The Real-World Value of Hyperconverged Infrastructure

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Digital Economy Drives Data Center Changes

Changing Business Environment

Digital economy drives changes to:
• Business models & sources of revenue
• Products/services brought to market
• Partner & customer ecosystems
• Level of customer relationships
• Competitive landscape

Changing Data Center Needs

Data center infrastructure must:
• Scale on-demand with results
• Drive increased operational efficiencies
• Increase staff agility & credibility
• Reduce risks to the business
• Incorporate public clouds

New Digital World

The booming digital economy fundamentally impacts all aspects of business and has become the source of innovation and creativity for new business models, enhanced customer experiences, and improved financial performance.

New data center infrastructure solutions are helping data center teams adjust to changing demands & priorities within this new digital world.
Critical Factors Are Changing Infrastructure Needs in the Data Center

Organizations around the world are digitally transforming to create new value and competitive advantages through new offerings, business models, and customer relationships.

Infrastructure investments are increasingly...

1. Strategic in Nature

- Investing in IT to support digital transformation & growth: 72%
- Contain/minimize IT operating costs as much as possible: 65%
- Use third party/outsourcing/cloud firms to supplement in-house resources whenever possible: 63%
- Proactive, broadly implemented private or public cloud-first approach to new app deployments: 60%
- Take ad-hoc approach in which projects & activities are driven by the needs of individual teams: 45%


2. Aligning with Top Business Priorities To:

1. Increase Productivity
2. Improve the Customer Experience
3. Improve Operational Efficiency
4. Drive Innovation
5. Create a More Effective Business
6. Adapt to Change/Become More ‘Agile’
7. Reduce Costs
8. Develop ‘digital’ products & services

IT Departments Are Changing to Better Align with Shifting Business Needs

Investing in new types of infrastructure that drive down cost and time of managing infrastructure

Two Critical Needs: Operational Simplicity & Agility

Steady Increase to the Cost of Managing Infrastructure

Every $1 CAPEX for Physical Server Drives $4 on OPEX

WW Server, P&C and Administration Spending

1995: $0.50
1995: $1.50
1995: $2.80
1995: $4.00

OPEX per Dollar of CAPEX

- Power & Cooling
- Mgmt & Administration
- New Server Spending

Data Center Teams Spend Little Time on Innovation

Only 20% of IT Staff Time Spent on Innovation

- New service request & approval: 18.1%
- Vendor & internalk meetings: 17.2%
- Monitoring & troubleshooting: 21.5%
- Provisioning, patching, config. mgt.: 23.4%
- Innovation & new projects: 19.8%
New Investments Targeting Operational Efficiency

2015-2017 Compounded Annual Spending Growth

- Hyperconverged Infrastructure: 77%
- All Flash Storage Systems: 45%
- Public Cloud IaaS (Compute & Storage): 33%
- Software Defined Storage (HW & SW): 28%
- Enterprise Servers: 5%
- Enterprise Storage: 1%
HCI Represents a Natural Evolution of Convergence

1st Generation of Converged Systems
- Converging Discrete Systems Together
- Centralized Management & Support
- Improved Efficiency

Hyperconverged Infrastructure
Providing Similar Benefits as 1st gen.
Convergence More Efficiently
- Storage systems & SAN replaced with SDS
- X86-based scale-out/clustered architecture
- All CPU, RAM & capacity pooled together
- Compute & data services run on common pool
- Improved Efficiency

Benefits: Better CapEx & OpEx Balance
- x86-base shared nothing architecture
- CapEx: No SAN, granular scale, COTS
- OpEx: Deploy, scale, provision, refresh
- Performance: SSDs, data/compute proximity
Historical Converged Systems Spending & Top Challenges Driving Adoption

- Virtual Machine Sprawl
- DC Resource Utilization
- Simplify Purchase & Support
- Reduced Downtime
- Productivity & Agility
- Productivity & Agility
- IT Credibility/Biz Alignment
- Lower Cost DP & DR
- Productivity & Agility
- Standardization/SDI
- Automated Mgmt.

Annualized Quarterly Spending on Converged Systems

- $15B
- $10B
- $5B
- $0B

2012 | 2013 | 2014 | 2015 | 2016 | 2017

HCI

Traditional CI
### Top Drivers of Hyperconvergence

| **Efficiency** | • VM-level management  
• Reduced complexity  
• Dedupe/compression |
| **Agility** | • Alignment of skill-set to business needs  
• Reduced data center silos  
• Faster time to revenue |
| **Reduced Risk** | • Improved lifecycle management  
• No forklift upgrades/refresh  
• Improved DR/HA |
| **Lower Costs** | • Standardized x86 building blocks  
• Reduced over provisioning  
• Reduced facility costs |
Operational Benefits of Hyperconverged

**Improved utilization of systems resources lowers data center costs**
- Elimination of shared storage & SAN switches
- Reduced spending on power, cooling, & data center floor space

**Highly virtualized, clustered architecture**
- Jump off of the system refresh “hamster wheel”
- Reduce human error associated with lifecycle management
- Rapid application deployment & continuous availability drives BU productivity

**Convergence, virtualization & automation increases IT staff productivity**
- Address the 80/20 rule of IT staff
- Simplifies management and deployment of IT infrastructure
## Real-World Benefits of Hyperconverged

### Most Common Responses

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<th>Benefit</th>
<th>% Improvement Due to HCI</th>
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<tr>
<td>Improve IT staff productivity</td>
<td>44%</td>
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<tr>
<td>Improved utilization of storage resources</td>
<td>37%</td>
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<td>Reduced cost of data center facilities, power and cooling</td>
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<td>Reduced downtime and improved application availability</td>
<td>34%</td>
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<td>Faster time to market</td>
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**Q1.** Which of the following best describes how your organization has benefited (or expects to benefit) from the use of hyperconverged systems?  
**Q2.** Please provide an approximate percent improvement over the previous environment, for each description chosen.
Real-World Benefits of VMware vSAN-Based HCI

Percent of TCO Reduction by Number of Clusters Deployed

Mean TCO Reduction: 40%

Q. By what percentage has your TCO been reduced as a result of vSAN?

- ≤50% TCO Reduction
- >50% TCO Reduction

vSAN Source: IDC’s VMware vSAN Survey, 2H 2017 (N: 101)
HCI as a Hybrid Cloud Platform

Those looking to better leverage hybrid clouds will find the fluid nature of HCI a good platform for the on-premises portion of their hybrid cloud designs.

|
| 28% Off-Prem. Cloud |
| 53% On-Prem. Traditional |
| 42% Off-Prem. Cloud |
| 37% Off-Prem. Cloud |

2016: $102.2B

2021: $122.6B
Optimize Hyperconverged Infrastructure in 4 Steps

Focus on aligning HCI with strategic business imperatives
- Define standard tiers of services
- Establish a consistent chargeback system for provided services

Realign IT responsibilities to create dedicated teams for implanting and administering infrastructure
- Reorganize teams to focus on overarching (non-siloed) activities

Leverage suppliers’ experience to effectively implement and manage
- Ensure they have a holistic view of business objectives and the specific requirements of the many stakeholders impacted by HCI deployments

Use HCI as a platform & architecture for your hybrid cloud deployments
- The software-defined, server architecture brings benefits of public cloud to your data center
- Look for solutions that tie to public cloud to create a seamless hybrid cloud environment