



IBM Spectrum Storage

Renovating your storage infrastructure for Cloud era

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Software Defined Storage Country Sales Leader



Are you ready
for change?



Business SLAs Challenging Traditional Storage Approaches



Cost

Blindly adding capacity



Complexity

Data trapped in storage silos

Data duplication and more silos

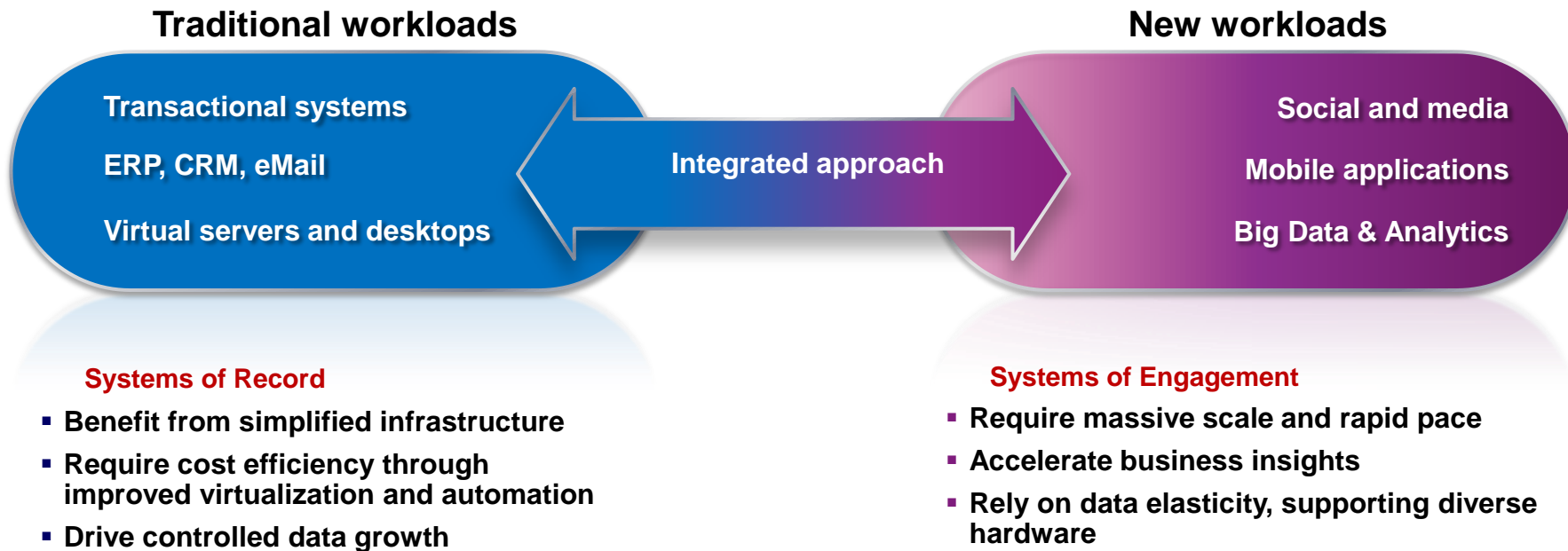
Extending refresh cycles



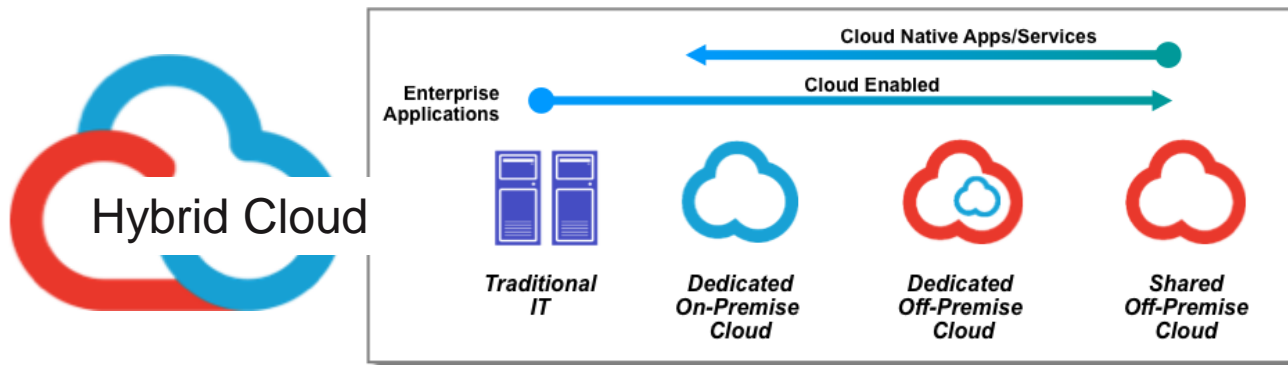
