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Competitive Landscape: Hyperconverged Integrated Systems

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Summary

The HCIS market has seen recent acquisitions, provider exits and evolutionary disruption. Technology business unit leaders must implement appropriate partnering approaches in the face of these changes as they seek to achieve optimal growth.

Overview

Key Findings

As the hyperconverged integrated system (HCIS) market has matured in the past two years, some smaller providers without sufficient installed bases, technical resources and cash to survive on their own have exited the market.

HCIS-only providers that have a sustainable sales advantage based on effective communication of technical strengths that can deliver superior cost savings or performance advantages are most likely to remain viable as the market continues to grow.

HCIS providers without compelling value propositions to differentiate their offerings against other HCIS solutions are unlikely to survive the increasing competitive pressure that is appearing in the market.

Recommendations

Technology business unit leaders who seek to identify and exploit new infrastructure opportunities, and outpace the competition must:

Develop partnering plans for Evolutionary Disruptors in the HCIS space when the installed base, cash and technical resources of those disruptors can drive sales growth and offer complementary business opportunities.

Implement partnering approaches with HCIS-only providers when those providers' combined technical and marketing approaches can offer sustainable sales advantages compared with competitors as the market continues to grow and mature.

Deprioritize partnering investment with HCIS providers that cannot articulate compelling value propositions for end users that differentiate their offerings in the face of increasing competition.

Strategic Planning Assumption

By the end of 2018, 65% of HCIS revenue will be attributed to Evolutionary Disruptors.

Analysis

Hyperconverged integrated systems utilize a modular compute/network/storage building block node, with direct-attached storage and a management layer on commodity hardware that can be combined into scale-out clusters. The HCIS competitive landscape has changed with the exit of some players and stronger forays into the space by others. As the fastest-growing category of data center infrastructure during the next five years, an ongoing understanding of HCIS competitive dynamics is a must for technology business unit leaders who hope to benefit from its revenue increases.

Competitive Situation and Trends

HCIS represents a type of integrated system (see "Market Definitions and Methodology: Integrated Systems" and the Definitions section below). By the end of 2016, the HCIS market had grown to more than $1.5 billion in revenue, to represent 16% of overall worldwide integrated system revenue (see Figure 1).

