

Redefining the Economics of Enterprise Storage





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

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Five important Storage industry trends



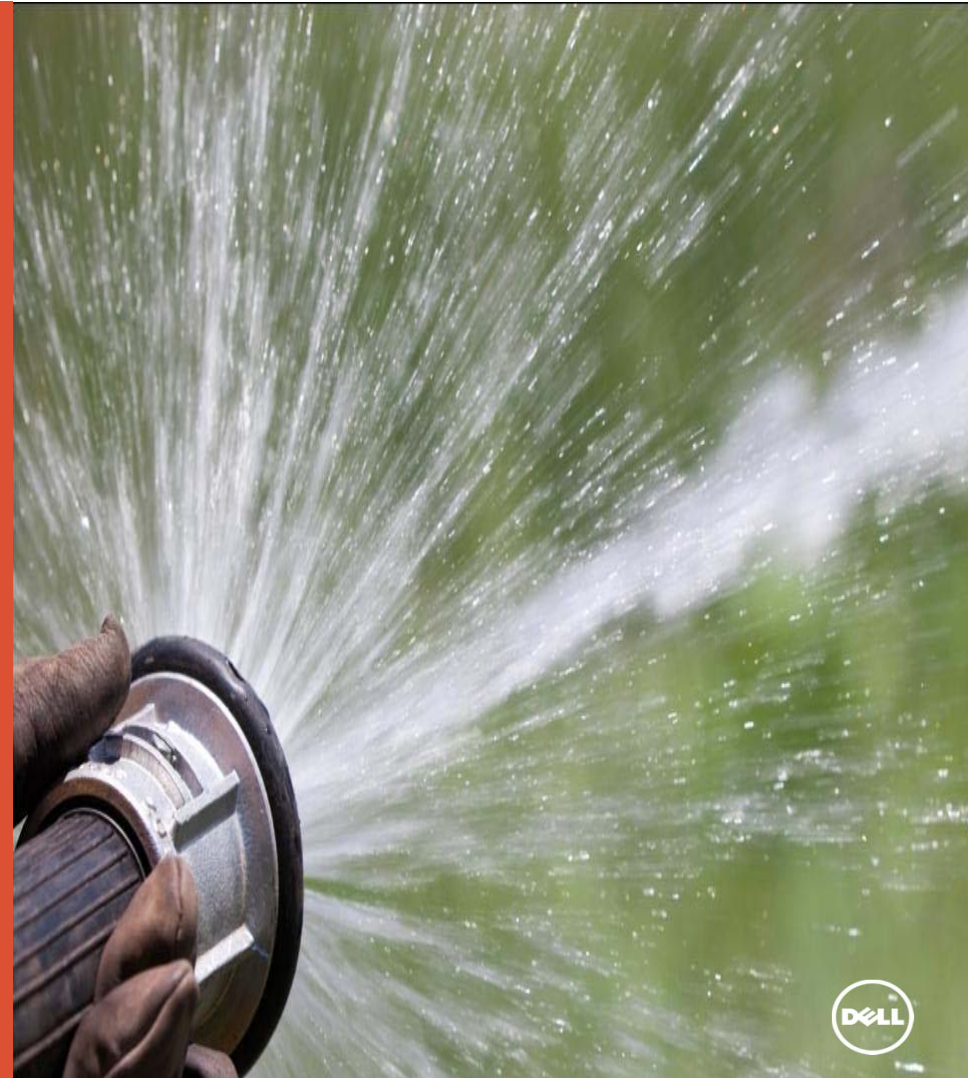
1: Budgets constraints continue

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2: Growth in unstructured data

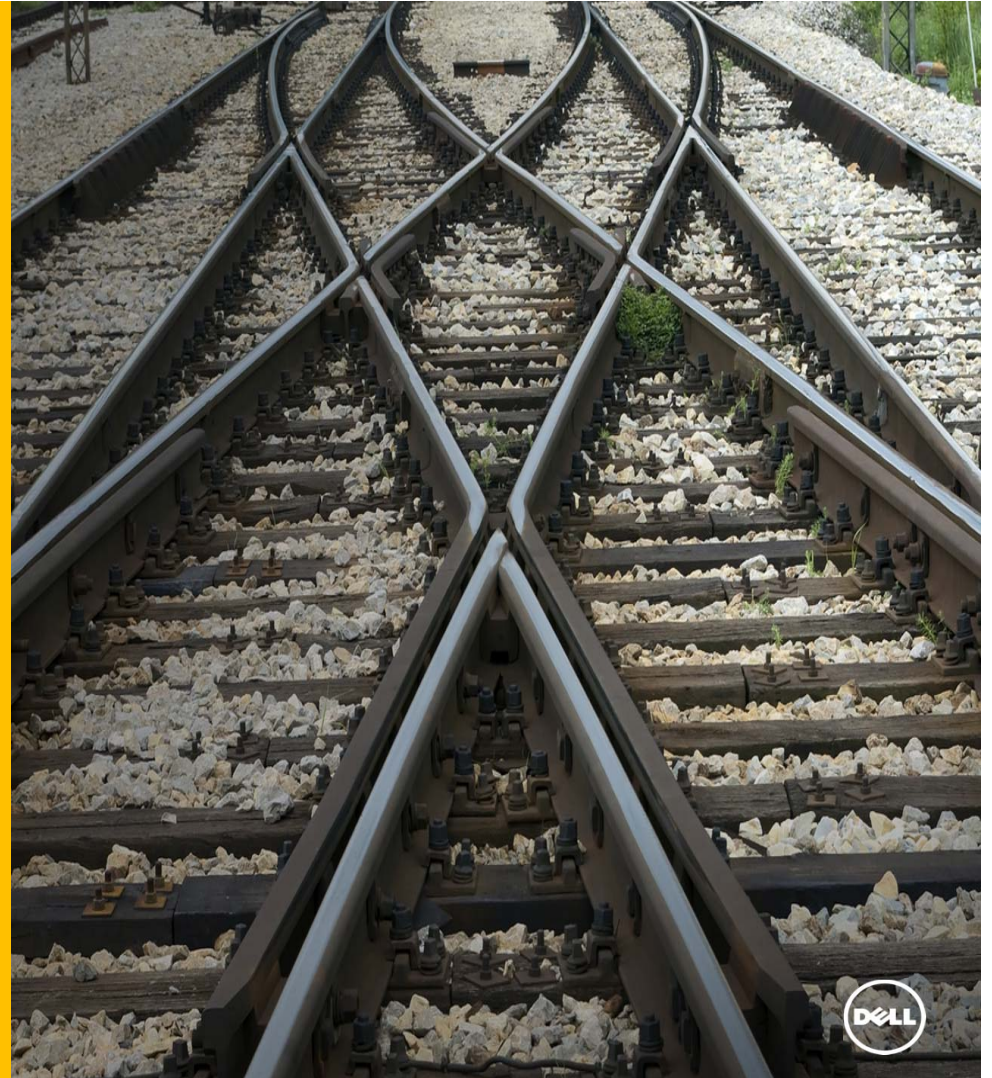
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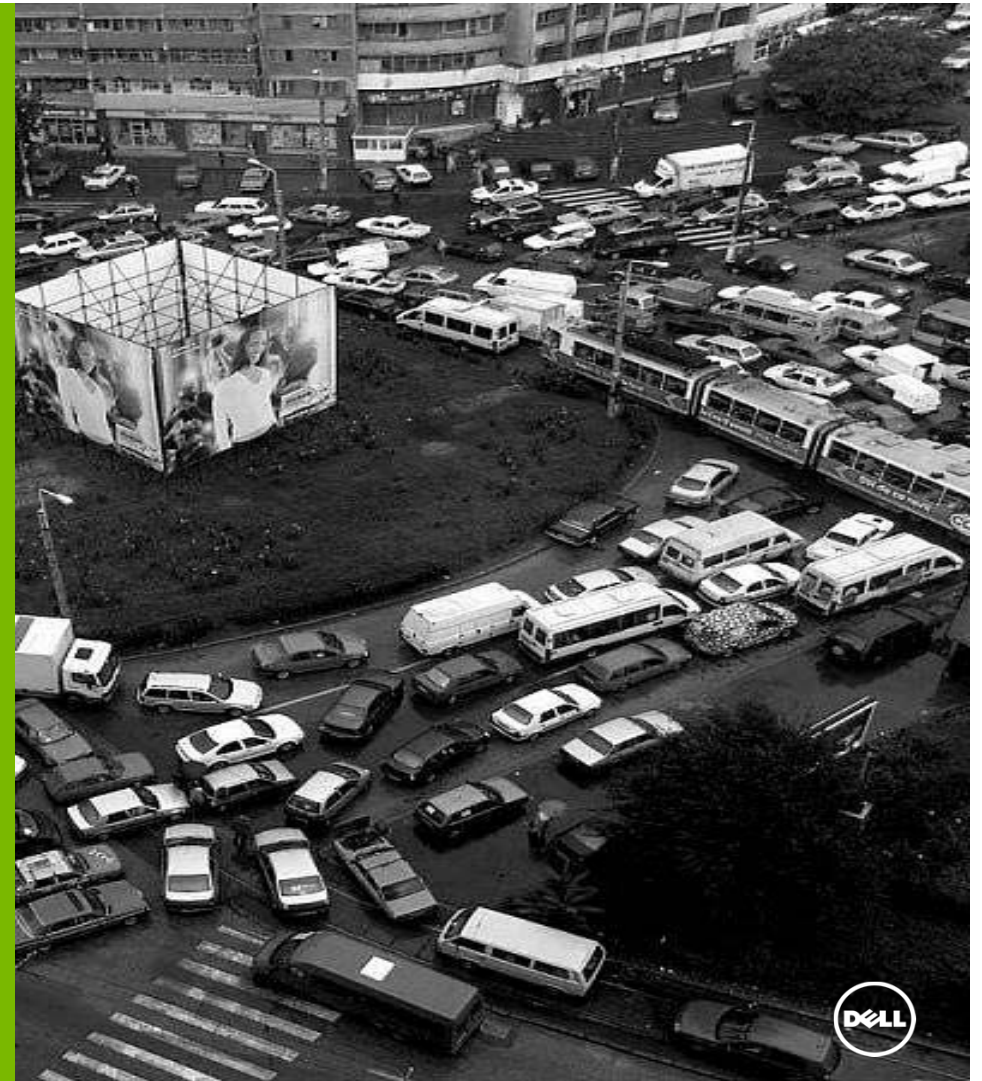
Technology is
dramatically
changing
traditional
storage
architectures