Inflexibility

Ad hoc cloud usage

Market shifts change data economics



The future of IT is hybrid

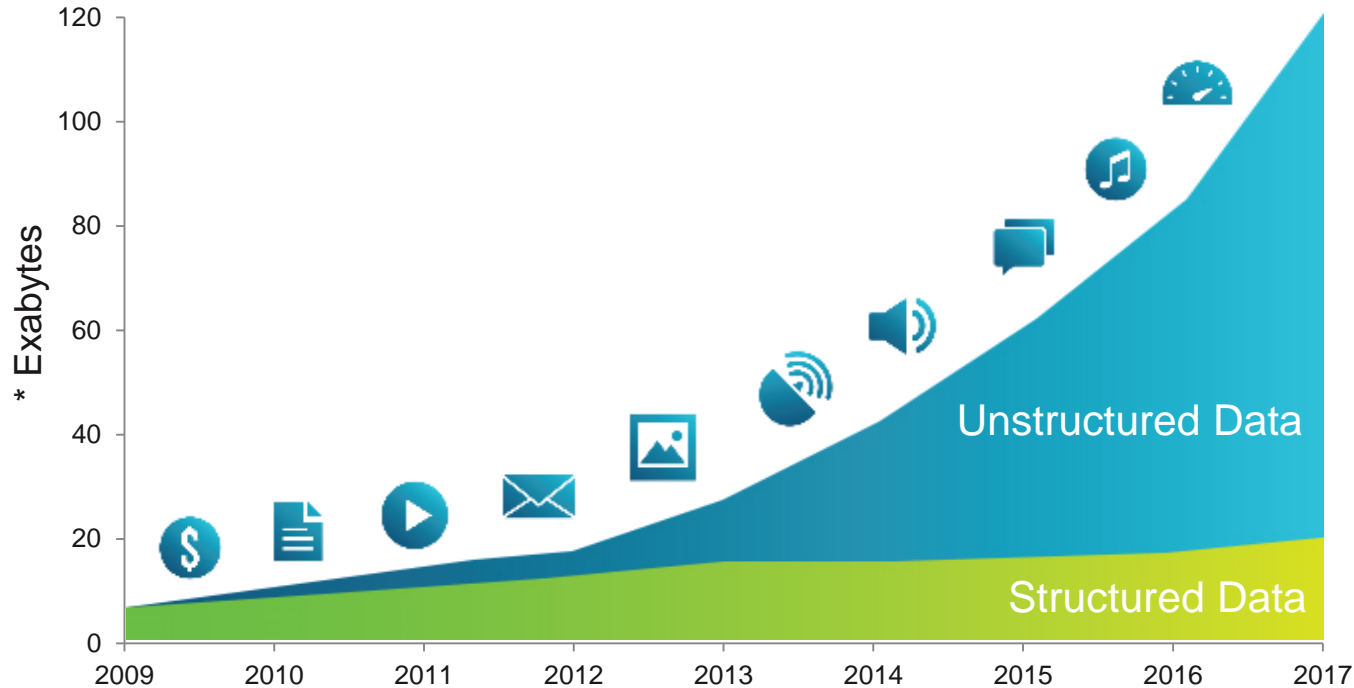


Hybrid Cloud: The secure consumption of services from two or more sources, including private cloud, public cloud, or traditional IT, to enable any or all of the following:

- Integration of applications, data, and/or services
- Composition, orchestration and management of workloads
- Portability of data and applications