Figure 1. 2016 Worldwide Integrated System Revenue Share by Type
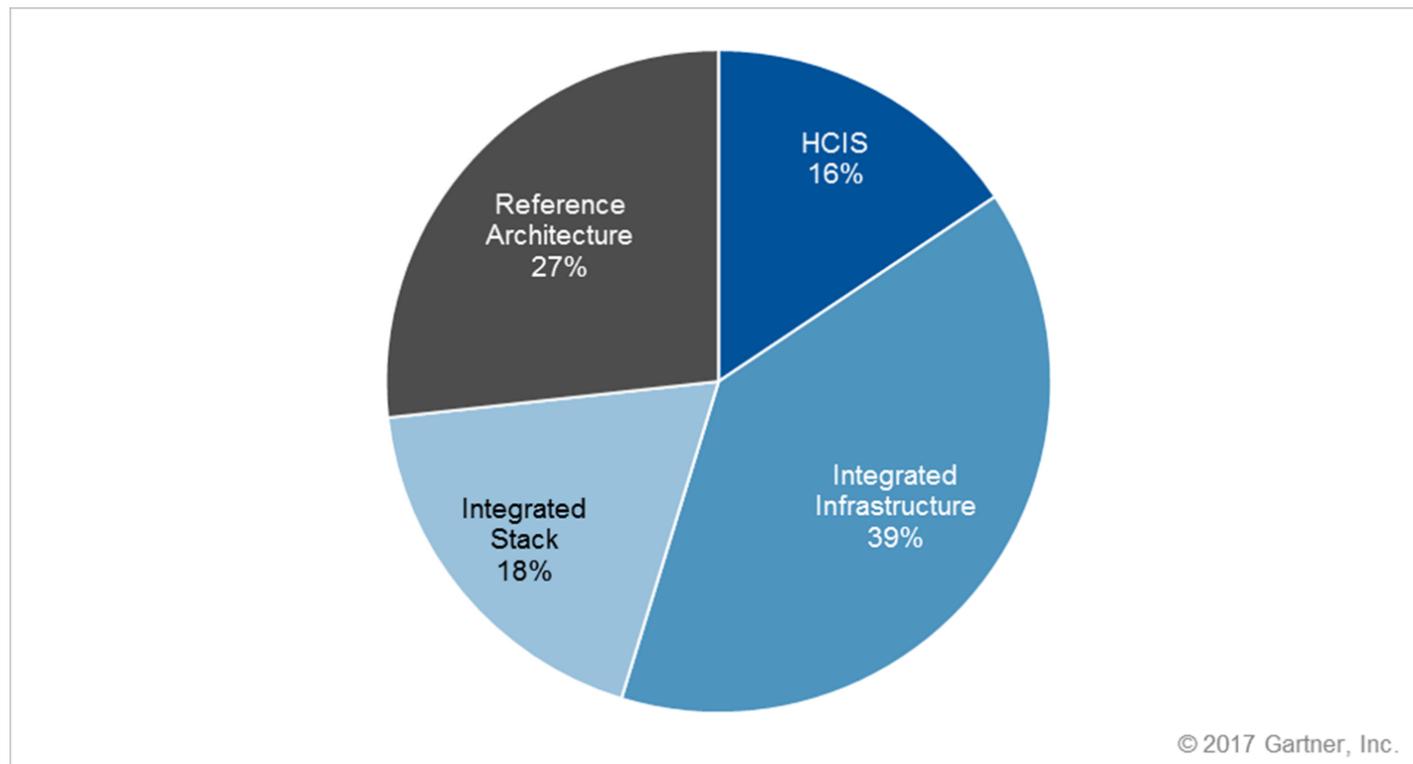
Source: Gartner (October 2017)

As a type of integrated system, HCIS is designed to accommodate scaling from a single or dual node as application demand requires. This modular approach facilitates smaller initial investments and incremental cluster growth when compared to more proprietary integrated system solutions and traditional storage area network implementations.

One limiting factor of HCIS is that it has yet to fully address the nuances of network traffic. This has limited its scalability to 16 to, at most, 20 nodes, in a single cluster for even the largest end users of the technology. This scalability issue has confined most HCIS use cases today to test/development,

virtual desktop infrastructure, a consolidation solution for second-tier server applications, disaster recovery and remote office/branch office (ROBO). These use cases have offered a significant market so far; however, ongoing demand to push HCIS into more use cases will drive providers to start to more fully address network traffic optimization with HCIS by the end of 2018.

Hyperconverged integrated systems have reached new levels of market maturity as indicated by Gartner's "Hype Cycle for Compute Infrastructure, 2017," which places these systems just beyond the Peak of Inflated Expectations. As further evidence of market maturity, leaders in adjacent markets such as servers, storage and network infrastructure have recently entered the market in more significant ways. Examples include Cisco, Dell EMC and Hewlett Packard Enterprise (HPE). Other market maturity indicators during the last two years have been changes in the startup-provider landscape such as Atlantis Computing selling its intellectual property (IP) to Hive-IO; Gridstore changing its name to HyperGrid, while changing its business model to a service-based approach; Cisco acquiring Springpath; HPE acquiring SimpliVity; and Nimboxx closing its doors.

Market Players

Table 1 is a summary of vendors covered in this report and why they were included. Note that this list is not meant to be exhaustive.

