

Redefining the Economics of Enterprise Storage

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**We believe that redefining
the economics of Enterprise
Storage helps businesses
to grow and thrive**

**Customers will have access
to technology solutions that
work harder for them**

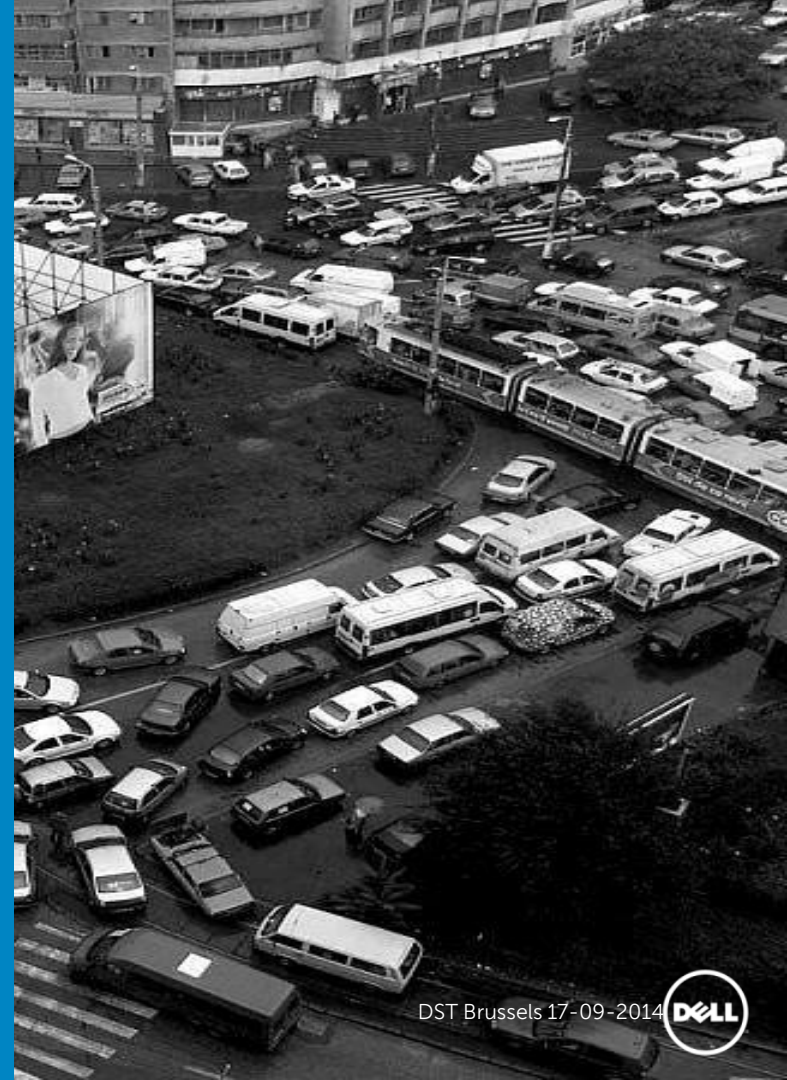
Complex and costly legacy

1. Fixed and predictable Storage array upgrade & migration cycles
2. Software re-licensing required with each upgrade or usage change
3. Data rigidly coupled to hardware
4. Capacity overprovisioning required to meet SLA's
5. Storage not part and optimized for a broader datacenter/cloud ecosystem



Storage Industry Trends

1. Budget constraints continue
2. Growth in unstructured data
3. Technology dramatically changing traditional storage architectures
4. Seeking to build upon virtualization for incremental efficiency
5. Need to leverage data to make better business decisions



Economic control

Operational Efficiency

The new proprietaries

The new proprietaries
Expensive solutions where operational savings are consumed by high costs with a lock-in penalty

Initial Cost



Ongoing Cost



Legacy systems

Complex and costly monolithic systems that lock in and don't scale

Initial Cost



Ongoing Cost



Redefined economics

Open systems and solutions that are delivering superior value with clear customer benefits



Initial Cost



Ongoing Cost



Commodity systems and services

Low-cost commodity components with no solutions value-add

Initial Cost



Ongoing Cost



Performance/Value

Initial Cost = CAPEX, Ongoing Cost = OPEX)



Customer benefits

A

Acquire, **deploy**, and **grow** Storage on demand

B

Adapt **seamlessly** to changing business needs

C

Intelligently **manage** data assuring business continuity

Delivering superior value

Dell Storage strategy

1

Harness **state-of-the-art** technologies to deliver **innovative**, **simple** and **affordable** solutions