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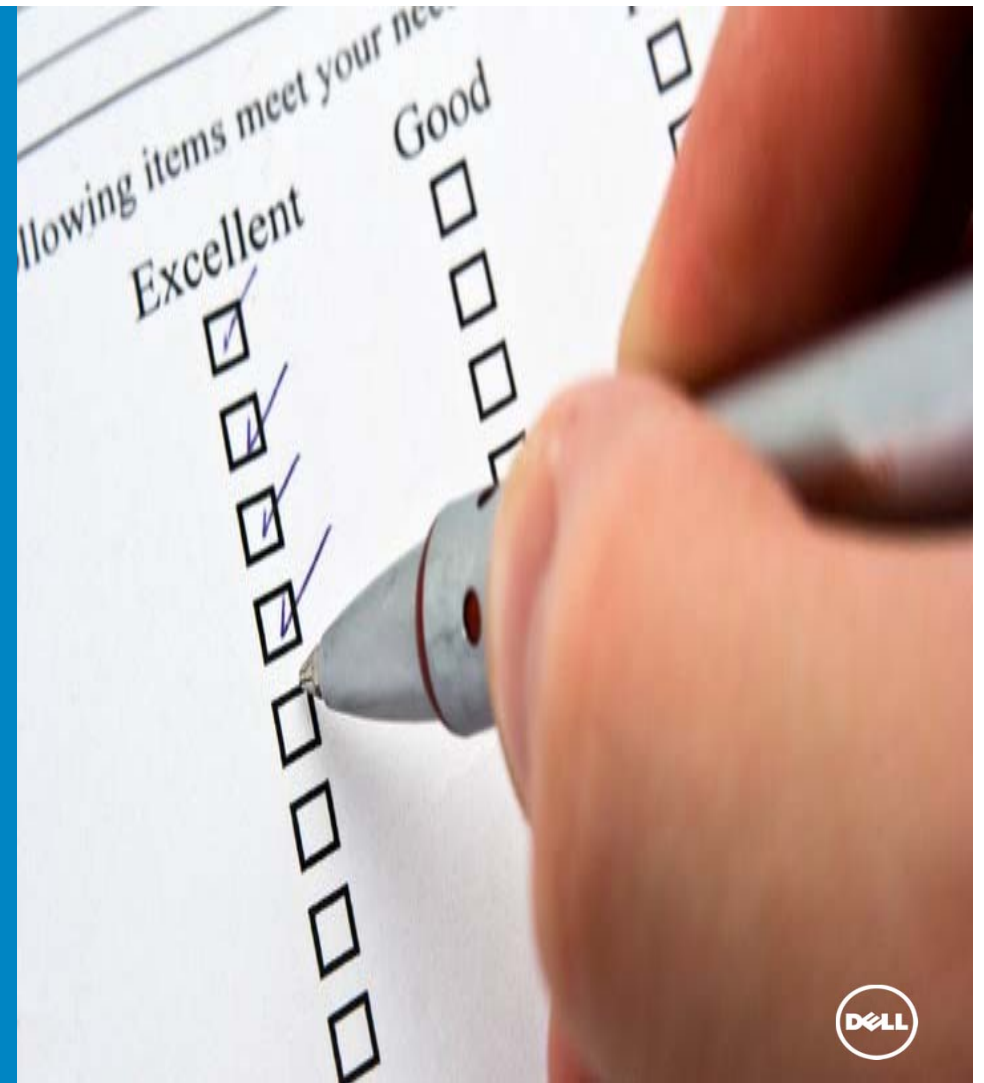
4: Seeking to build upon virtualization for incremental efficiency

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5: Need to leverage data to make better business decisions

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**Dell's Storage strategy
removes legacy limitations
and incorporate trends for
clear customer benefits**



Economic control

Operational Efficiency

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



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

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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



Dell is a **committed partner** as we embarked on a journey to create a new storage foundation

Modern Storage Architectures

- Designed from the ground up to be flexible and agile
- Uncoupled from the limitations of any legacy architecture