Table 1. HCIS Providers in This Report

| Provider	
Cisco	
Reason for Inclusion	Cisco is a network market leader that has acted as an Evolutionary Disruptor with its own solution, HyperFlex.
Dell EMC	
Reason for Inclusion	Dell EMC has its own VxRack and VxRail solutions, and partners with Nutanix.
HPE	
Reason for Inclusion	HPE acquired and incorporated HCIS offerings into its product lines from the startup SimpliVity.
Huawei	
Reason for Inclusion	Huawei is a China-based infrastructure provider that is growing its HCIS business inside and outside of China.

NetApp	
Reason for Inclusion	NetApp is a leader in network-attached storage and has acted as an Evolutionary Disruptor by introducing its NetApp HCI solution.
Nutanix	
Reason for Inclusion	Nutanix is an HCIS market leader that transitioned to a public company in late 2016.
Pivot3	
Reason for Inclusion	Pivot3 is a startup company that has an established market presence in video surveillance and security.
Scale Computing	
Reason for Inclusion	Scale Computing is a startup company with a primary focus on the SMB space and use of KVM as a hypervisor.
HPE = Hewlett Packard Enterprise	

Source: Gartner (October 2017)

The Future of Competition

Hyperconverged integrated systems as a type of data center infrastructure is forecast to represent the fastest revenue increases during the next four years. This significant growth warrants solid strategic approaches by technology business unit leaders involved in the HCIS market if they hope to benefit from the projected rises in revenue. HCIS revenue is expected to grow at a 48% compound annual growth rate from 2016 through 2021, to reach $10.8 billion by the end of the period (see Figure 2).

Figure 2. HCIS Forecast, 2014-2021

Hyperconverged Integrated Systems

Millions of Dollars

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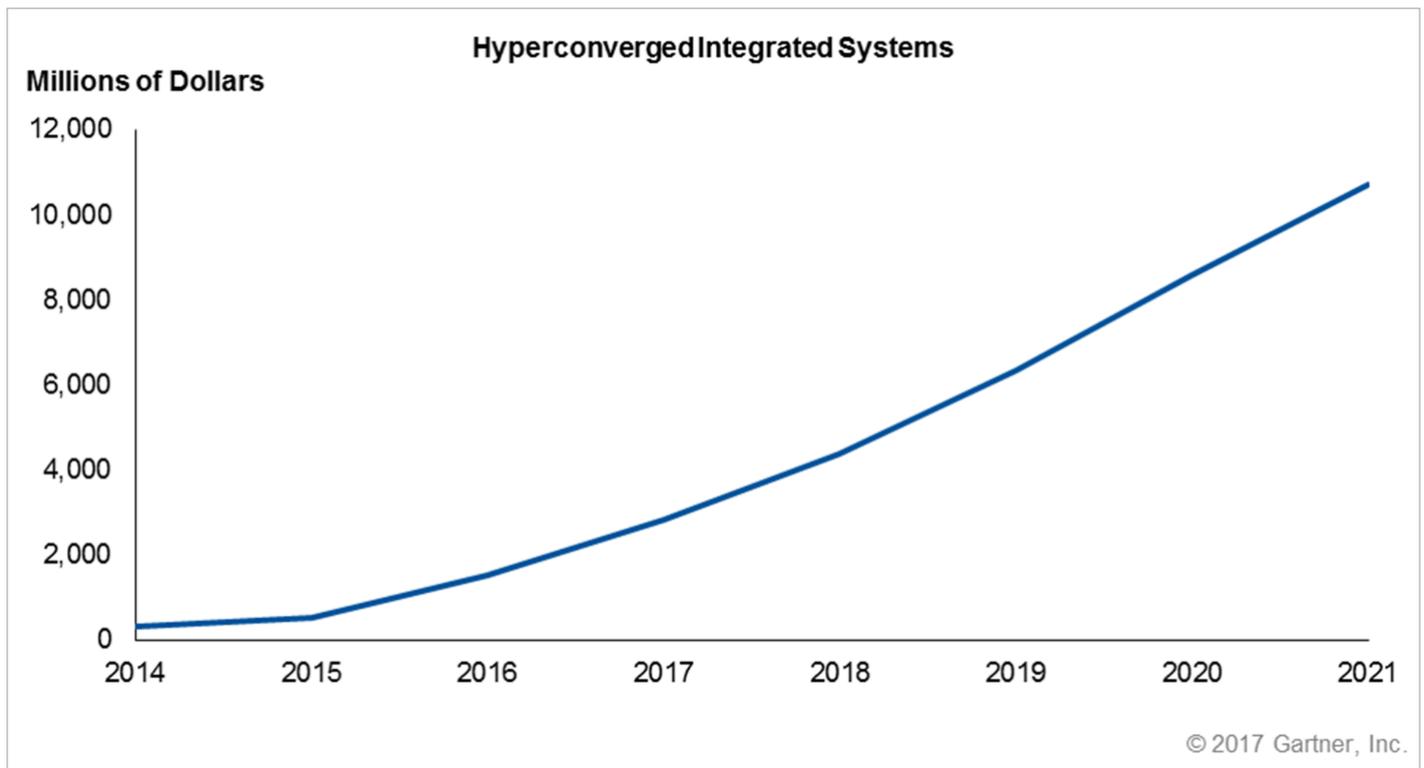
Source: Gartner (October 2017)

