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Beyond the Big Three

Cloud Service Providers that Should Be Part of Your Multi-Cloud Strategy

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Introduction¹

The cloud infrastructure market is highly consolidated, with the top three providers holding nearly 85% of the US market. From the start, the market has been dominated by the company that introduced the model—Amazon Web Services (AWS), which holds nearly 70% of the US Infrastructure as a Service (IaaS) market on its own.² The heavy dominance of AWS and its two main challengers in the public cloud market, Microsoft Azure and Google, simplifies vendor choice for many enterprises, which largely regard AWS (and to a lesser extent, Azure and Google Cloud Platform) as the “safe” choice of cloud vendor.

The market leaders have earned their dominance, with scale, product quality, and continual innovation. They have also hampered competition in the market. Since 2010, when Frost & Sullivan published its first IaaS market landscape report, the number of vendors offering public cloud services has declined precipitously. A host of well-regarded technology companies have exited the cloud infrastructure market (including Verizon/Terremark, HP, VMware, and AT&T). Others have shifted their business models from hosting cloud workloads to partnering with the “big 3” cloud infrastructure providers; for example, Rackspace now focuses on managing client workloads in a growing list of clouds, including AWS, Azure, Google, and Alibaba.

And yet, the market continues to support IaaS providers beyond the big 3. These companies have survived by exploiting gaps in the leaders’ offers, and focusing on specific customer needs. While few are interested in challenging AWS’s lead, neither do they consider themselves niche players. Instead, they believe the rapid growth of the cloud infrastructure market (30% CAGR through 2021, according to Frost & Sullivan research) and the evolution of customer needs leaves room for multiple companies to be successful.

Also in their favor is the rise of the “multi-cloud” environment. Businesses have little incentive to choose a single cloud service provider for their workloads; instead, they are likely to subscribe to multiple services from multiple vendors as a way to ensure that each workload is in the optimal cloud.

In this report, Stratecast looks at the evolving competitive cloud landscape, and profiles four cloud service providers whose products and business approaches are worthy of consideration as part of an enterprise’s multi-cloud environment.

¹ In preparing this report, Stratecast conducted interviews with representatives of the following companies:

- DigitalOcean – Shiven Ramji, Vice President, Product; Reynold Harbin, Director, Product Marketing; Lynnette Nolan, Senior Communications Manager
- INAP – Jennifer Curry, Vice President, Cloud; Josh Williams, Vice President, Sales Engineering
- Joyent – Bill Fine, Vice President, Product and Marketing
- Navisite – William Toll, Vice President, Product Management

Please note that the insights and opinions expressed in this assessment are those of Stratecast, and have been developed through the Stratecast research and analysis process. These expressed insights and opinions do not necessarily reflect the views of the company executives interviewed.

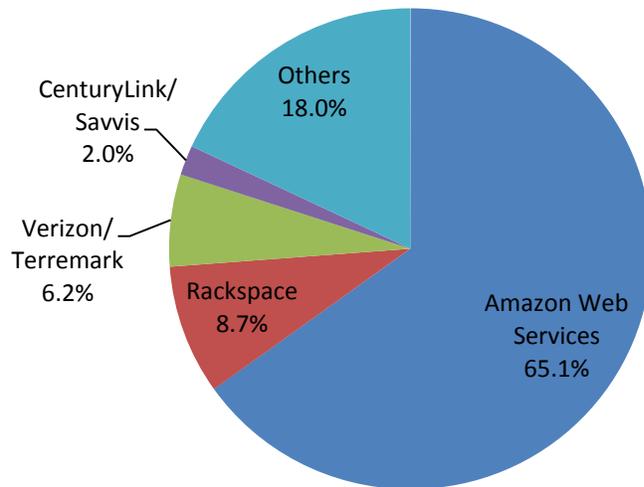
² See Frost & Sullivan report: CC 7-1, *US Cloud Infrastructure as a Service Market Outlook, 2017*, available [here](#).