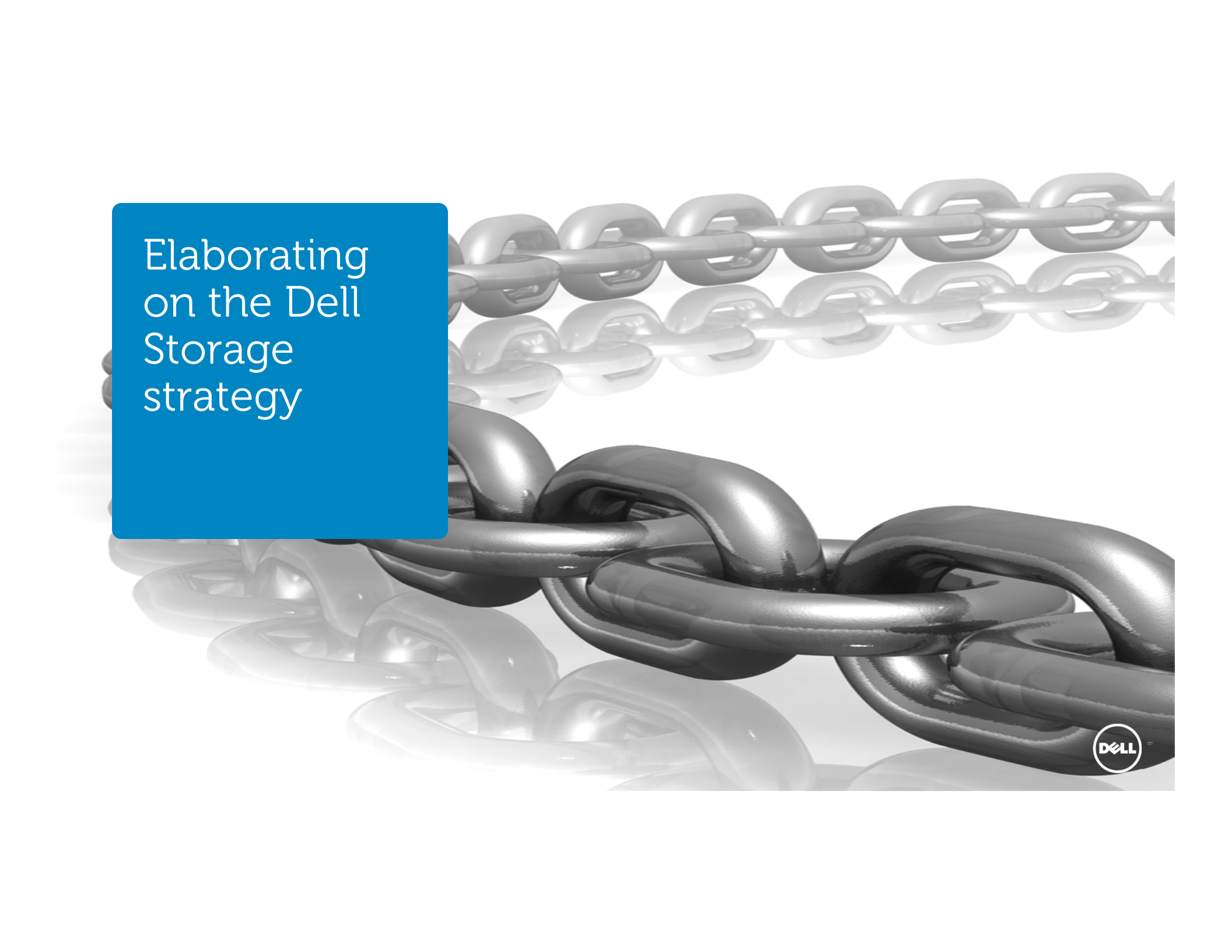
Deep Integration

- Offering customers easy access to new, sophisticated technologies
- Deploying common technologies across a family of storage products

Design philosophy

- Easy to use
- Fully virtualized
- Intelligent tiering
- Highly Scalable
- No forklifts upgrades
- Innovative licensing





Elaborating
on the Dell
Storage
strategy



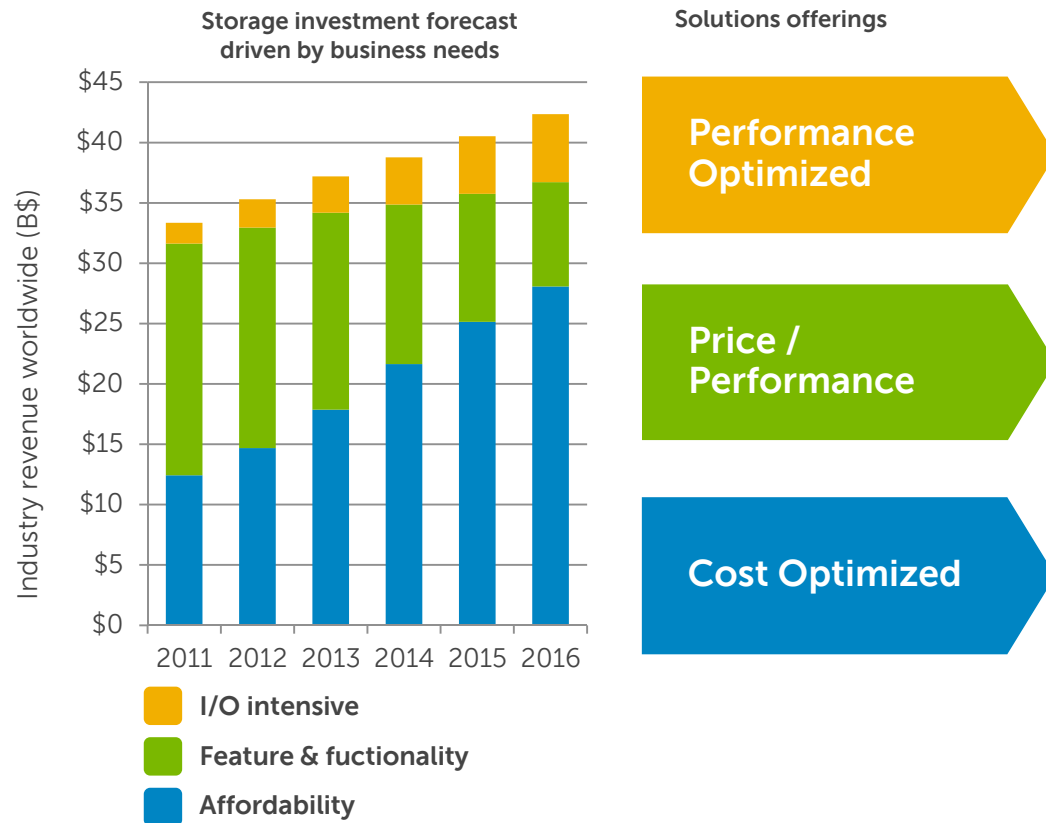


1

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

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Industry storage trends are changing traditional storage architectures





2

Deliver workload-driven architectures that are flexible and modular

Right architecture for right workloads



Big Data



VDI



Traditional IT



Cloud

Business Critical Workloads

I/O intensive workloads
Leverage flash storage
Server-side cache
Business critical

Oracle
SAP
SQL Server

Collaboration & Infrastructure

Optimized for virtualized environment
Price/performance
Traditional IT workloads

Exchange, Lync
SharePoint
File, print, web
VMware, Citrix, Hyper-V

Non-Mission Critical Workloads

Focus on \$/TB
Lowest TCO
Dense enclosures
Server-side storage

Cold data archive
Image archive
Data dump



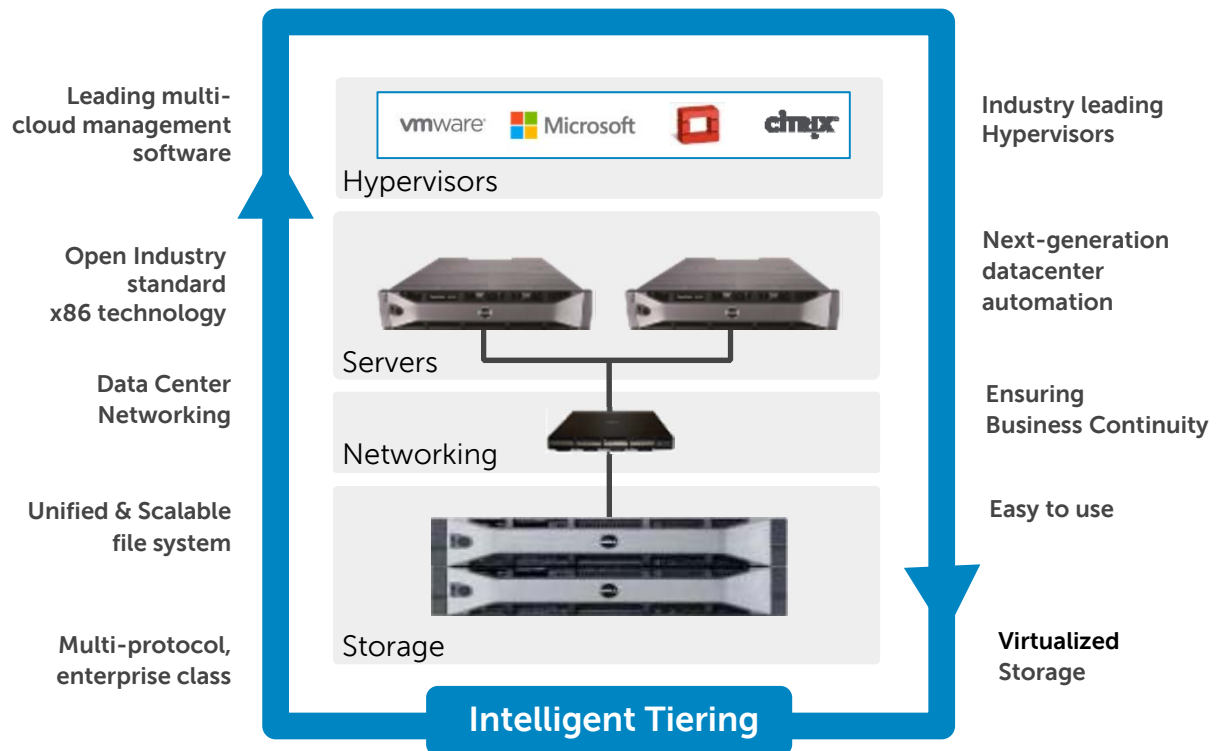


3

Accelerate software and service integration

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Full E2E integration for solving top pain points



Dell is your **most reliable Storage partner**

>\$1B

Storage revenue

Gartner

Leader in General Purpose
Disk Arrays MQ

#1

Vendor of choice for Flash

#1

iSCSI Market Leader

#1

Cloud Infrastructure
provider

4.900+

Patents on granted or
pending

41.000+

Service Professionals

140.000+

Channel partners
worldwide

#1

Midrange Storage Arrays
by Storage Magazine



An aerial night view of a city skyline, likely Tokyo, with numerous illuminated skyscrapers and buildings. A large red rounded rectangle is overlaid on the left side of the image, containing white text. The city lights create a vibrant, glowing effect against the dark night sky.