With the increasing focus on and investments in HCIS by leaders in adjacent markets, HCIS solutions are expected to add greater features and functions, including greater scalability and hybrid cloud integration, that will help drive HCIS into more use cases. The Evolutionary Disruptors that have entered this market will use their cash and technical resources to drive significant growth in the market and will reach 65% of the revenue share by 2021. All HCIS providers will compete to increase HCIS network traffic efficiencies to broaden HCIS adoption into more scalable database environments. HCIS providers are also likely to incorporate solution capabilities such as analytics and to target edge environments to gain additional share as the HCIS market continues to evolve. Pay-per-use models such as those introduced by Dell EMC, HPE and Nutanix will also be used to leverage sales when end users wish to defer HCIS upfront capital expenditures.

Competitive Profiles

Cisco

MARKET OVERVIEW

Cisco has been working with the company Springpath, a software developer of a distributed file system that enables server-based storage and is purpose-built for hyperconvergence. This working relationship with Springpath resulted in the introduction of Cisco's HCIS offering, HyperFlex, in early 2016. The Cisco HyperFlex HX series includes four models supporting up to two processors per node, with two of those models supporting all-flash storage. Cisco also added four more models in October 2017 built on the latest generation of Intel Skylake processors and architecture. In the third quarter of 2017, Cisco announced the intention to acquire Springpath and completed the acquisition in September 2017. With that acquisition, Cisco now owns both the hardware and software IP to build a fully integrated HCIS solution.

HOW CISCO COMPETES

As a leader in the network market, Cisco has a globally distributed installed base of data center network infrastructure. Cisco has been leveraging that installed base and its existing sales channels as a means to grow its HCIS business much as it did with its Cisco UCS servers. Since its launch, Cisco HyperFlex has sold rapidly and established more than 1,900 customers in many geographies worldwide. Cisco positions its Cisco HyperFlex offerings as being designed for independent scaling of compute and capacity to achieve optimal efficiencies and a unique clusterwide data distribution model with a log-structured file system. Cisco HyperFlex is promoted as being built on the unique network fabric of UCS and optimized for flash storage to deliver high performance and predictable low latency. Cisco uses the Cisco UCS C-Series rack-mount server and fabric interconnect as the hardware foundation for building HyperFlex and allows use of Cisco UCS B-Series blade servers or C-Series rack-mount servers as compute-only engines, which permits independent scaling of compute and storage; this means that Cisco's future plans for Cisco UCS becomes critical for Cisco HyperFlex. The sharing of these product plans will become critical to Cisco HyperFlex's long-term success.