Evolving Competitive Landscape for Cloud

While AWS has dominated throughout the cloud's relatively short lifespan, other market participants have come and gone, been acquired and divested, and shifted direction.

When Frost & Sullivan first sized the IaaS market in 2010, the market share runners-up to AWS were Rackspace, Verizon, and CenturyLink, as shown in Figure 1.³ That year, the "others" category, comprising 18% of the market, included a number of players that no longer offer public cloud services (in some cases, are no longer in existence), including AT&T, EMC, HP, GoGrid, PAETEC, and NewServers. Note that Microsoft was listed as "other" (meaning it had less than 1% market share), and Google—which had not yet entered the market—is absent.

Figure 1: Infrastructure as a Service Market Share Analysis, US, 2010

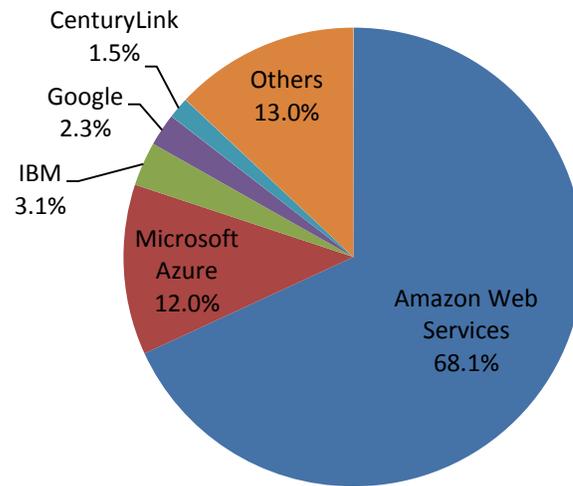


"Others" category includes Microsoft, GoGrid, AT&T, PAETEC, NewServers, Flexiscale, EMC, HP, IBM, and several other small providers.

Source: Frost & Sullivan

Just six years later, the leader board had shifted dramatically, as shown below in Figure 2. Among the two holdovers, AWS had grown share in a market with a CAGR of over 60% during that period; whereas, CenturyLink (despite several cloud acquisitions, including Tier 3) moved down to fifth place, with a smaller share of a many-times-larger market than in 2010. By the 2016 report, Rackspace and Verizon had fallen into the "others" category, which comprised 13% of the market and also included AT&T, Datapipe, DigitalOcean, and several other small providers.

³ See Frost & Sullivan report: CC 1-5, *Cloud Infrastructure as a Service Market: On the Road to Commodity Status* (2011), available [here](#).

Figure 2: Infrastructure as a Service Market Share Analysis, US, 2016

"Others" category includes AT&T, Rackspace, Verizon, Datapipe, DigitalOcean, and several other small providers.

Source: Frost & Sullivan

With the maturing of the cloud market, the leaders appear to have solidified their positions for the foreseeable future. And yet, with the majority of enterprise workloads still in premises data centers, and even more cloud-based applications yet to be written, the still-growing market may have room for additional providers.

Enterprises Choose Diverse Infrastructure Environments

There is no reason why businesses cannot entrust all their cloud workloads to a single provider. However, few are making that choice. According to the 2017 Frost & Sullivan Cloud User Survey of IT decision-makers, businesses use an average of 4.5 deployment models for their workloads, including premises-based servers, managed services, and cloud. They also use, on average, 2.2 public cloud providers.