Elaborating on the Storage industry trends

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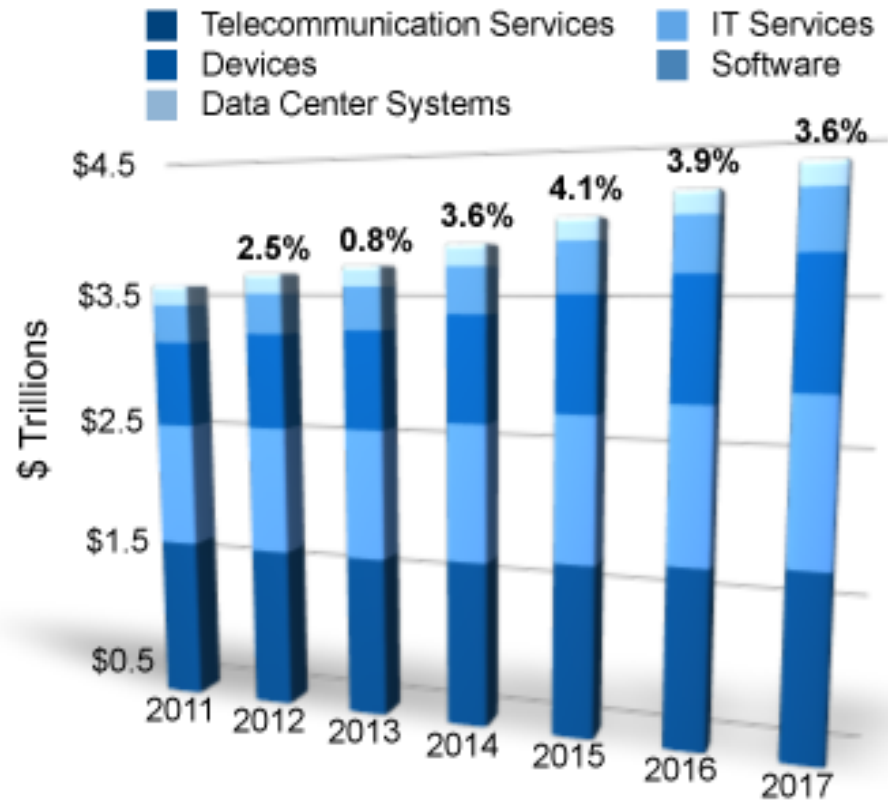




Storage industry trends

Budgets constraints continue

Global IT spending only grows 0.8% in 2013



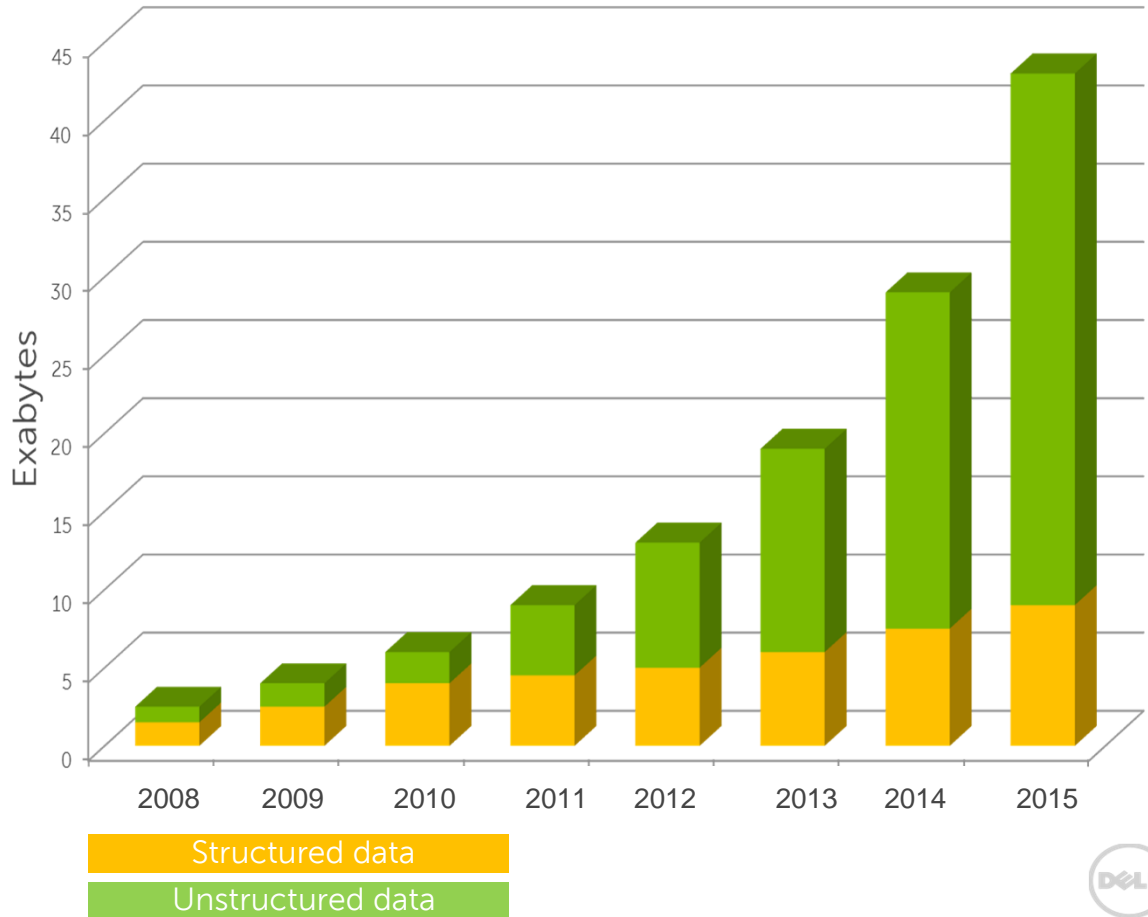


Storage industry trends

Growth in unstructured data

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85% of all data is unstructured



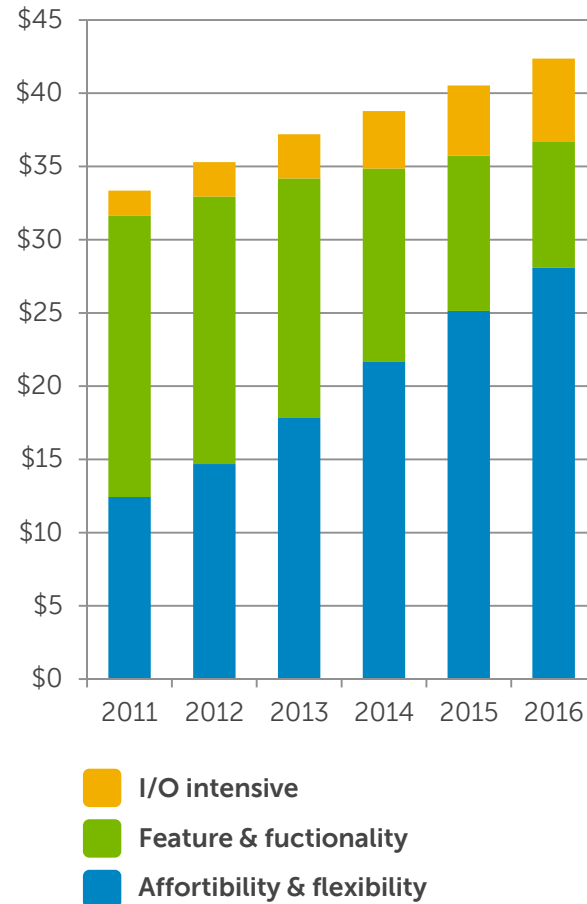


Storage industry trends

Technology dramatically changing traditional storage architectures

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Storage technology market mix shift



Performance Optimized

Hot data is moving to flash-based systems

Price/Performance Optimized

Over-featured systems are traded off against cost

Cost Optimized

Cold data is moving to 'cheap and deep' systems





Storage industry trends

Seeking to build upon virtualization for incremental efficiency

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New demands on IT

Exponential data & app growth

40,000,000,000,000,000,000,000 Bytes
(40 Zettabytes) data stored 2020.