Dell EMC

MARKET OVERVIEW

Dell EMC, a subsidiary of Dell Technologies, is a provider of servers, storage, networking, data protection, cloud computing solutions and integrated systems on a global level. Dell EMC has three product plays in the HCIS space. The first is VxRail, which consists of five product series, each supporting all-flash or hybrid storage configurations, and each designed for data center needs from general to situationally specific. The second is VxRack, with two versions: VxRack System Flex utilizes Dell EMC ScaleIO, and VxRack System SDDC utilizes VMware Cloud Foundation. The third is the XC Series, which combines Dell EMC PowerEdge servers with Nutanix software.

HOW DELL EMC COMPETES

Dell EMC has been one of Nutanix's most significant partners, accounting for more than 20% of Nutanix's revenue during some periods, through sales of the Dell EMC XC series. Dell EMC continues to maintain that partnership with Nutanix. In the second quarter of 2017, Dell EMC announced product enhancements to its other HCIS product lines, VxRail and VxRack, which included Cloud Flex for HCI, a consumption-based pricing approach designed to facilitate more cloudlike purchasing on the part of end users. With one of the broader and deeper suites of HCIS offerings, Dell EMC has been driving sales for an array of solutions integrated with its sister subsidiary, VMware (for example, VxRail, VxRack System SDDC), as well as more hypervisor-agnostic options such as its VxRack System Flex and XC products. The Del EMC XC business is estimated to be at least 30% of the Dell EMC HCIS revenue for the first half of 2017, suggesting that it remains as an important contributor to the Dell EMC HCIS portfolio.

Hewlett Packard Enterprise

MARKET OVERVIEW

In the first quarter of 2017, HPE enhanced its HCIS product portfolio through the acquisition of SimpliVity. According to Gartner estimates, SimpliVity was the second-place provider in global HCIS revenue share in 2016 (with 6.3%). HPE offers the HPE SimpliVity 380, which combines the HPE

ProLiant DL380 Gen9 Server with SimpliVity software. The HPE SimpliVity 380 is a 2 unit (U) rack-optimized device that supports all-flash storage and hardware-assisted, in-line deduplication, compression and optimization. HPE has integrated the SimpliVity software stack with the latest ProLiant version, Gen10, which includes security feature enhancements, and the first implementation of the Skylake CPU.

HOW HEWLETT PACKARD ENTERPRISE COMPETES

HPE has made a rapid introduction of its first combination of SimpliVity software with HPE server hardware in an effort to gain market traction from its SimpliVity acquisition as soon as possible. HPE has an extensive server installed base, along with a sizable network of global direct sales and channel partners that it will utilize to drive sales of this first offering, the HPE SimpliVity 380. This approach presents a significant business opportunity for HPE, but some potential customers are waiting to see how well HPE will assimilate SimpliVity into its existing product lines before they decide to make a purchase. HPE continues to demonstrate SimpliVity product integration to help convert those prospects into HPE SimpliVity customers. HPE is positioning the increased cost-efficiency of its HPE SimpliVity 380 as one of its leading value propositions. HPE offers a "SimpliVity HyperGuarantee" as a part of its product marketing that includes the promise of a 90% capacity savings across storage and backup combined when compared with traditional solutions.

Huawei

MARKET OVERVIEW

Huawei is a Chinese provider selling information and communication technology solutions globally. Its HCIS product, FusionCube, has a portfolio that has been expanded to address a variety of use cases and customer types. The Huawei FusionCube product portfolio includes: 12U servers, with 16 two-socket or eight four-socket compute/storage nodes; 2U servers, with four two-socket SSD compute/storage nodes; 4U servers with four two-socket HDD compute/storage nodes; and a 2U server, with a single two-socket SSD/HDD compute/storage node. These servers can be installed in a 42U cabinet. The company has grown its HCIS business based on strong midmarket consumption to date. Supported by strong momentum for HCIS adoption in China, the company has been aggressively working to expand its HCIS business globally.