The use of multiple environments is not a matter of trying out different vendors before making a choice; instead, it reflects businesses' decision to implement a flexible, hybrid, multi-cloud strategy. For many, this reflects the IT organization's shift from IT provider to "service broker," selecting the optimal deployment option for each workload, based on characteristics and requirements such as app performance, security, speed-to-deploy, and cost.⁴

Challenge of Multi-Cloud Environments

While ease of entry into cloud (no capital investment or term commitments) makes it easy for businesses to utilize multiple cloud services, disparate environments can add to the management and administrative burden on IT organizations. What businesses really want is not multiple, separately-

⁴ For more information about the service broker model, see Stratecast reports: SPIE 2017-02, *The Rise of the Cloud Service Broker Model: Helping IT Organizations Transform to Support Digital Business* (2017), available [here](#); and SPIE 2017-24, *Assessing Workloads in a Hybrid Cloud: CloudGenera Decision-Analytics Tool Optimizes Application Placement* (2017), available [here](#).

managed clouds, but a seamless, federated environment that crosses multiple vendors' services—what has come to be called “multi-cloud.” Because cloud vendors utilize different, often proprietary platforms, it is often difficult to move workloads from one to another, or manage workloads across them. This challenge has given rise to a number of third-party hybrid or multi-cloud management platforms that support visibility and management across clouds.⁵ Providers of such platforms work closely with the major cloud vendors to integrate their proprietary tools into the platform. Unfortunately, this is where smaller cloud vendors lose out. The third-party platforms support the most-commonly used clouds: that is, AWS, Azure, and sometimes Google and IBM.

However, the landscape could change with the increasing popularity of containers (rather than virtual machines) for cloud-based workloads. Because containers “carry” all the components of the app—including the operating system, virtualization platform, and security—they can be more easily ported across infrastructure environments. Several providers interviewed in this paper mentioned Kubernetes as a way to give businesses a seamless multi-cloud environment that they can manage centrally.

Is the current lack of seamlessness a reason not to utilize a range of cloud service providers? To date, enterprises have said “no.” Hybrid and multi-cloud management platforms are relatively new to market and still evolving in the number and type of environments they manage. Among businesses that have already deployed a hybrid environment, 27% say they struggle to manage multiple cloud vendors. While businesses are eagerly awaiting the federated multi-cloud—with 76% saying they would prefer to manage multiple clouds through a single console—it appears that they are not delaying their adoption of multiple vendors.

Beyond the Big Three: Four Cloud Providers that Enterprises Should Consider for their IT Environments

As noted, businesses could choose to deploy all their cloud workloads with a single provider, and a few do so. However, even those that concentrate their general workloads with AWS or Azure may find that the optimal deployment model for a specific workload is with another cloud service provider. Sometimes, the particulars of the vendor's cloud service make it ideal for certain use cases. In other cases, the business may benefit from the value-added services offered by the provider. In this section, we profile four veteran cloud service providers that fall into the “others” category in market share, but deserve a close look for specific business needs.

DigitalOcean

Most cloud service providers remaining in the market have long legacies as co-location or hosting providers. DigitalOcean is an exception. Founded in 2012, when the market was already starting to consolidate, the privately-held company found immediate success as the “developer's cloud.” DigitalOcean's focus on startups—the creators of the next generation of cloud-native, open source-based apps—was unique at a time when other providers were courting enterprise buyers.

The company's on-demand, public cloud services are built for simplicity, scale, ease of use, and rapid provisioning. Developers can use a “one-click” deployment option to access pre-built applications or open source distributions, allowing them to focus on their code rather than spending time on installation and configuration. “Droplets”—the company's virtual machine units—are flexible and

⁵ See Frost & Sullivan report: CC 7-3, *Cloud Management Platform Buyer's Guide, 2017*, available [here](#).

easily resizable. Flat pricing (without charges for each feature) and a monthly cap (at the equivalent of 28 days) keep budgets predictable. 24x7 support is included for all customers, not just those who meet spending or product thresholds.

DigitalOcean continues to be attractive to cloud developers and start-ups, as well as colleges and universities that use its services for their computer science students. DigitalOcean says it has over a million registered customers; and internet analysis firm Netcraft places DigitalOcean second among all hosting providers worldwide (after AWS) in the number of web-facing servers.⁶

In recent years, as its community members have grown in their careers, the company has expanded its target from developers, to their teams, to businesses, with additional features and support. Its products include compute, block and object storage, network firewalls, and monitoring tools. On the roadmap are features such as native Kubernetes support, Database as a Service, private networking, and an open source marketplace.