App modernization & rationalization

High cost of ownership, costly & time consuming for IT to upgrade & maintain.



Aging, complex & inefficient data centers

Average data center is 12 years old, many not suitable for high density servers.



Mobile, social and BYOD demands

1/3+ in a CIO study cited mobility as one of their top-two priorities.





Storage industry trends

Need to leverage data to make better business decisions

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Many data sources might hold valuable information to run business better



Social & Sensor Data

- Facebook, Twitter, LinkedIn
- RFID, cell phone, temp sensor, etc.
- Multiple formats and different speeds of data creation
- Exponential growth



File Data

- Documents, images, videos, etc.
- Multiple formats
- Fast growth

Databases

- Structured data
- Transactional apps
- Moderate growth

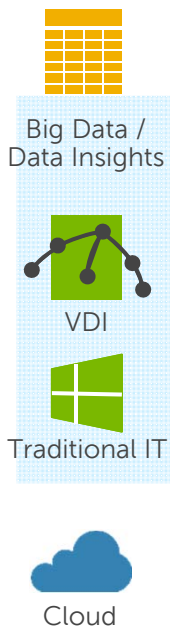


How industry
trend and
strategy are
bridged

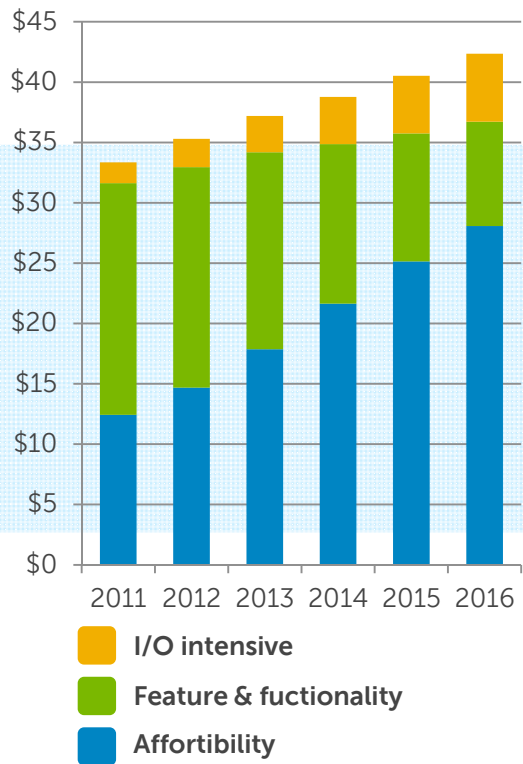
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Big industry themes



Industry Storage trends are changing traditional storage architectures



Dell strategy for best workload-driven architectures

Performance Optimized
Hot data is moving to flash-based systems
Best for Business Critical Workloads
Price/Performance Optimized
Over-featured systems are traded off against cost
Great for Collaboration & Infrastructures
Cost Optimized
Cold data is moving to 'cheap and deep' systems
Ideal for non-Mission Critical Workloads

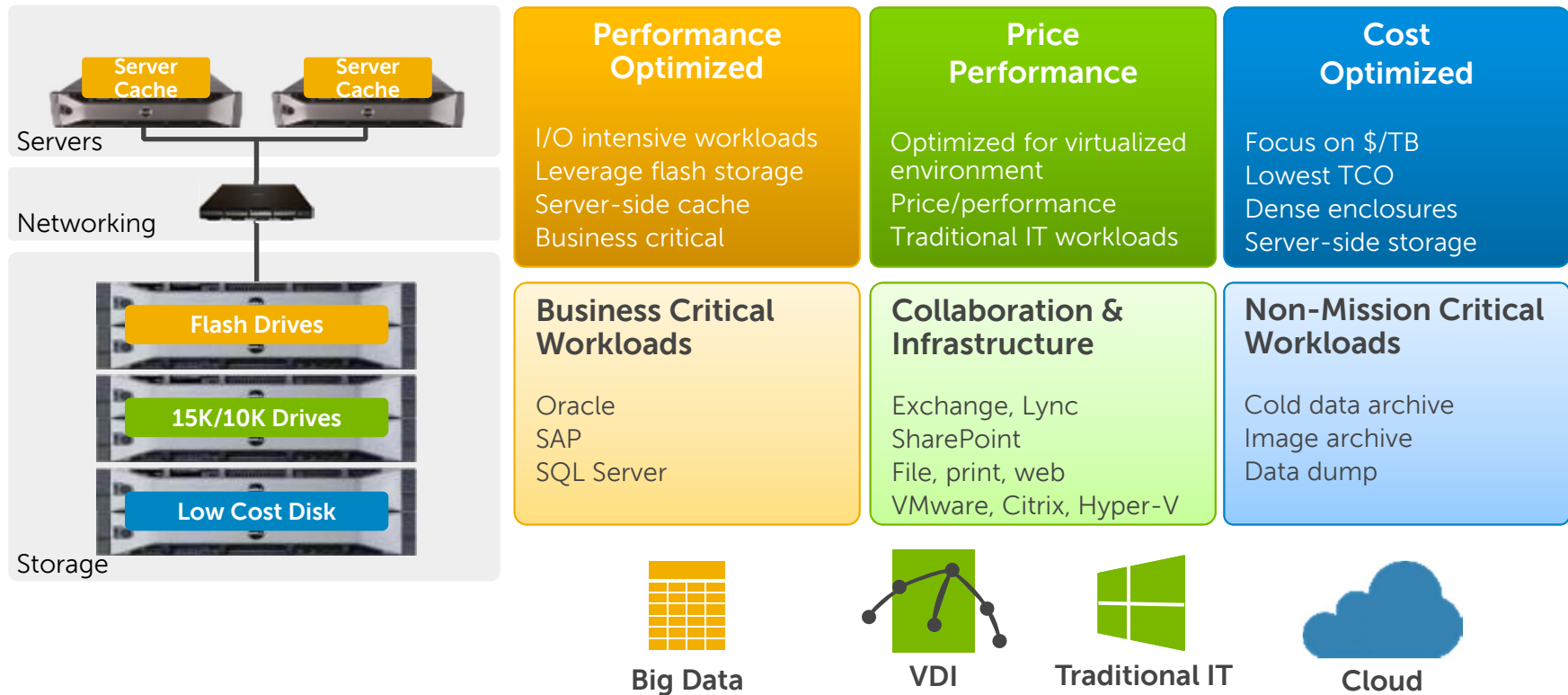
Optimized solutions that deliver superior customer value


High performance storage	Dell SC, FS Series
Adapt seamlessly to changing business needs Flash at the price of disk	
Easy-to-use virtualized storage	Dell PS, FS Series
Acquire, deploy, and grow on demand Peers scaling with application integration	
Affordable, entry level storage	Dell MD, NX, DL, DR Series
Intelligently manage data, business continuity High density & Software defined Storage	



Dell's Next Generation storage architecture

Best of 3 worlds in one single end-to-end architecture!





Elaborating on
the Dell Storage
design
philosophy



Dell's Storage design philosophy

Easy to use

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Enterprise power with everyday simplicity

Streamlines management

Management costs associated with comparable vendors are up to **60% more affordable** with Dell Storage

- Enterprise features that IT generalists can use
- Designed to scale performance and capacity linearly without disruption
- Automation to optimize resources and performance

Integrates easily

Approximately 89% of Dell Storage customers use their arrays in virtualized environments

- Tight integration with common application environments
- Environment flexibility that allows mix-and-match arrays to build tiered storage
- Designed to support virtualization



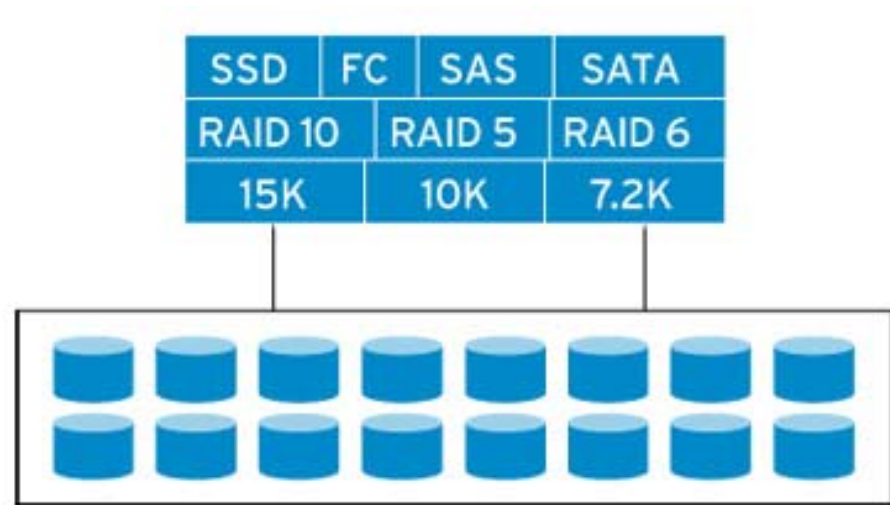


Dell's Storage
design philosophy

Fully virtualized

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Reduce storage costs up to 80 percent



Dell Storage virtualization complements any leading virtualization environment. Storage is presented to Virtual Machines as a single, virtualized pool of capacity, regardless of disk type, RAID level or server connectivity. This can help you can optimize efficiency, agility and resiliency.



