High Availability Datacenter Using SolidFire

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SOLIDFIRE

All-Flash Storage for the Next Generation Data Center

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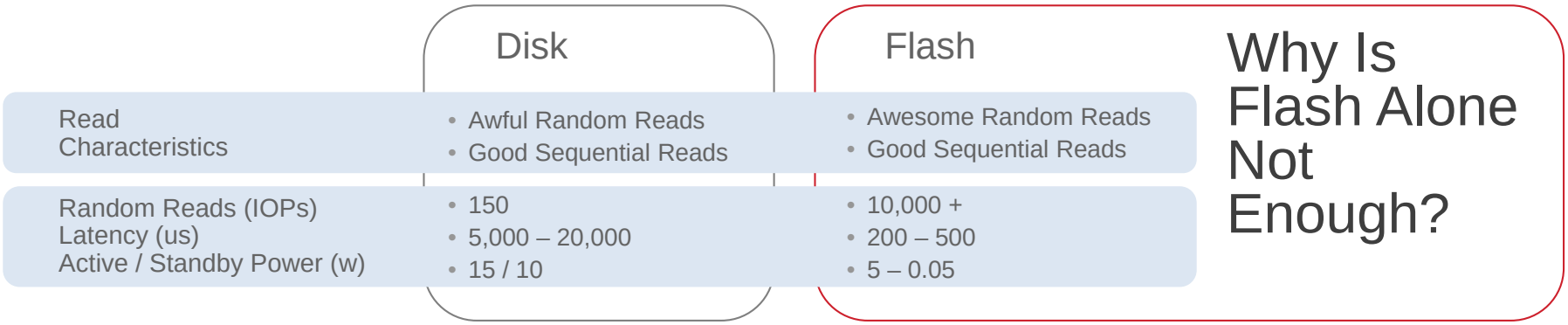
Bringing Flash to the Data Center



Struggled with: Cost – Reliability – Density

Raw Flash Performance

Scarce resource only for select workloads

→

Flash Performance + Guaranteed (QoS) Control

Enabling technology of the Next Generation Data Center

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A Massive Transformation in IT Delivery
(from a Siloed to Shared Infrastructure)