But the company's focus remains on making the cloud simple and accessible to all. As such, DigitalOcean invests in its vibrant developer community, enabling new developers to find the resources they need. The platform makes it easy for the developers to “build their idea” quickly, using APIs and easy deployment tools. Finally, the company enables the ideas to scale, from a simple web blog to a complex global deployment across the company's 12 data centers.

Stratecast Recommendation: Use DigitalOcean for Dev/Test Workloads

Today's businesses rate “innovation” as key to competitive success, with 67% of IT leaders saying it is important to free up IT staff to focus on innovative solutions. In addition, 58% want to improve business agility and market responsiveness; and 69% say they need to deliver service and applications faster.

For such businesses, DigitalOcean provides the optimal cloud to support rapid development, integration, and testing of new ideas. The DigitalOcean platform makes it easy for small teams within an organization to prototype new concepts. The open source foundation easily fits into companies' Dev/Ops frameworks, to support continuous development and integration processes. It also is easy for software companies to provide proof-of-concept for their customers. High levels of support and ease of platform use allow businesses to use DigitalOcean to help fill the expertise gap within their own firms, bringing less experienced developers rapidly up to speed.

DigitalOcean's scalability and its 12 data centers in eight regions worldwide mean companies can choose to keep their Dev/Test workloads on the platform once they move into production—a good idea for workloads that are highly dynamic. In fact, businesses may find that their developers and architects resist a move from the user-friendly DigitalOcean cloud to comparatively unwieldy competitive services.

INAP

Founded in 1996, Internap Corporation (INAP) is a leading global provider of data center services (co-location, network, cloud and managed hosting). Its 57 data centers, primarily built to concurrently maintainable Tier III standards, and designed specifically for security and power efficiency, are located in metro areas in the US, Canada, Europe, and Asia.

⁶ Netcraft, [Hosting Provider Server Count](#), accessed May 31, 2018.

Leveraging its hosting expertise, INAP was a pioneer in bare-metal cloud, launching its offering at a time when most in the industry believed the “cloud” required a hypervisor.⁷ The INAP bare metal offering was embraced by organizations with high-performance compute needs (e.g., research, analytics) that were not suitable for shared public cloud services, but required too much infrastructure investment to deploy on-premises.

As the cloud market evolved, INAP introduced public and private cloud offerings. In early 2018, the company made another leap with the acquisition of SingleHop, a provider of managed cloud services. The acquisition combines SingleHop’s expertise and technology for managing private and public clouds with the extensive INAP data center and network footprint.

SingleHop’s easy-to-use management platform is ideal for multi-cloud deployments, offering customers visibility and control across AWS, Azure, and SingleHop data centers. The managed option allows SingleHop to manage infrastructure deployments, including backup and patches to the operating system. In addition, the platform can support private cloud and hosting services, managed by the customer, by SingleHop, or jointly.

While the combined companies offer a wealth of infrastructure options—including co-location and network interconnect, public and private cloud centers, and managed services—INAP says its conversations with customers begin not with infrastructure but with applications. Pointing to statistics showing that some 70% of enterprise workloads are still housed on-premises, INAP says it is well-positioned to help customers optimize non-cloud native apps that are not ready for refactoring, simply by moving them to a managed hosting environment. With managed hosting, the customer can introduce benefits from speed and flexibility in provisioning, minimize the maintenance burden, and shift costs from the capital to operating budget.

Stratecast Recommendation: Use INAP for High-Performance, Low-Latency Workloads

According to Frost & Sullivan research, 61% of IT decision-makers say they have hesitated to place a workload in the cloud due to concerns about application performance; and 59% cite concerns about network performance. For workloads that require high levels of processing (such as big data analytics) and/or are latency-sensitive (such as streaming media), the public cloud is often inadequate.