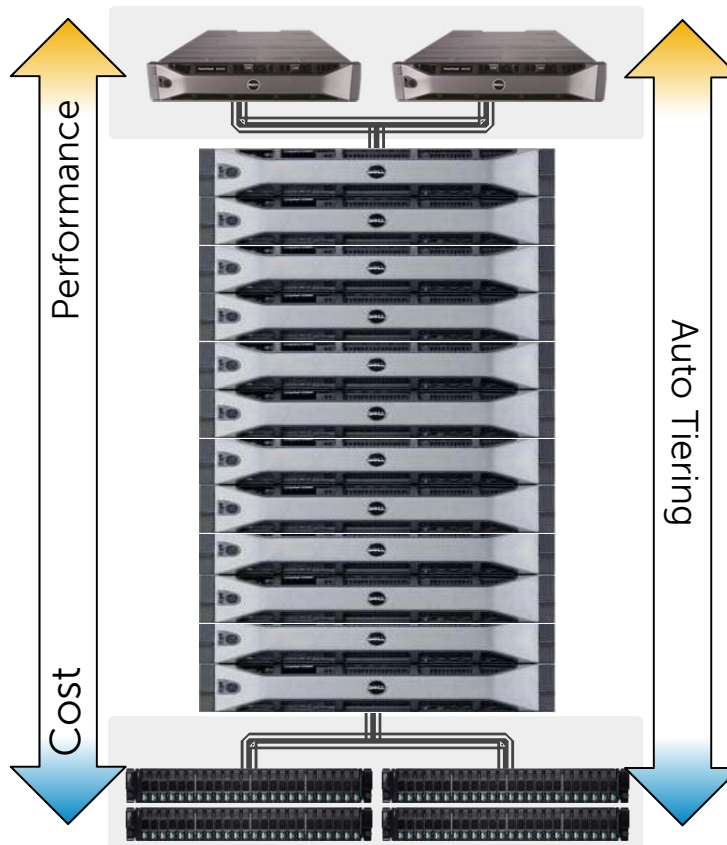


Dell's Storage
design philosophy

Intelligent tiering

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Up to 70% reduction of tier-1 Storage capacity



Tier 1 storage can be reduced by 70 percent by moving infrequently accessed data to lower storage tiers.

This speeds up your infrastructure and eliminates spending more money in your most costly tier



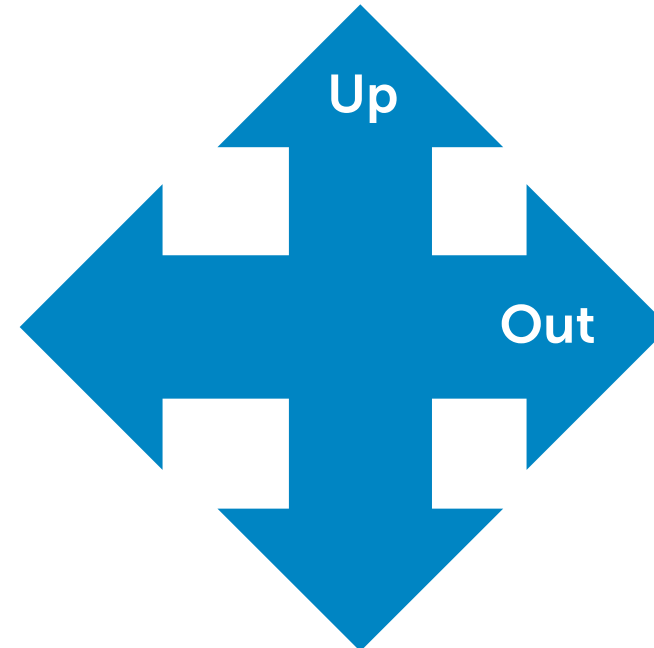


Dell's Storage
design philosophy

Highly Scalable

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Removing barriers to grow



Dell allows you to purchase only the storage you need when you need it, knowing you can grow your infrastructure with your needs.

Through Scale-out and Scale-up architectural designs we offer linear capacity and performance scaling for any business.



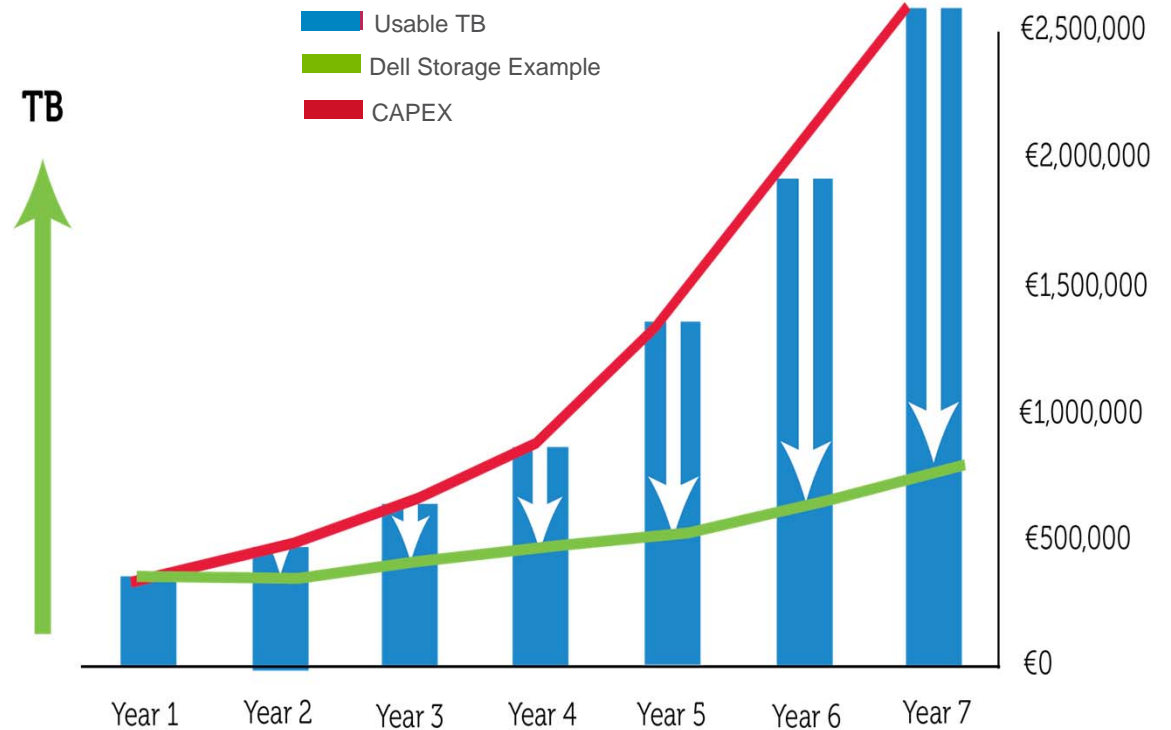


Dell's Storage design philosophy

No forklifts upgrades

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The architecture that saves money over time



Eliminating fork lift upgrades has a tremendous positive impact on capital and operating expenses.



