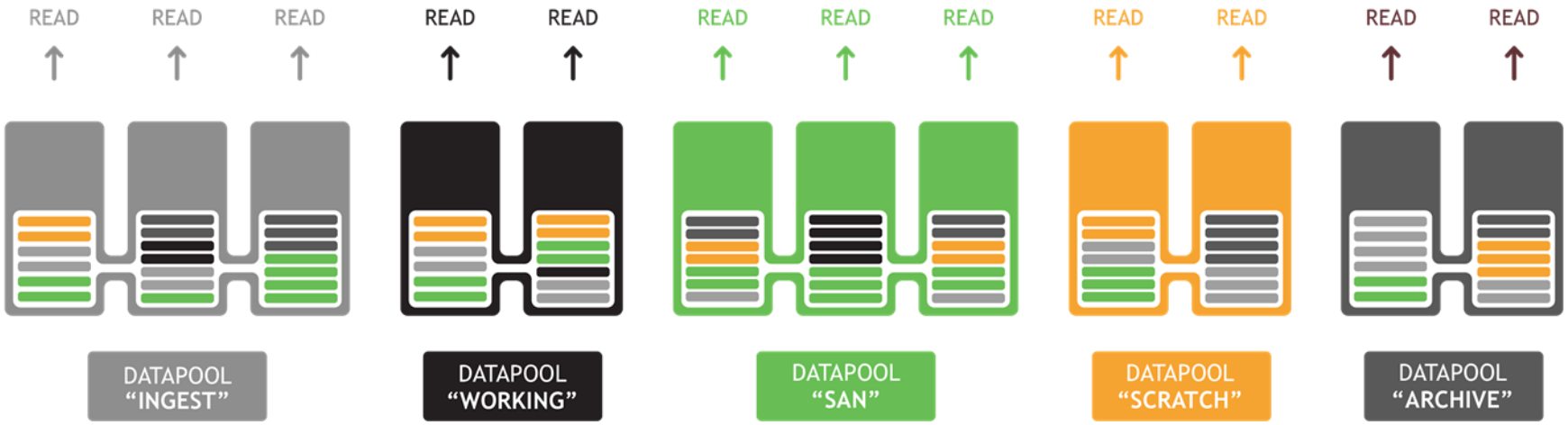
New Devices are added to the DataPool by simply tagging them.



StrongLINK DataPools Virtualize Any Storage Type

Consolidate Storage Resources and Eliminate Silos

New Devices are added to the DataPool by simply tagging them.

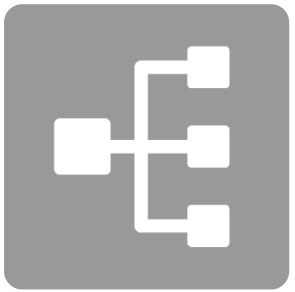


Unleash the Power of your data.

DATA PROVENANCE

FLEXIBLE MANAGEMENT

INDEX & SEARCH



WORKFLOW AUTOMATION

CENTRALIZE STORAGE

Enabling the Future

1

Simplicity

Works with your existing systems

2

Scalability

Evergreen storage strategy

3

Vendor neutrality

“Silo Busting” - improve collaboration and data access

4

Maximized utilization

while improving workflow

Smarter Metadata Management makes data storage EASIER

The Future Is Already Here

LET'S LOOK TOWARDS THE FUTURE AND GROW TOGETHER.

ANY QUESTIONS?

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