HOW HUAWEI COMPETES

Huawei has a track record of unique technology innovation and differentiation, as well as integration capabilities. The company also manufactures some components, enabling the company to fine-tune system costs and performances. In 2016, Huawei started its cloud service business, allowing the company to position its FusionCube as hybrid cloud infrastructure. Huawei has continued to enrich its HCIS portfolio to satisfy a broader set of working scenarios. It also offers customized solutions for large customers. Huawei faces its most challenging market outside of China in the United States, where the potential for trade issues with China makes some U.S. customers reluctant to purchase from a China-based provider.

NetApp

MARKET OVERVIEW

NetApp is one of the more recent entrants that are targeting the HCIS market. The company announced its NetApp HCI toward the end of the second quarter of 2017 and expects to ship the first general availability units to customers in late October 2017. NetApp HCI offerings start with a minimum configuration of two chassis, with two compute and four storage nodes. From there, compute and storage nodes can be added independently, depending upon data center requirements. As specific configurations, NetApp offers its HCI solutions as small compute (16 cores)/small storage (5.5TB effective capacity), medium compute (24 cores)/medium storage (11TB effective capacity), and large compute (36 cores)/large storage (22TB effective capacity). The NetApp HCI/SolidFire effective storage capacity calculation accounts for Helix data protection, system overhead and global efficiencies, including always-on compression, deduplication and thin provisioning

HOW NETAPP COMPETES

NetApp has a large installed base of Ontap-based systems, as well as direct and channel sales mechanisms, through which it will work to leverage sales of its NetApp HCI offerings. Built on a foundation of SolidFire Element OS 10 and support for Ontap Select for file services, NetApp HCI is being targeted to the enterprise market with a focus on enterprise cloud, web infrastructure and workload consolidation within that enterprise space. NetApp is positioning its HCI offerings to provide competitive advantage through workload consolidation and simplified, centralized operations. NetApp is also attempting to differentiate NetApp HCI with guaranteed performance, increased infrastructure elasticity, less infrastructure overhead and easy automation when compared to other HCIS solutions in the market. NetApp's six-node minimum indicates that NetApp will focus on larger organizations and use cases, and will not target the ROBO market. As a relatively recent entrant in the HCIS market, NetApp faces strong competition from currently established providers. NetApp will need to demonstrate and communicate the specific advantages that its customers realize with NetApp HCI to gain quick sales traction.

Nutanix

MARKET OVERVIEW

Nutanix was an early strong entrant in the HCIS market. Gartner estimates that Nutanix was the HCIS leader in 2016, with HCIS revenue topping $445 million for that year. Nutanix was the first HCIS provider to transition to a publicly held company, which it did in late 2016. Nutanix software is designed with a variety of capabilities to cover a wide array of data center requirements. Nutanix software runs on a number of HCIS solutions, including its own (NX-1000, NX-3000, NX-6000 and NX-8000); OEM partners such as Dell EMC, IBM and Lenovo; and configurations from Cisco and HPE. Nutanix also has its Acropolis and Prism software editions designed to manage Nutanix environments from small to large scale.

HOW NUTANIX COMPETES

Nutanix messaging goes beyond hyperconvergence, and instead, positions Nutanix solutions as enabling enterprise cloud deployments by focusing on enhanced application management, self-service and infrastructure automation features. Nutanix supports a wide array of hypervisors, including Microsoft Hyper-V, Nutanix AHV, VMware ESXi and XenServer for Citrix workloads, as a means to broaden its market appeal. Nutanix has maintained high-quality technical support and leverages repeat purchases into its installed base through that support quality. In the second quarter

of 2017, Nutanix introduced a consumption-based pricing model for its products called "Nutanix Go." If Nutanix can maintain its sales growth in the face of competition from larger Evolutionary Disruptors such as Cisco and Dell EMC, then it will remain a significant competitor in the market.