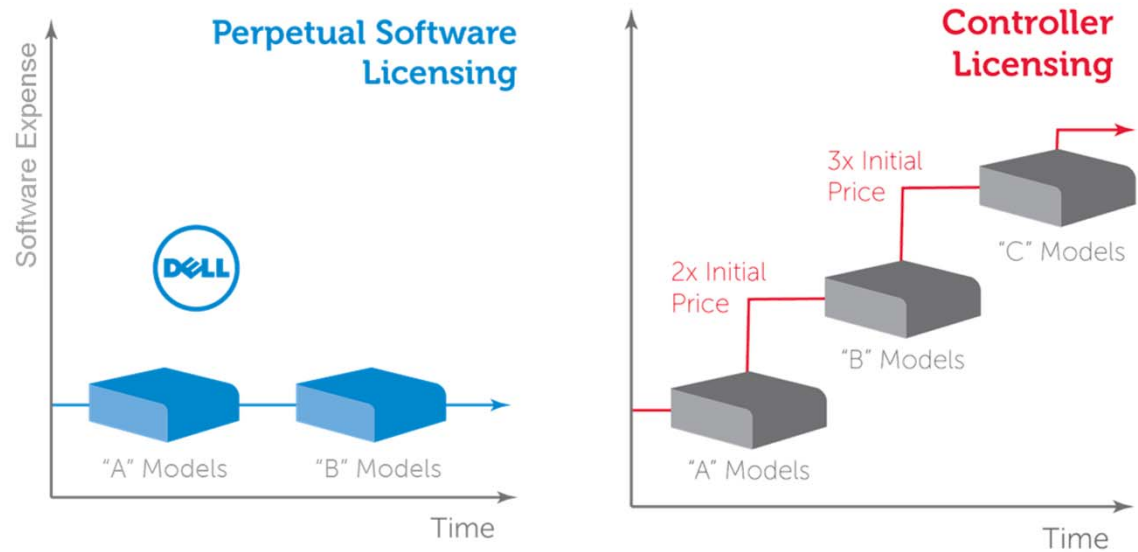


Dell's Storage
design philosophy

Innovative licensing

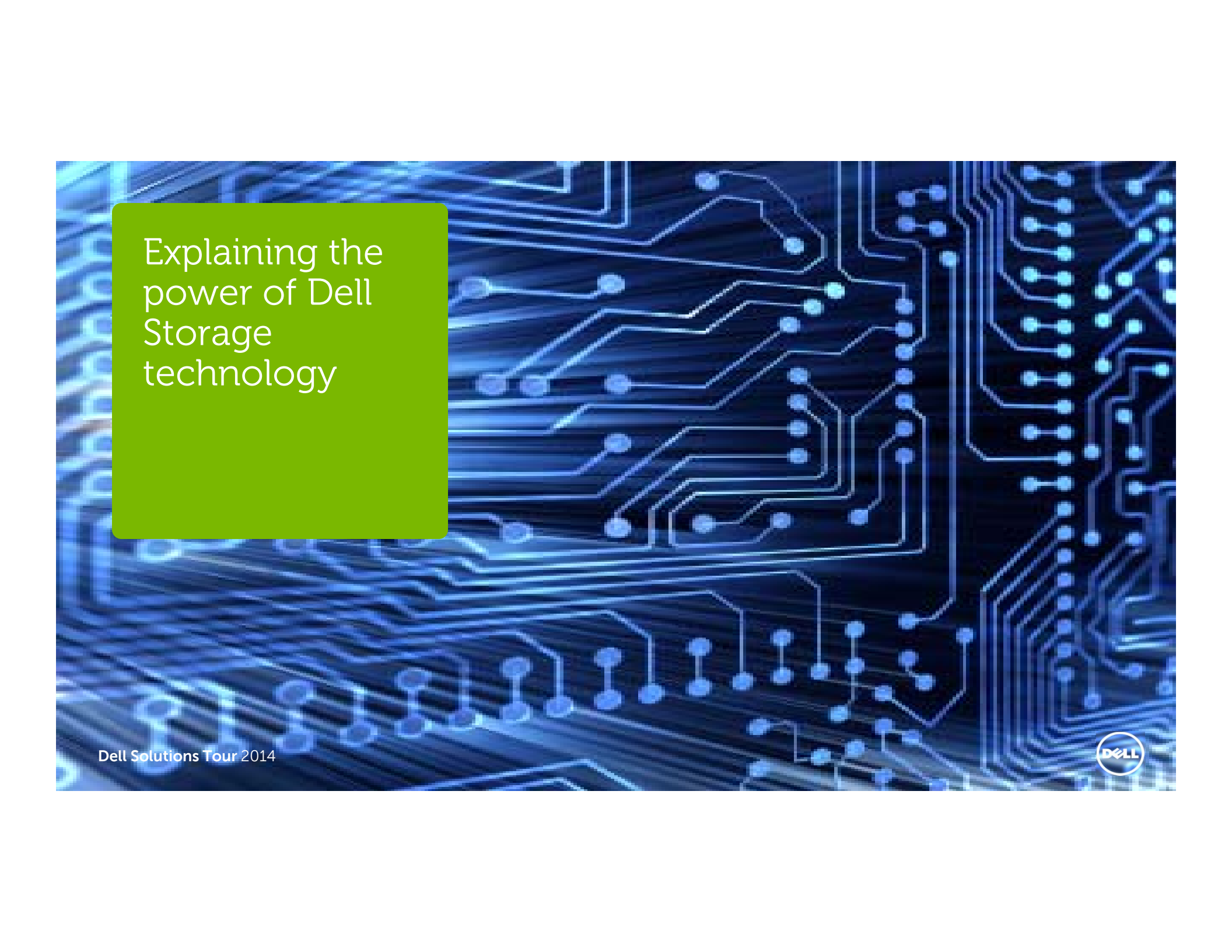
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No hidden cost on software licensing



All-inclusive & perpetual software licensing is eliminating hidden cost by making software all-inclusive lets your data grow without the need for extra software licensing





Explaining the
power of Dell
Storage
technology

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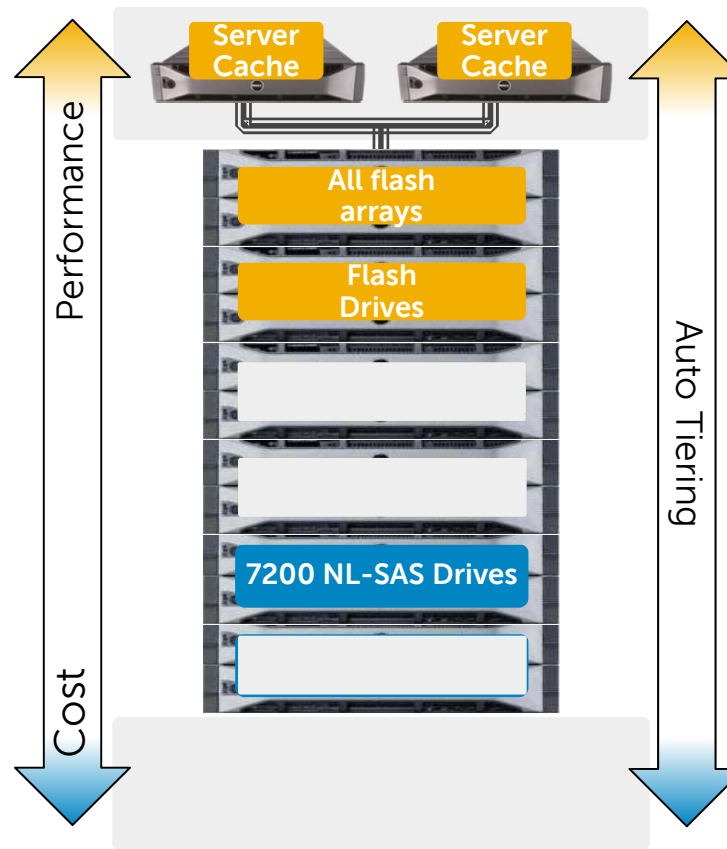




Performance optimized storage architectures

A single architecture serving customer who need high performance Storage solutions

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Dell Delivers:

- High performance through full Flash technology
- End-to-end Storage architecture that includes Server based cache (vSAN)
- Single, simple but powerful management framework