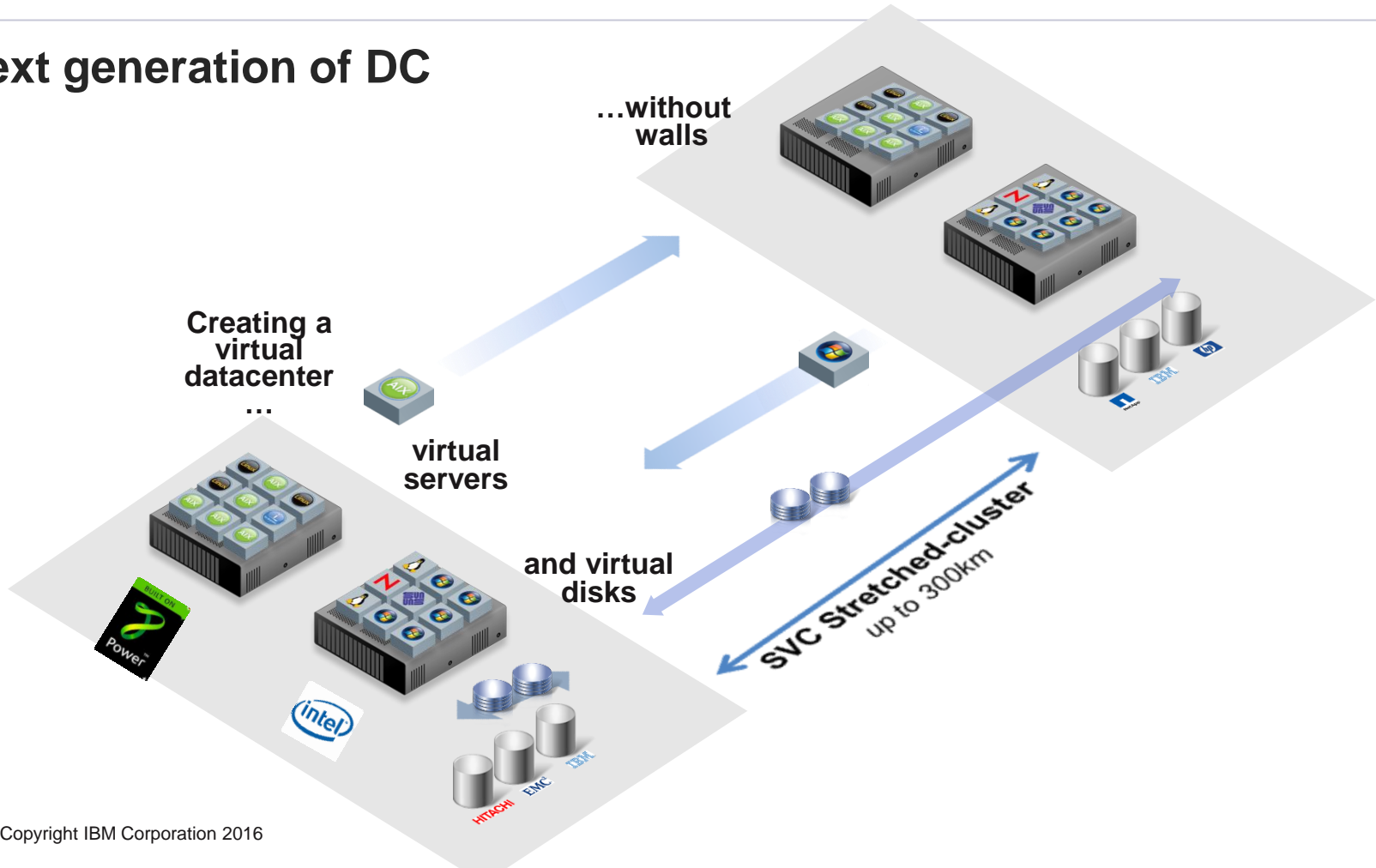
Clients are facing explosive growth in Unstructured Data,

Problem - Traditional and Legacy Storage Designed for Transactional, Not Unstructured Data