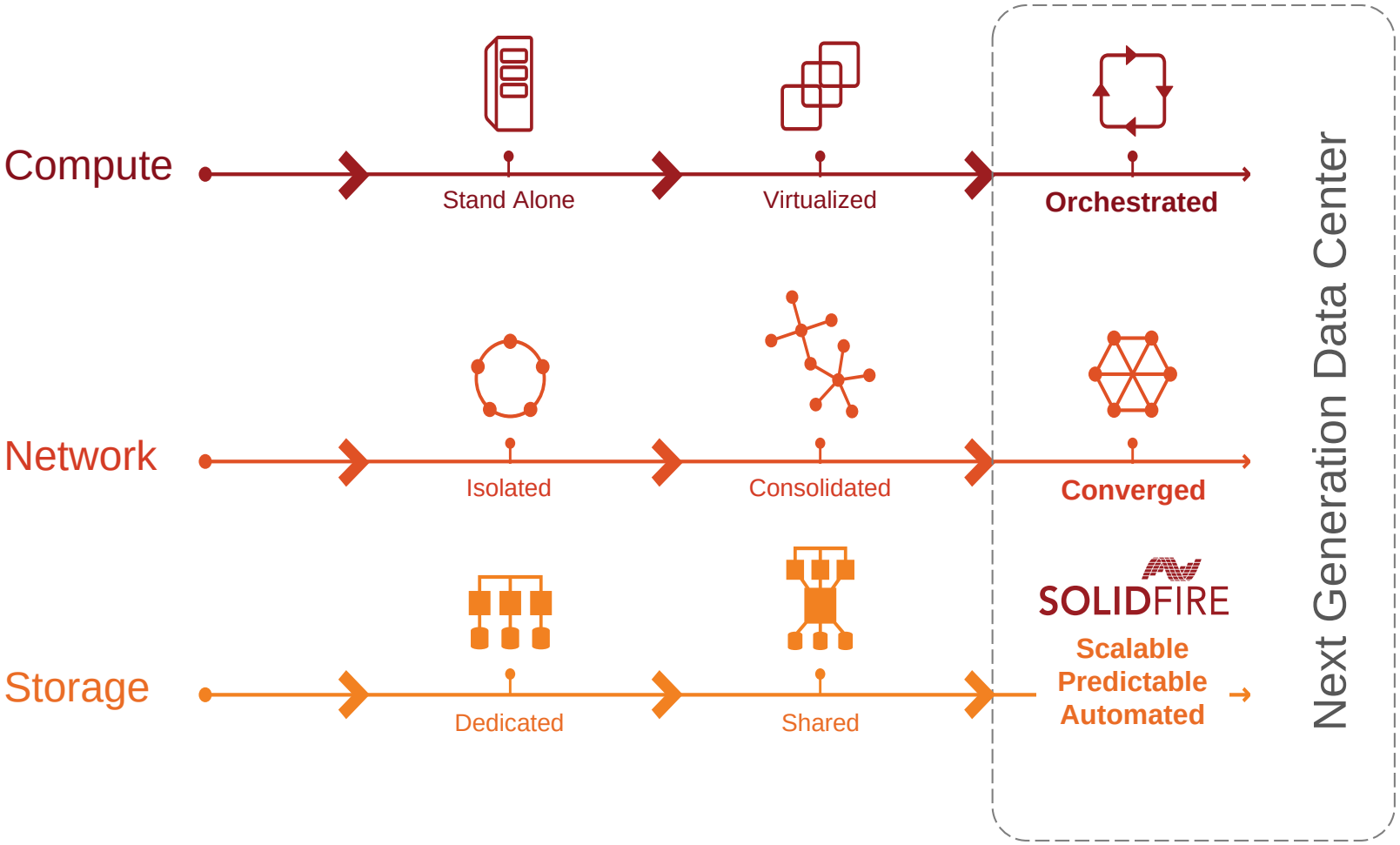
Isolated Workloads ➔ Mixed Workloads

Manual Provisioning ➔ Automated

Project Based ➔ Self Service

Rigid Infrastructure ➔ Agile Resources

Evolution of the Data Center



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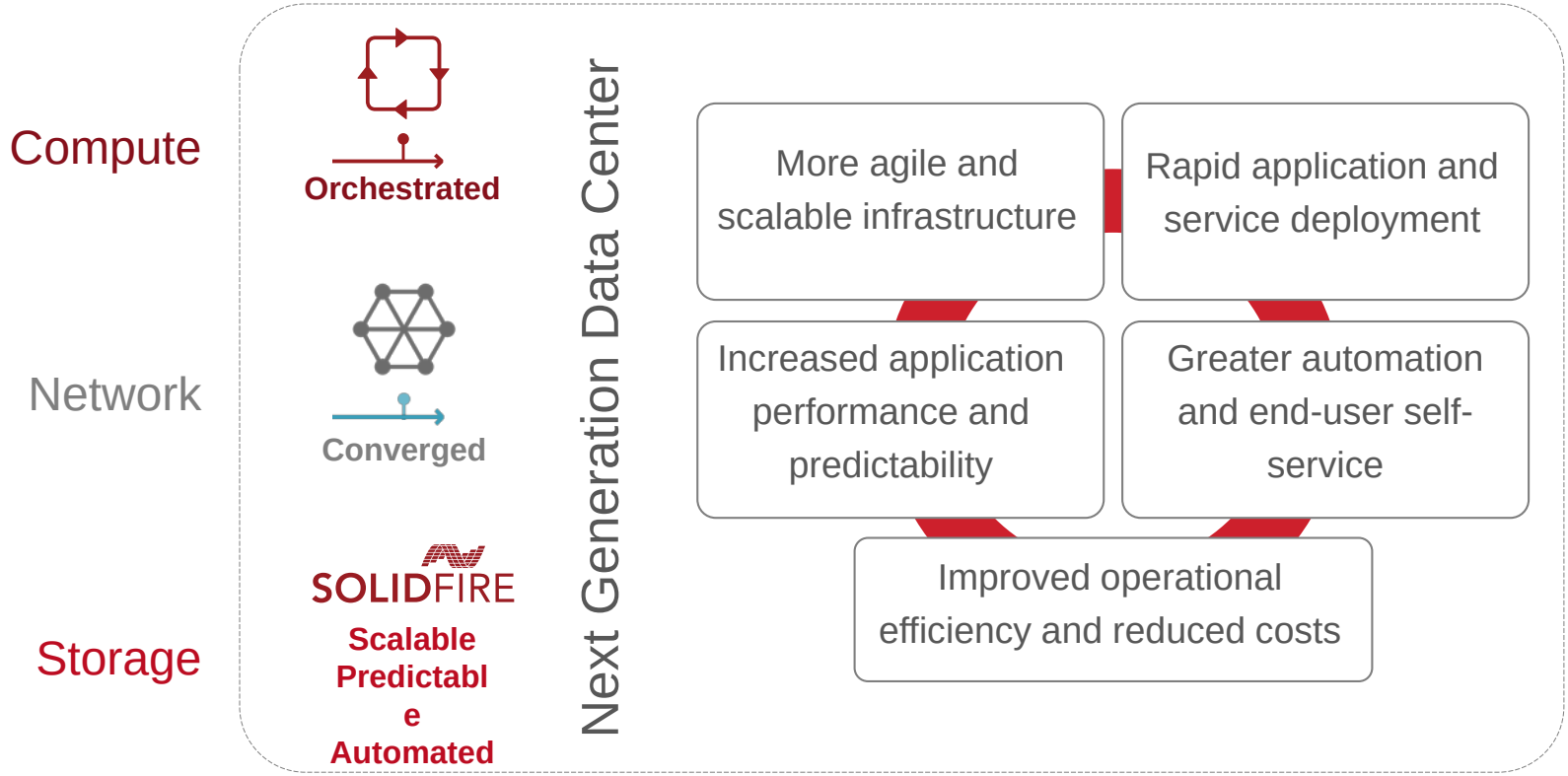
The Next Generation Data Center