Pivot3

MARKET OVERVIEW

Pivot3, founded in 2002, has established a solid reputation from its HCIS solution, especially around surveillance and security. The company has transformed its business model from serving specific verticals and special areas, to addressing general data center workloads. Pivot3 markets its own branded HCIS appliances, as well as sells its software stack through its OEM partners that bundle it with their hardware. The company supports a number of strategic hardware partners, including Cisco, Dell EMC, Lenovo and Supermicro.

HOW PIVOT3 COMPETES

Pivot3 has more than a decade of industry experience with its HCIS products, offering direct input/output performance, granular scalability, high storage capacity efficiency and multiappliance global active/active high availability. In April 2017, it introduced Acuity, its new-generation HCIS platform, with policy-based quality-of-service software that serves multipriority and mixed workloads on a single infrastructure and industry-first nonvolatile memory express flash, data-path performance. With Acuity, Pivot3 continues to broaden its targets and add more hybrid cloud functions. To accelerate sales growth, Pivot3 must more broadly communicate its product features and compelling value propositions, while increasing market awareness of its solutions.

Scale Computing

MARKET OVERVIEW

Scale Computing is a privately held company, founded in 2008. The company has established a solid position in the market by serving more than 2,500 HCIS customers, mainly smaller companies (500 employees or fewer) globally. Its HC3 virtualization platform is a KVM-based HCIS appliance, aiming to provide cost-effective scale-out infrastructure without paying virtualization software license fees. Recently, it announced a new partnership agreement with Lenovo.

HOW SCALE COMPUTING COMPETES

Scale Computing's marketing and sales efforts were focused around the SMB space, but the company is trying to expand its target customers to larger organizations. HyperCore, its HCIS software, has added more storage efficiency and utilization with deduplication in the latest release (the HC1150DF and HC5150D). Recently, the company introduced a single-node system to address increasing ROBO and edge needs, as well as software-only options. Scale Computing must take care not to dilute the focus of its SMB approach as it attempts to penetrate larger organizations.

References and Methodology

Market historical data was derived from Gartner integrated system market share estimates. Projections were taken from Gartner's integrated system forecasts. Provider information was taken from publicly available information on those providers, including their own company websites and press releases.

Definitions

Integrated systems comprise a class of data center systems that deliver a combination of server, shared ECB-storage and network devices, along with management software, in a preintegrated stack. There are four segments in this overall market category:

Integrated Stack Systems: Server, storage and network hardware integrated with application software to provide appliance or appliancelike functionality

Integrated Infrastructure Systems: Server, ECB storage and network hardware, along with management software, integrated to provide shared compute infrastructure

Integrated Reference Architectures: Products in which a predefined, presized set of components are designated as options for an integrated system, whereby the user and or/channel can make configuration choices between the predefined options

Hyperconverged Integrated Systems: A platform offering shared compute and storage resources, based on software-defined storage, software-defined compute, commodity hardware and a unified management in terface

For additional details, see "Market Definitions and Methodology: Integrated Systems."

Providers that exhibit evolutionary disruptive behavior are defined as:

Evolutionary Disruptors: Technology providers that have an established brand and seek to leverage that brand in a new market from adjacent technology markets, or from part of the traditional data center supply chain

Acronym Key and Glossary Terms

ECB	
HCIS	
external controller-based	hyperconverged infrastructure system
HDD	
external controller-based	hard-disk drive
SMB	
external controller-based	small and midsize business
KVM	
external controller-based	Kernel-based Virtual Machine
SDDC	
external controller-based	software-defined data center

SSD	
external controller-based	solid-state drive

Evidence

The basis for this report was primary research looking at the changes in the competitive landscape during the last two years. Observations of this market revealed the exit from the market by several startup providers, one startup going public as a company and several market leaders in adjacent markets taking Evolutionary Disruptor approaches to gain share in the growing HCIS market. These changes warranted a closer look at the market to develop effective recommendations for providers participating in the space.

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