Storing the right data, at the right place, at the right time for the right cost

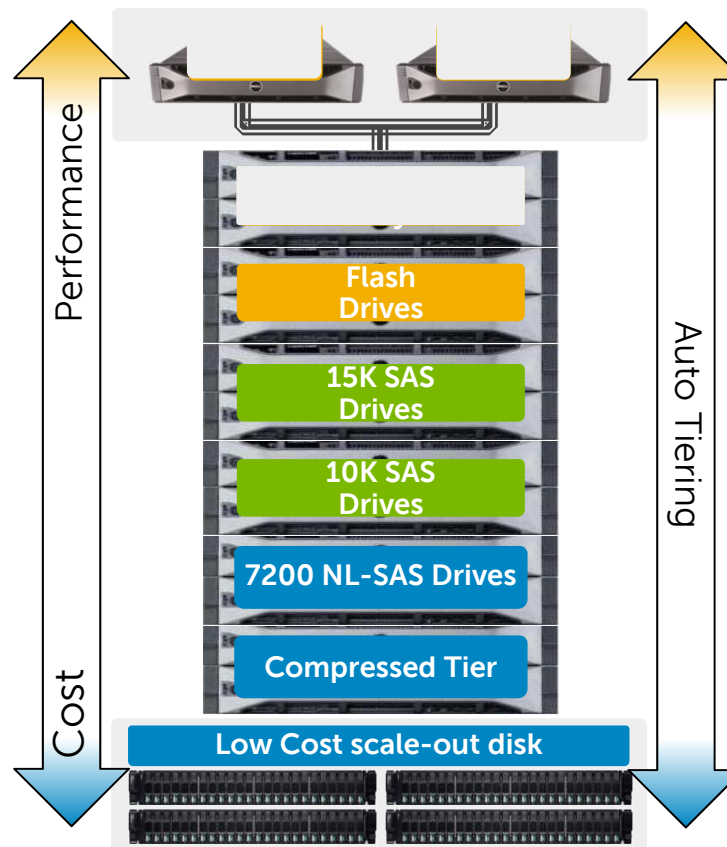




Price/Performance optimized storage architectures

A single architecture serving customer who want to balance performance and technology

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Dell Delivers:

- Best performing configurations for highly virtualized environments
- Fast deployments through automated setups
- Ready for full Unified Storage implementations

Storing the right data, at the right place, at the right time for the right cost

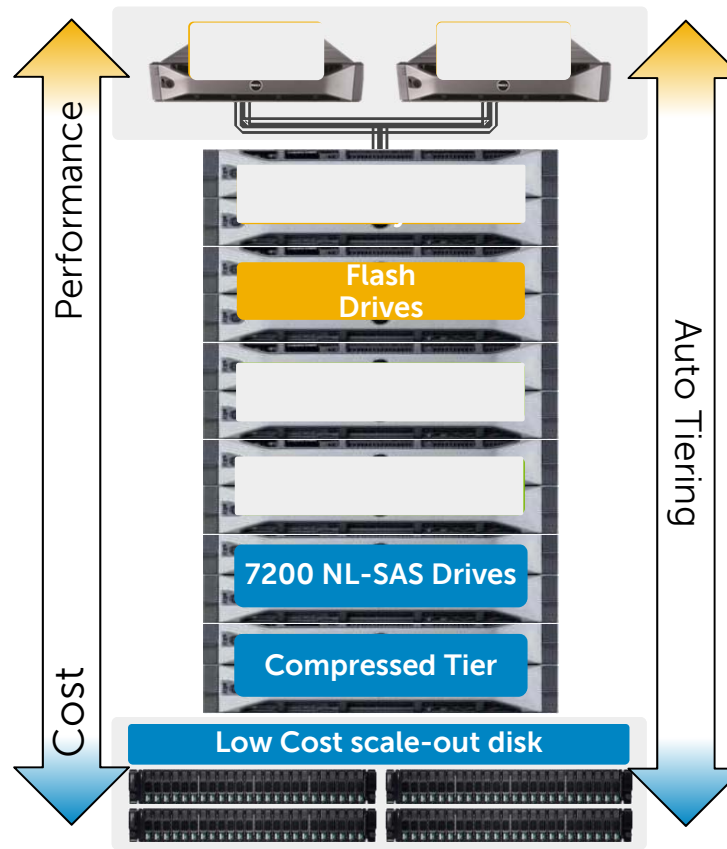




Cost optimized storage architectures

A single architecture serving customer who need the right balance between technology and performance

Dell Solutions Tour 2014



Dell Delivers:

- High performance through full Flash technology
- End-to-end Storage architecture that includes Server based cache (vSAN)
- Single, simple but powerful management framework

Storing the right data, at the right place, at the right time for the right cost



A photograph of a server room with several rows of Dell server racks. The racks are black with silver vertical accents. Each rack has a small circular Dell logo on its front panel. The floor is dark and reflective.

Explaining the Dell Storage Solution Portfolio



Storage offering that
accelerate your business

Dell portfolio
differentiation

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Big Data /
Data Insights



VDI



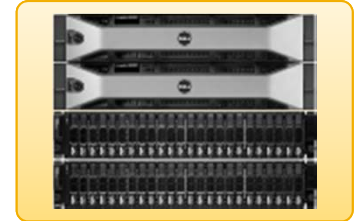
Traditional IT



Cloud

Flash at the Price of Disk

Flash: 56% lower cost with
90% latency reduction



Flexible Form-Factors

Double the useable capacity of
competitive solutions



Optimized for Virtualization

Industry leading VMware
vSphere & Hyper-V certified
server and storage solutions



Dense Enclosures

Highest capacity footprint in
the market through
ultra high dense enclosures

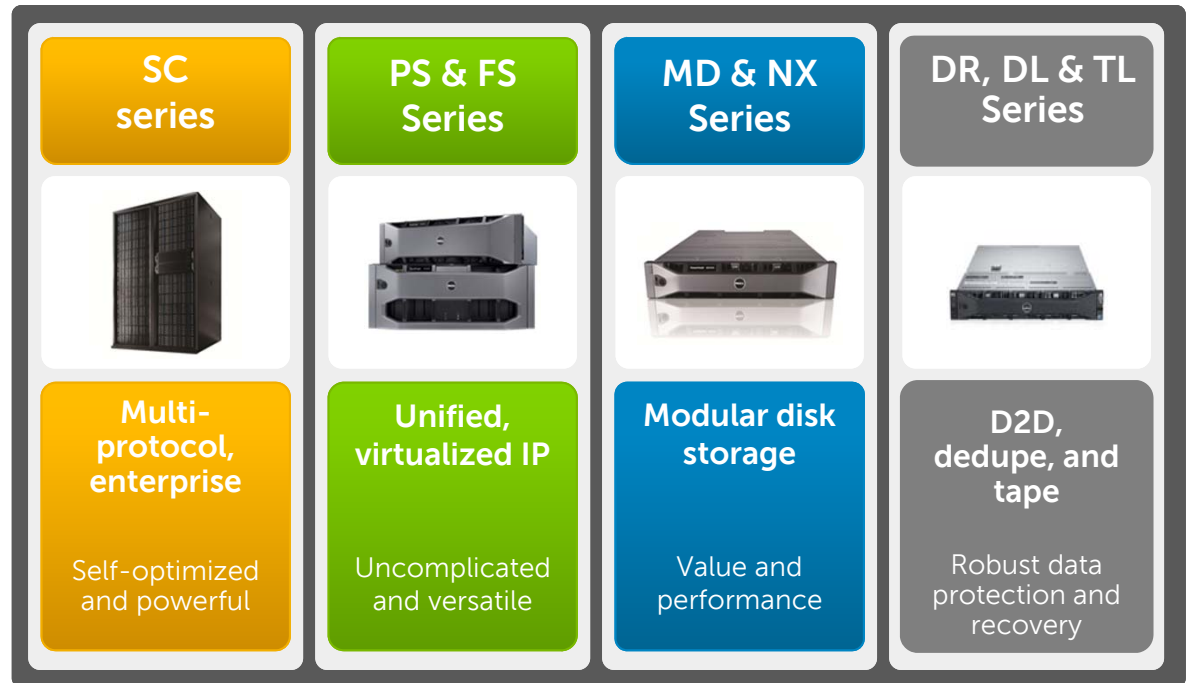




Workload-optimized
solutions for any size
enterprise

The Dell Storage Portfolio

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PowerEdge
Servers

Dell
Networking

Dell
Software

Dell
Services



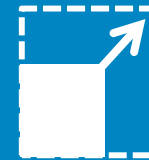
Dell is **your partner** on Storage as we serve your business best



World class Storage product quality and support



The IT Partner that ships more disk capacity in the world



Your partner to manage Storage technology transitions best

Dell is commitment is to let customers grow and thrive,
not to worry about storing data





Our strategy in action
-
Flash for the price of disk

Redefining the Economics of
Enterprise Storage

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- **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




Why Dell Storage?

Innovating technology like from a start-up

Provided by the largest Cloud builder in the world

Serviced by a Global leading IT company



A large container ship is sailing on the ocean at sunset. The sky is filled with warm, golden light and scattered clouds. The ship is viewed from a distance, showing its white hull and the stacks of colorful containers on its deck. A blue callout box is positioned on the left side of the image, containing white text.

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

Redefining the economics of Enterprise Storage

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The power to do more