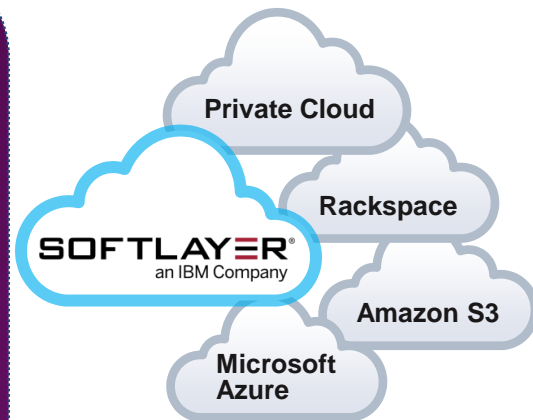
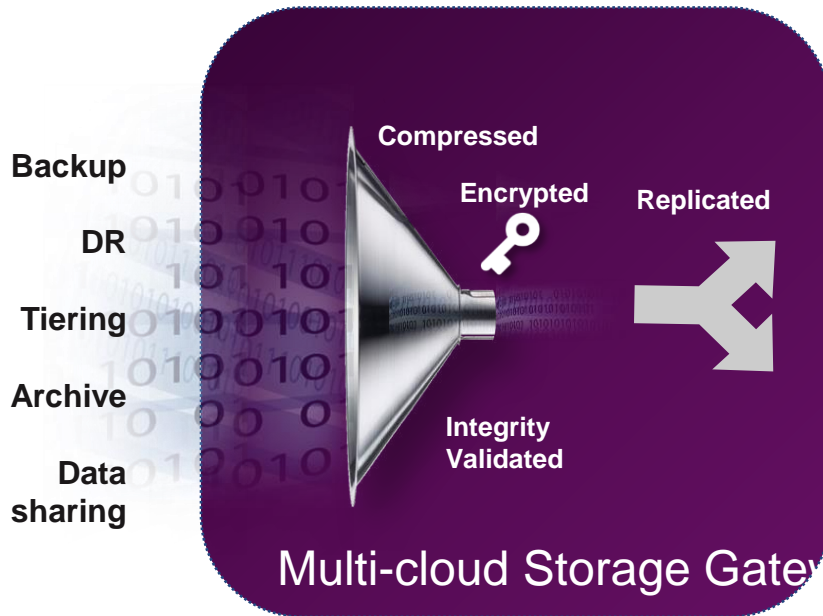
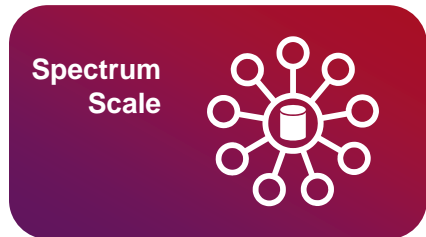
Unstructured data growth of **60–80%** per year creates Web-scale storage needs

Next generation of DC



Multi-Cloud Storage Gateway

Hybrid Use Cases: The Future of Storage Economics



Note: The Multi-cloud Storage Gateway is a planned future enhancement



Change the way to provisioning

System Administrator



Need Storage !

Storage Administrator



Which Storage System is used ?

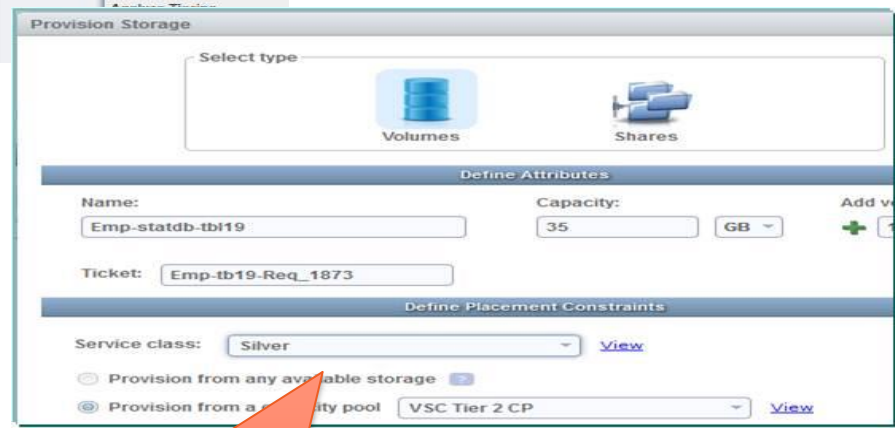
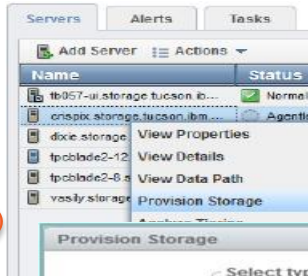
Enough Space there ?