2

Deliver **workload-driven** architectures that are **flexible** and **modular**

3

Accelerate **software** and **service** integration

Redefining the economics of Enterprise storage



Our strategy in action

-

Flash for the price of disk

Redefining the Economics of
Enterprise Storage

- **56% lower cost on disk**
- **90% latency reduction**
- **75% lower cost versus the competition**

- Dell moves hot data to Flash with industry's first MLC/SLC intelligent tiering

- It improves performance for data-intensive applications and OLTP workloads

- It gives you the best performance at lowest cost



Businesses seek new ways to enhance datacenter efficiency

Evolutionary

Revolutionary

Server-side storage

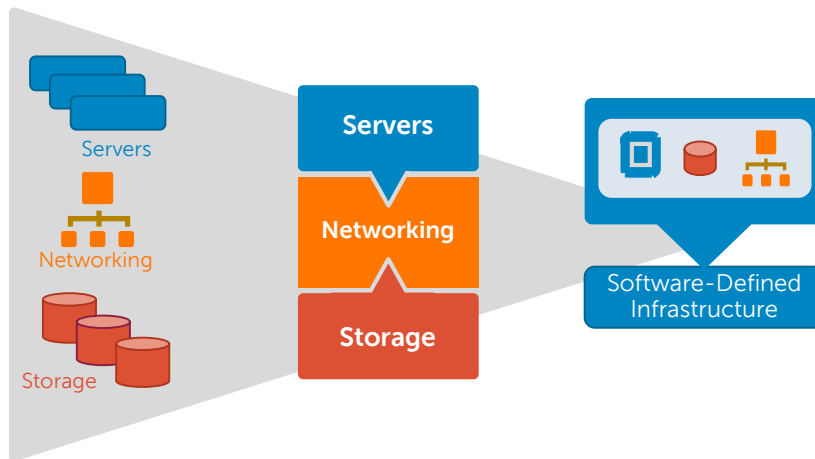
External SANs

Virtualized Storage

Physical Appliances

Virtual Appliances

Converged Solutions



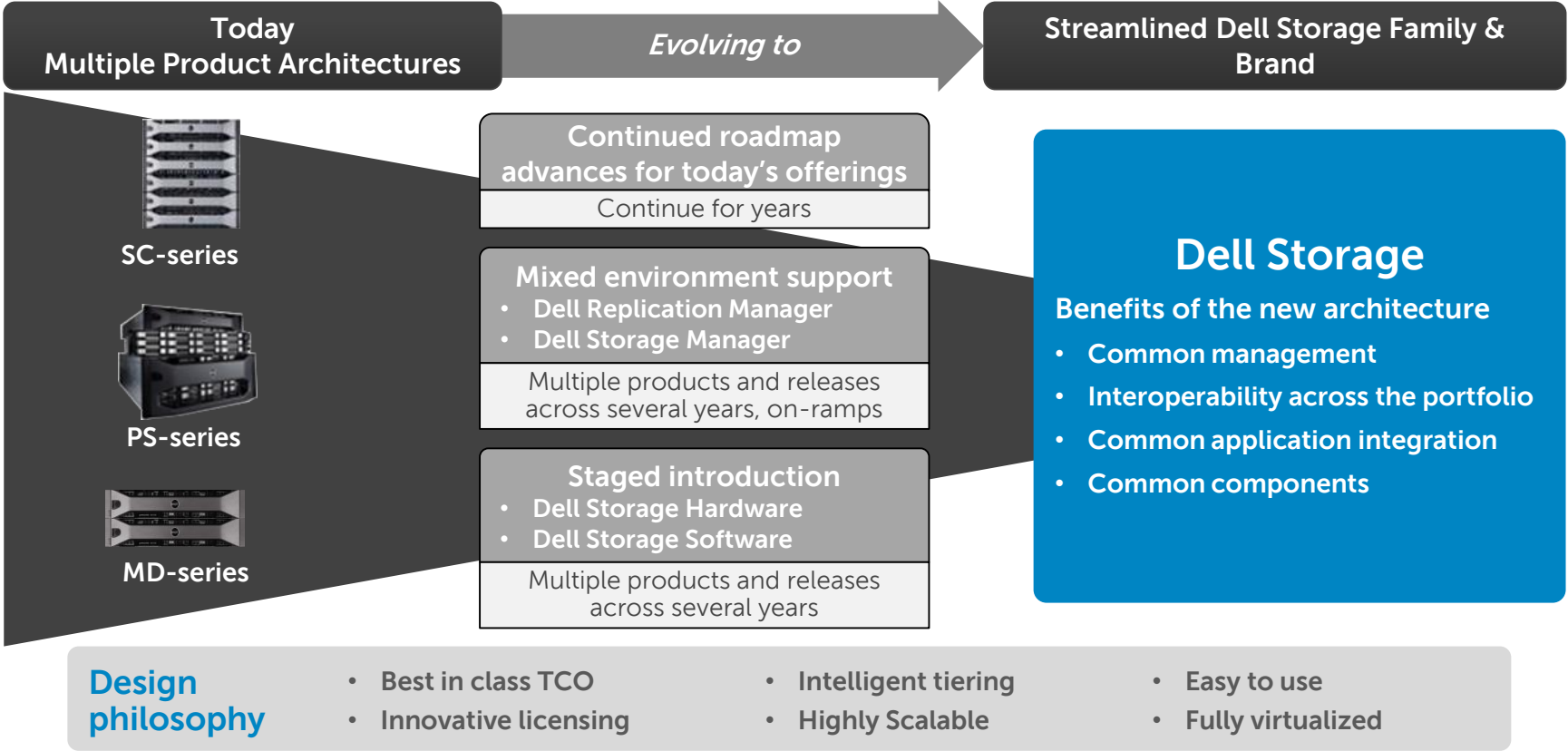
Hyper Converged

Scalable solutions for private cloud and XaaS

Software-only solutions

There is no one-size-fits-all solution and Dell has you covered both ways

Continuing to Redefine the Economics of Enterprise Storage



Introducing a key product

Dell Storage

SC4020



All-in-one solution

Dual controllers, plus 24 drive slots in 2U

Up to **72%** lower cost
than competing arrays for pure
flash solutions*

Extends the advantages of enterprise storage to small and mid-sized deployments

Enterprise Performance

- Optimized for 100% FLASH or hybrid SSD/HDD configurations

Best-in-Class Intelligence

- Advanced levels of automation and control, auto-tunes your datacenter

Unprecedented Value

- Compact footprint ideal for SME standalone or ROBO deployment. Highly efficient multi-protocol solution

Primary Dell SC4020 Solutions

Mid-Tier Standalone

Big technology
advantage for
smaller budgets



Target: \$25-50K
SAN solutions

Distributed Enterprise

Integrated
single point
of mgmt



ROBO/departmental
core-edge solutions

All Flash or Hybrid Solutions

Put 100% of your
hot data on flash

Flash
tiering

Flash for the
price of disk

It is *the* CIO must talk about

Software Defined Storage (SDS) has all the potential to become the next CIO agenda topic.

It is related to Software defined Networking and Software defined Datacenter

There is a need for:

- Understanding - education
- Business benefits - value proposition
- Seeing opportunities - positioning
- Minimizing risks - services





Software defined not that well defined....