INAP’s cloud offerings are optimally suited for high-performance compute and low-latency workloads. The company’s managed private cloud offerings run on bare metal, thus ensuring that maximum processing capacity is dedicated to the application. INAP’s data centers worldwide ensure that cloud apps can be configured close to users and applications that access them, and the company’s interconnect facilities allow for direct connections to all leading network and cloud service providers. When SingleHop’s technology is fully integrated into the INAP data centers, enterprises will be able to leverage the sophisticated multi-cloud management platform to support hybrid workloads across AWS, Azure, and the INAP cloud.

Joyent

Since its founding as a software company in 2004, Joyent has been a pioneer and innovator in the cloud industry. The company developed Node.js, the now-dominant open source tool for developing server software using the JavaScript programming language. In 2011, Joyent released its

⁷ See Stratecast report: SPIE 2014-02, *Bare Metal Cloud: A Non-Virtualized Cloud Option for Performance-Sensitive Workloads* (2014), available [here](#).

SmartOS cloud operating system as an open source project, creating one of the first open source clouds. In addition, the company was an early proponent of the “hybrid” cloud, linking the premises data center to the cloud, as well as one of the first cloud providers to support containers.

In 2016, Joyent was acquired by Samsung. The companies continue to operate separately, with Samsung becoming one of Joyent’s largest customers.

In 2017, Joyent introduced to market a new type of private cloud, called Triton Private Region.⁸ A managed, bare-metal open source cloud service, Triton Private Region offers dedicated infrastructure in Joyent’s data centers in the US, Europe, and Asia. Unlike competitive bare metal cloud offers, Joyent’s service includes dedicated networking equipment (i.e., routers, switches, firewalls). Because Joyent’s solution is fully open source and deployed on dedicated infrastructure, it is easy for customers to transfer workload management from Joyent’s control to their own. Furthermore, the open source platform can be deployed on premises, for a true hybrid environment.

Triton Private Region offers a significant cost advantage over the public cloud—up to 50% savings for steady-state workloads, according to the company. The company says this makes the offer highly attractive to enterprises that are mature cloud users, but whose applications and data have grown to the point that the flexible public cloud is no longer cost-effective.

Joyent continues its focus on innovation. According to the company, it is currently investing in developing “open services” that can run on any cloud; for example, upstream services based on Kubernetes. Another area of focus is serverless compute; specifically, portable functionality that can be deployed across different cloud platforms.

Stratecast Recommendation: Use Joyent for Large, Data-Intense Workloads

In Frost & Sullivan’s annual survey, IT decision-makers are reporting increasing concerns about costs in the public cloud. Thirty-two percent say they find it difficult or very difficult to manage costs for cloud workloads—which could explain why 34% say they are struggling to acquire the budget they need to continue implementing their cloud strategy. Adding to the topline budget woes are costs related to managing cloud workloads: 58% of respondents say that, for each dollar they spend with an IaaS provider, they spend more than \$3 to manage the cloud workloads. For businesses that expected to save money in the cloud, that’s a problem.

The budget woes are exacerbated for large, steady-state workloads, particularly those associated with data processing and analytics. Storage, network, and sufficient processing capacity in the public cloud can easily grow out of control. Such a workload would be a candidate for “repatriation” in a private data center—except that few businesses are prepared to build out data center infrastructure globally.

That’s one case where Joyent’s Triton Private Region can be an optimal solution. Data and applications can be securely deployed on dedicated infrastructure in one or more data centers, all centrally managed by the enterprise and/or Joyent. Joyent’s size and scale can easily accommodate the needs of even the world’s largest enterprises, supporting petabytes of data, configured for optimal application performance, across private regions, the public cloud, and even company data centers—at a fraction of the cost of public cloud deployments.

⁸ See Stratecast report: SPIE 2017-40, *Reinventing the Private Cloud: Joyent Triton Private Region Brings New Flexibility, Control to Private Cloud Environments* (2017), available [here](#).