Which Disk Type ?

Which RAID Type ?

Need to adjust Zoning ?

Need to adjust Multipathing ?



Easy Storage Provisioning by Service Classes and Capacity Pool



IDC Definition of Software Defined Storage

Software-defined storage is any storage software stack that can be installed on any commodity (x86 hardware, hypervisors, or cloud) and/or off-the-shelf computing hardware and used to offer a full suite of storage services and federation between the underlying persistent data placement resources to enable data mobility of its tenants between these resources

Key attributes of SDS

- **Runs on commodity hardware:** no special hardware or components needed
- **Full suite of storage services:** equivalent to traditional systems
- **Embraces multiple storage options:** traditional, virtualized, software defined, cloud



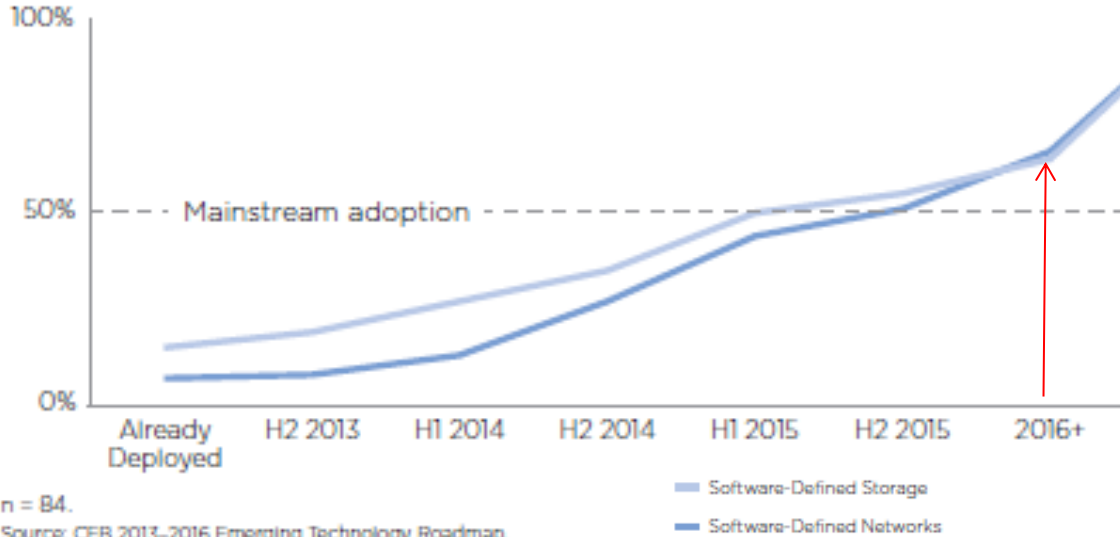
Storage Trends

- Continued dramatic growth in data driven by mobile, analytics, IoT, hybrid cloud, cognitive business and big data
- Transition of data types with new workloads, new applications
- **60%** of clients committed to Software Defined Storage; **another 23%** interested
- **70%** of clients deploying object storage or plan to within 24 months
- New storage deployment models powered by software
 - In 2014, enterprises for the first time purchased more TBs of storage-rich server capacity than of traditional array capacity
 - By 2018, storage-rich servers are expected to account for 50 percent of new capacity purchases
- **77%** of early SDI adopters indicate **a strong preference for single-vendor solutions**

Sources: ESG, IDC

Software Defined Infrastructure – *Now is the time*

Mainstream Adoption Timeline for Software-Defined Technologies
 Percentage of Infrastructure Organizations



“BofA aims to share in the innovation and lower cost of software-defined information technology”
 - *The Wall Street Journal, March 6th 2015*

“By 2020, between 70% and 80% of unstructured data will be held on lower-cost storage managed by SDS environments”
 - *Gartner Group, October 20th 2014*