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SolidFire: Purpose built for the Next Generation Data Center

>Consolidate Tier 1 and Tier 2 Applications

Manage Capacity and Performance Independently

>Enable Complete Storage Automation

Native REST-based API, deep OpenStack integration

>Scale-Out Investment Protection

100% Compatibility Guarantee, mix / match any nodes

Guaranteed Storage Performance

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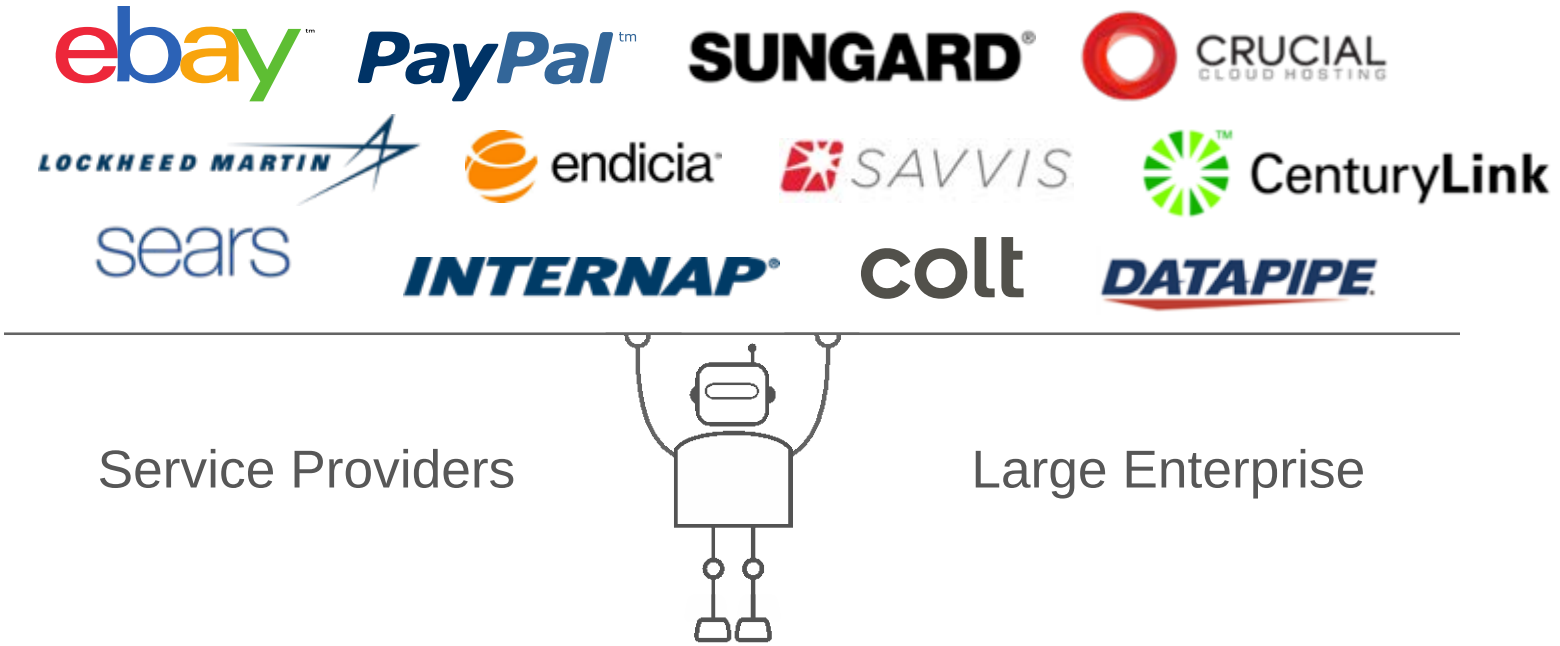
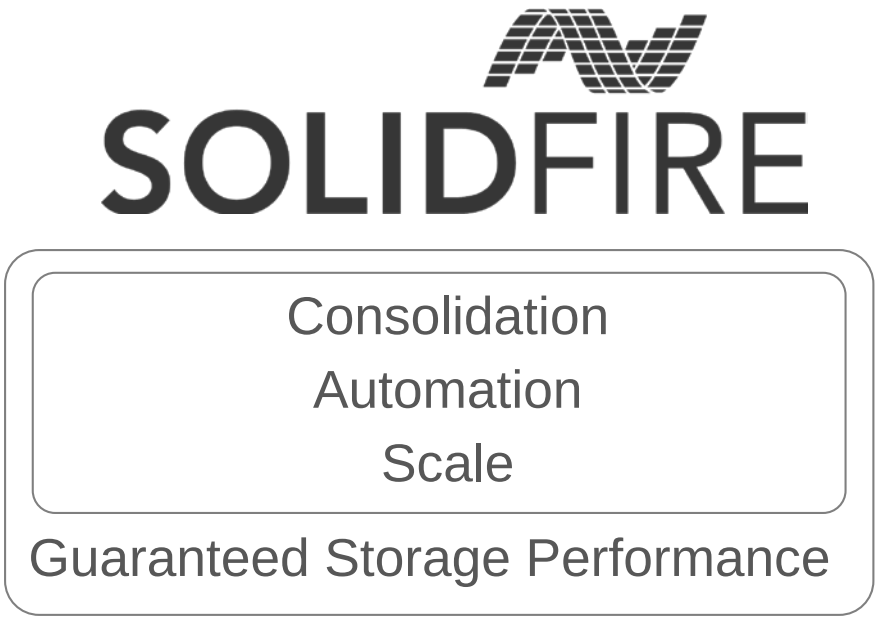
Powering the most demanding data centers in the world