Navisite

Navisite offers managed cloud infrastructure and application services to enterprise customers. Founded as a web hosting company in 1996, the company was an early provider of “utility” compute services—a precursor to what we think of as “cloud” today. Now part of Spectrum Enterprise (following the 2016 acquisition of former parent Time Warner Cable by Charter Communications), Navisite continues to serve enterprise clients under its own brand. The company has seven data centers in the US and UK.

Rather than only targeting developers of new, cloud-native apps, the company focuses on enterprises that are currently navigating the journey from the premises data center to the cloud. Citing statistics showing that just 20% of enterprise workloads running on VMware have been moved to the cloud, the company positions its VMware-based cloud, NaviCloud, as well-suited for both migrating and backing up enterprise workloads. NaviCloud is designed to run complex, mission-critical enterprise workloads; and is available as a managed, co-managed, or unmanaged service.

In 2016, in response to requests from customers, the company launched Managed Services for Microsoft Azure. The move enables Navisite to support customers’ multi-cloud environments.

As a managed services provider, Navisite provides a consultative and personalized experience to help customers accelerate their cloud journeys. Its comprehensive services portfolio includes managed infrastructure services (including cloud migrations, hybrid cloud, private cloud, and public cloud); as well as managed application services (including Office 365, managed mobility, Oracle eBusiness, Microsoft Exchange, Microsoft Dynamics, database management, and Desktop-as-a-Service).

Stratecast Recommendation: Use Navisite to Ease the Transition of VMware-based Workloads to Cloud

In the Frost & Sullivan cloud survey, 43% of IT decision-makers say they have adopted a “cloud first” approach for new applications, but are not migrating existing applications. The challenge to migrate applications to cloud (cited by 57% of respondents), or even to leverage the cloud for backup and recovery of data center applications (cited by 37%), is daunting for many businesses.

With its deep understanding of the enterprise data center environment, Navisite is well-positioned to help businesses make the move from premises to cloud—starting with backup of VMware-based workloads from the premises to the Navisite cloud. Navisite has designed its disaster recovery offering to enable near real-time Recovery Point Objectives (RPO) and robust Recovery Time Objectives (RTO) for enterprise workloads. Customers can either purchase the base service from Navisite and manage the process themselves, or they can have Navisite provide a fully-managed Disaster Recovery service.

For many enterprises, the real value of partnering with Navisite is that IT resiliency is not handled as a discrete task, but in context of the company’s overall cloud strategy. Taking an application-centric approach, Navisite will help the customer identify the optimal solution for each workload, whether migration or backup and recovery, or ongoing management of the IT stack in the cloud. Navisite will also help determine the appropriate backup environment (Azure cloud, VMware cloud, or hybrid), and ensure a seamless process with modern security measures and minimal disruption.

Stratecast The Last Word

It's possible for consumers to do all their shopping at WalMart, for example, or Costco. But even those who make the majority of their purchases at a big box retailer generally also patronize other retailers—perhaps a farm stand for produce, or a local jeweler for special gifts—driven by considerations such as selection, service, or convenience.

Similarly, as the cloud market matures, enterprises that have entrusted their general workloads to AWS or Azure (or both) will place certain applications with other providers that they believe can better meet specific needs.

The use of multiple cloud services will grow, driven by two trends:

- IT organizations' role as a service broker to the business, selecting the optimal deployment model for each application
- The rise of containers and open source-based cloud platforms that simplify management across multiple disparate providers

Poised to benefit from the move toward multiple clouds are providers such as DigitalOcean, INAP, Joyent, and Navisite. These firms are not directly challenging the “big 3”; instead, they are differentiating their offerings (and in some cases partnering with larger firms) to meet specific client needs.

The continued double-digit growth in the cloud IaaS market offers a lot of opportunity for a range of providers, including new-to-market firms, to identify and capture a share. As enterprises become more comfortable deploying their multi-cloud strategies, we can expect to see the IaaS leaderboard continue to change.

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