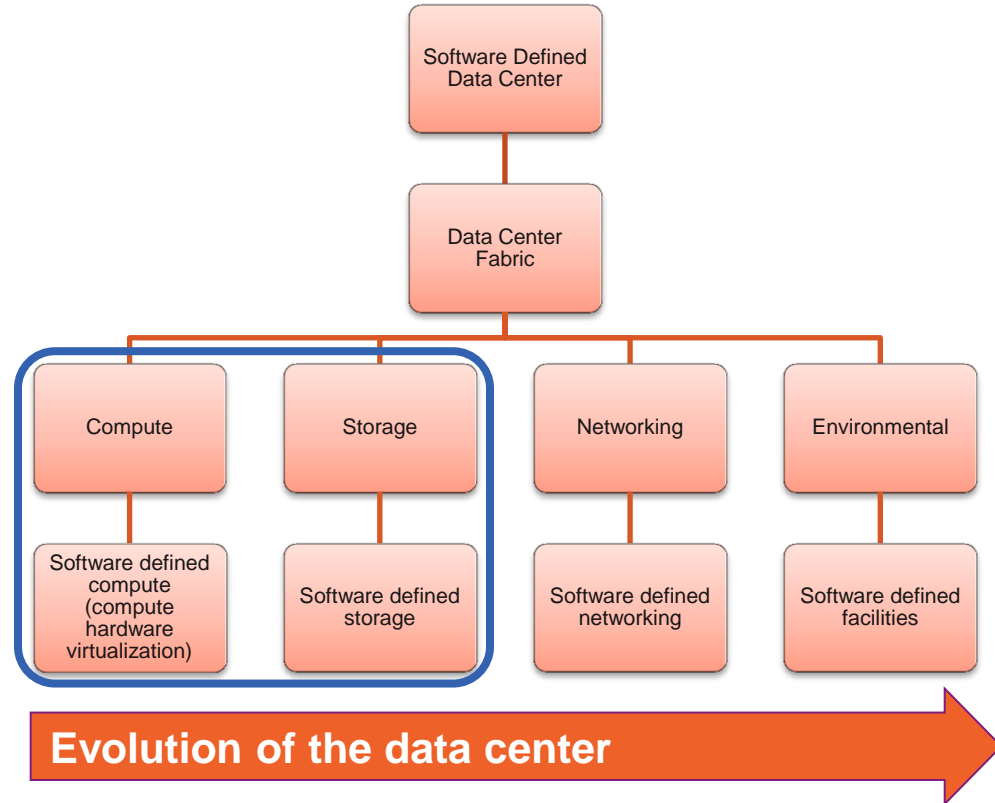
“SDS platforms will continue to grow faster than any other market segment in the file- and object-based storage market”
 - *IDC, 2014*

CEB is the world’s leading member-based advisory company.