Enterprise Outcomes



- Rapidly respond to business and application demands
- Improve Productivity
- Reduce Complexity and Cost

Endicia Case Study

Mitul Patel

IT Manager and Chief
Infrastructure Architect

Our Mission

To deliver value by creating breakthrough shipping technologies and services that help global businesses, small and big, reach their customers, and thrive.

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Innovation-Driven Market Leader

The Back Story

- Technology firm **founded in 1987** by Stanford engineers
- **Strategic** technology investment for Newell Rubbermaid in 2007
- Over **200 partners**, 200 employees
- **14 years** as USPS®-approved PC postage software partner
- Customers have printed >$12B in cumulative postage

The First Company to…

- Prototype PC Postage for the USPS (1991)
- Integrate parcel insurance, international customs forms, APO/FPO forms
- Offer electronic refunds
- Provide electronic delivery & signature confirmation
- Support USPS regional rate & critical mail solutions

Sources: US Postal Service™ data, 2005-2014; Endicia financial data, 2005-2014.

Key Endicia Shipping Markets

Like Our Customers, Our Software is Not "One Size Fits All"

	Passion Purveyor	**Online Professional Seller**	**Professional Warehouse Shipper**
Profile	• 1-20 packages/day • SOHO, SMB	• 20-250+ packages/day • ~2-20 employees • USPS shippers	• 250-500+ packages/day • Use free private carrier software
Shipping Needs	• Basic USPS shipping • Simplification of shipping complexities	• Pick & pack • Batch print	• Multi-feature • Rate comparisons
Service Needs	• Quick to get started • Access to best USPS rates	• Easy file & database access • Ecommerce platform integration	• Coexist with UPS, FedEx • WMS integration
Benefits Sought	• Ease of use • Time savings • Cost reduction	• Systems integration • Cost reduction • Efficiency	• High speed, high volume • Cost reduction • Choice

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At the Core:

Software for All-in-one Shipping Labels

Prepaid labels
Hidden postage amounts

All USPS mail classes

Customizable labels

Verified addresses

Electronic delivery &
signature confirmation

Supporting All USPS Products

Endicia only!