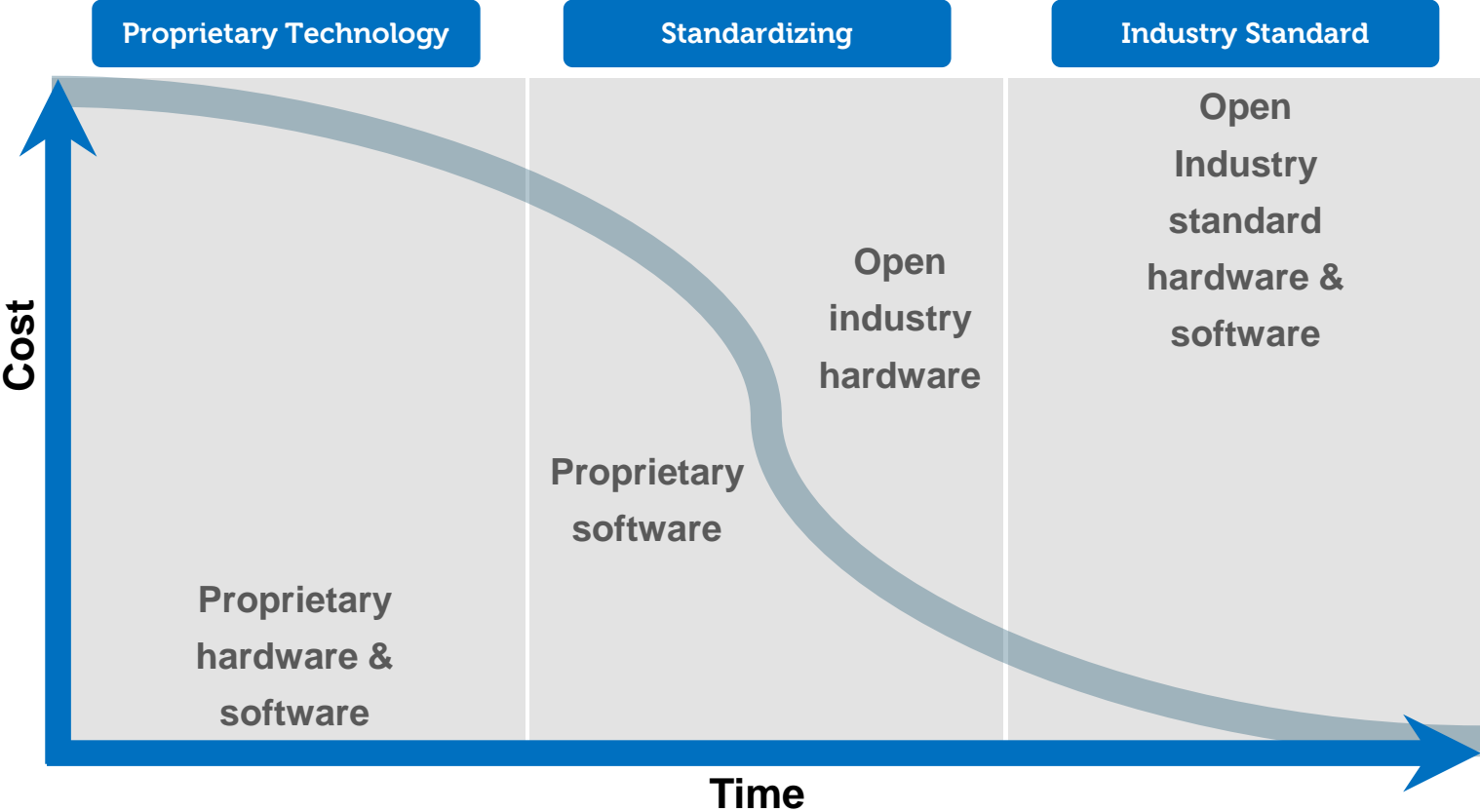
“To help clarify the market and reduce confusion, IDC has put a stake in the ground by clearly defining software-based storage and developing the industry’s first comprehensive taxonomy supporting this definition. “

IDC Press Release, April 15, 2013
“IDC Brings Clarity to Software-Based/Software-Defined Storage Markets”

<http://www.idc.com/getdoc.jsp?containerId=prUS24068713>



What is happening?



Right data, right place, right time, right cost

Standardisation

Affordable Storage



Dell MD-Series

MD3-Series of dense arrays are highly reliable with versatile scalability that help customers significantly increase storage capacity without enlarging data center's footprint.

Hardware abstraction

Storage Virtualization



Dell PS-Series

PS-Series is fundamentally changing the way enterprises think about purchasing and managing storage. Built on an advanced, peer storage architecture, PS simplifies the deployment and administration of consolidated storage environments

Multi purpose hardware and software

Intelligent Data Placement



Dell SC-Series

SC-series of automated intelligence manages a virtualized, scalable pool of disks for block and file to maximize performance to lower Total Cost of Ownership. Performance and capacity requirements through automated intelligent data placement, keeping hot data on high performance drives and cold data on large capacity optimization

Software Defined Storage

Storage Virtualization



Dell SDS-offerings

Software-defined storage separates storage hardware from the software that manages the storage infrastructure. The software enabling a software-defined storage environment provides policy management for feature options such as deduplication, replication, thin provisioning, snapshots and backup



Dell Software Defined Storage offerings

Software Defined Storage

Storage Spaces



OpenStorage



Virtual SAN



Storage Server



Unified & Distributed



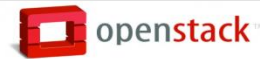
Big Data



Object Storage



OpenStack



Web-Scale Converged



Dell XC Series Web-Scale Converged Appliances



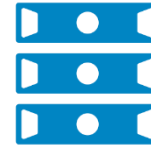
Converged
storage and
compute



Highly distributed,
shared nothing
software



High
performance
x86 hardware



Massive and linear
scale-out
architecture

Solutions details

- Dell PowerEdge servers with Nutanix Software
- Bundles for multiple virtualized workload types
- Dell Installation & Implementation
- ProSupport w/ Collaborative Nutanix Support

Target Markets

- Simple, scalable & high performance for VDI
- Departmental virtualization
- Multi-hypervisor environments and migrations



Customers should
not worry about
building the ship,
but about sailing
to the right
destination



Redefining the economics of Enterprise Storage





The power to do more