Software Defined Data Center Market worth \$77.18 Billion by 2020



Software Defined Storage Within the Construct of a Software Defined DataCenter



Software Defined Environment

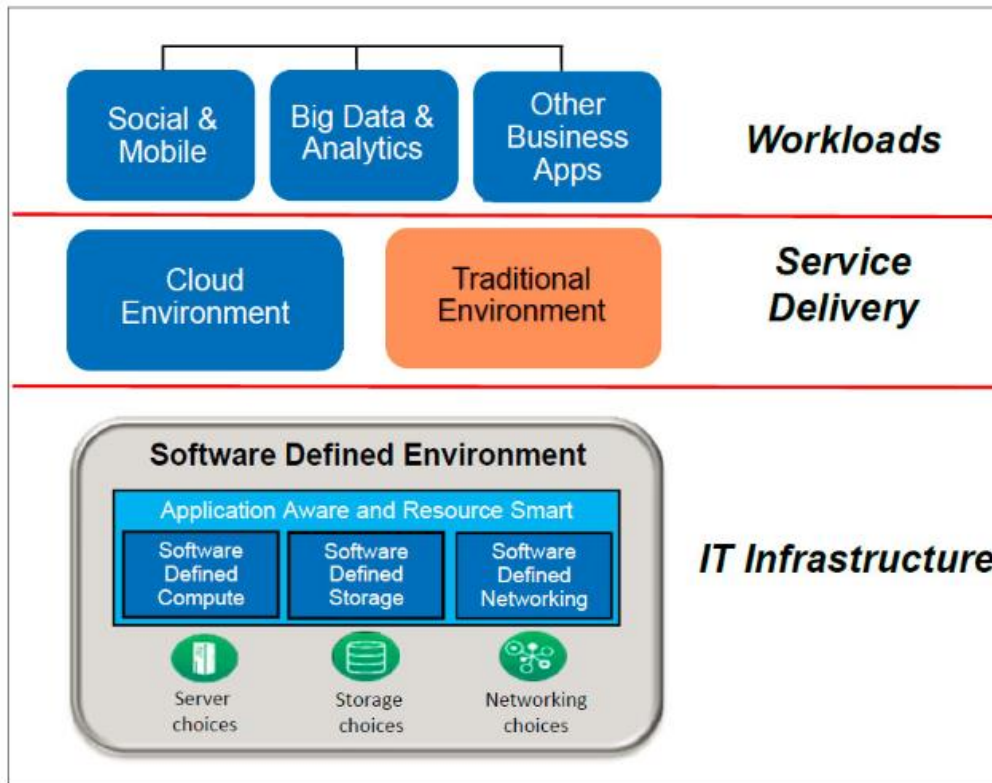
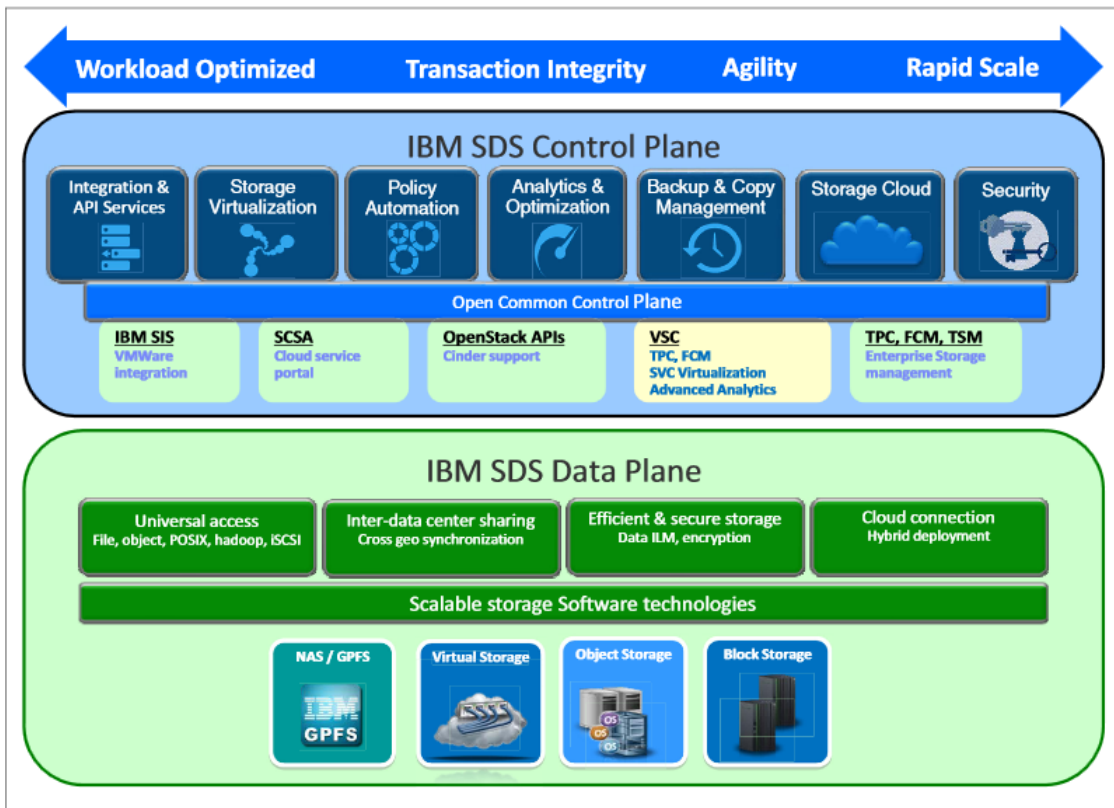