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Marketplace Integrations

Introducing seamless and direct integrations with the Amazon Marketplace and eBay store

Customers can:

- Connect Amazon and/or eBay stores to their Endicia client
- Import and view order information
- Print shipping labels, including eBay GSP labels
- Automatically post-back tracking information to Amazon and/or eBay
- Combine up to three orders into one shipment
- Manually mark orders as shipped with no label print

Endicia's Business Needs

A solution that:

- Did not require shutting down the real-time environment when changes needed to be made.
- Scaled seamlessly without downtime.
- Had a high level of performance in regards to response time.
- Did not require a large amount of resources.
- Was extremely secure and provided monitoring.

Approach & Strategy

- Leverage existing vendor relationships for recommendations.
- Evaluate options:
  - Traditional Storage – spinning disk and hybrid storage.
  - Other key Flash vendors in the market.
- Leverage current technologies:
  - Virtualized Hyper-Visor, High Performance Database, cutting edge network setup.
- Deploy in corporate IT first, then integrate into the production environments.

Storage Requirement Evaluation

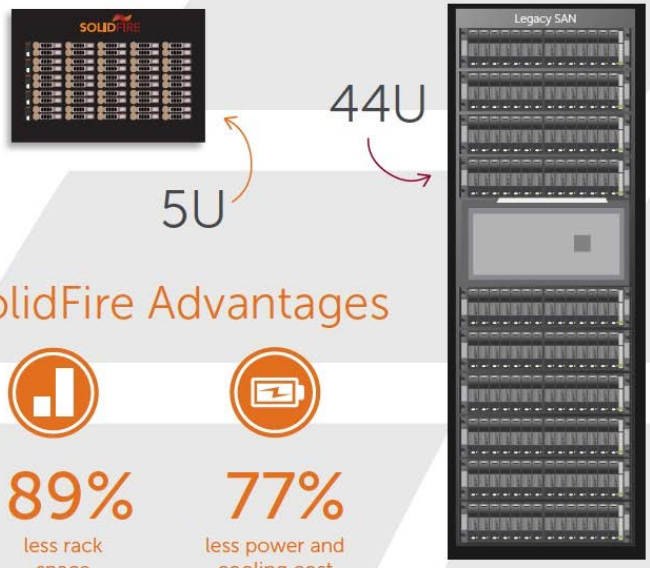
Endicia Requirements	Solidfire Features
Scale without customer impact and downtime related to SAN. High capacity/density to save on rack space and cost.	Scale Out capability without downtime. Adding or removing a node can be done live. Inline Deduplication and compression gives us more storage capacity per 1U node. Not dependent on controller resources
Guaranteed performance for customer transactions.	Guaranteed QOS capability on the SolidFire allowed us to feel secure in delivery performance even with noisy applications on the same SAN
Multiple layers of security for customer data with no loss in performance.	Encryption feature on the SAN allows us to add one more layer of security to our setup without losing performance
Hypervisor Integration.	Good Hypervisor Integration which allows daily tasks to be completed with ease
Reliability of the setup.	Helix Data Redundancy and Self Healing Capability
Monitoring and support	Solidfire has a separate VM for monitoring the SAN which works well. Good Rest API to integrate with other monitoring tools
Initial capital cost and cost of ownership for the long run.	Liked the all inclusive pricing. By using standard flash disks, Solidfire has been able to keep costs down and keep it affordable

SolidFire's Solution

SF9010

- 1U form factor – scale unit for Endicia.
- Large scale SaaS platforms
- Highest density platform
- 35 TB effective capacity
- 75,000 IOPS
- Mix and Match with other node capacity

How Does This Compare?



SolidFire Advantages

89% less rack space

77% less power and cooling cost

SF9010 173TB	VS	Legacy SAN 173TB
375,000	IOPS	52,000
1	Storage Arrays/Clusters	1
48	Total Raw (TB)	346
1.2	Operating Power (KW)	5.5
$7,938	Power & Cooling Cost/3Yr.	$34,965
7.23	Watts/TB	31.46
300	IOPS/Watt	9.44

Lessons Learned

- Understand current and future business needs
- Size more capacity up-front.
- Identify where guaranteed performance will allow you to consolidate and maximize ROI.
- Standardize your environment. Less Management overhead and reduces cost

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questions?