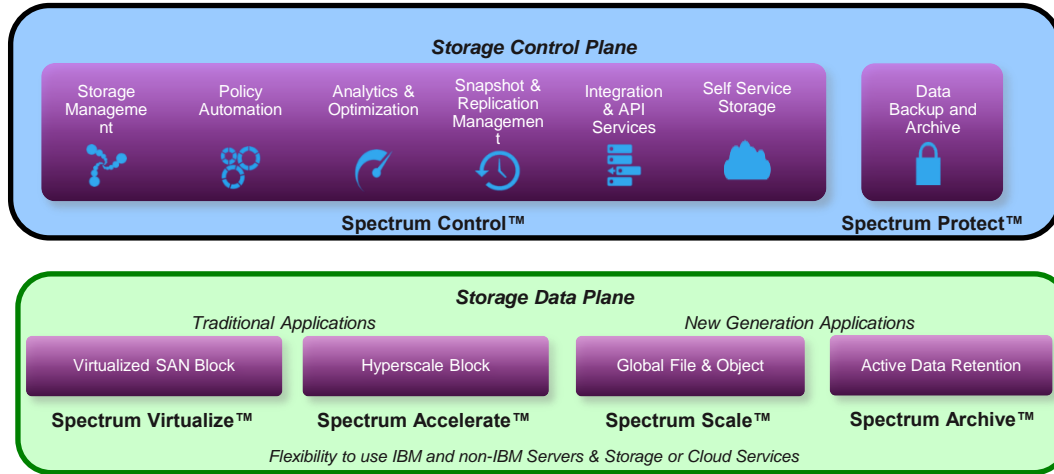
Figure 1-2 SDE reference architecture

Future of Storage Infrastructure



Exploring IBM Software Defined Storage Capabilities

IBM Spectrum Storage™ Family



IBM Storwize, XIV, DS8000, FlashSystem and Tape Systems

Non-IBM storage, including commodity servers and media



Evolving Use Case Scenario

IBM Spectrum Control
 IBM Spectrum Virtualize



SAN Storage

750TB

evolve →

IBM Spectrum Control
 IBM Spectrum Virtualize
 IBM Spectrum Accelerate



SAN Storage

650TB

Storage Rich Servers
200TB

850TB

evolve →

IBM Spectrum Control
 IBM Spectrum Virtualize
 IBM Spectrum Scale
 IBM Spectrum Protect



SAN Storage

600TB

Storage Rich Servers
250TB

Storage Rich Servers
100TB

950TB

Use case

- Block SAN; traditional workloads

Use case

- Block SAN; traditional
- Block servers; VMware

Use case

- Block SAN; traditional
- File/object; Big Data & analytics
- Next-gen deduplicated recovery

- Most IT managers are starting with a good deal of SAN storage.
- Over time, SAN storage may decline while commodity hardware and storage-rich servers increase. New software-defined storage packages can be added depending on what use case you want to 'software-define' that storage for.

Evolving Use Case Scenario

IBM Spectrum Control
IBM Spectrum Virtualize



SAN Storage
750TB

evolve →

IBM Spectrum Control
IBM Spectrum Virtualize
IBM Spectrum Control
IBM Spectrum Accelerate



SAN Storage 650TB
Storage Rich Servers 200TB
850TB

evolve →

IBM Spectrum Control
IBM Spectrum Virtualize
IBM Spectrum Control
IBM Spectrum Scale
IBM Spectrum Protect
IBM Spectrum Control
IBM Spectrum Scale



SAN Storage 600TB
Storage Rich Servers 250TB
Storage Rich Servers 100TB
950TB

A' la carte Non-IBM

Storage Resource Management software
2 Systems
Virtualization software
2 Frames + 750TB

Storage Resource Management software
5 Systems
Virtualization software
2 Frames + 650TB
Datastore for Virtual Machines
3 Servers or # of VMs

Storage Resource4 Management software
8 Systems
Virtualization software
2 Frames + 600TB
File/object software
24 Sockets or 350TB
Backup software
100TB

Simple IBM Spectrum Storage Suite

IBM Spectrum Storage Suite
750TB

+100TB=850TB

+100TB=950TB

