



Research Agenda, Q1 2017

Service Providers

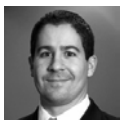
Covering the evolution of public and private cloud computing and the disruptive technologies that impact traditional hosted infrastructure services.

The Service Providers Channel tracks managed infrastructure service providers, Web and applications service providers, hyperscale cloud providers, network service providers, content delivery networks, interconnection providers and systems integrators, as related to the adoption of public and private cloud computing and traditional hosted infrastructure services. This includes coverage of technology, market sizing and factors that affect the strategies for these competitors. This channel is designed to provide competitive analysis for service providers, product selection guidance for enterprise buyers, customer insight for infrastructure and software vendors, and competitive dynamics analysis for financial investors. The geographic focus of this research is global. Specific regional analysis will be available in separate, focused channels. Special reports covering the Asia-Pacific market will also be included in the coverage.

ABOUT 451 RESEARCH

451 Research is a preeminent information technology research and advisory company. With a core focus on technology innovation and market disruption, we provide essential insight for leaders of the digital economy. More than 100 analysts and consultants deliver that insight via syndicated research, advisory services and live events to over 1,000 client organizations in North America, Europe and around the world. Founded in 2000 and headquartered in New York, 451 Research is a division of The 451 Group.

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Overview

The managed infrastructure and cloud market is in rapid flux as enterprise adoption of external, managed and unmanaged infrastructure services has gone mainstream, and there is a very large, wide-open opportunity to stake ground in a number of key enterprise verticals driven by overall economic pressures to adopt cloud-style IT service delivery. Advanced infrastructure services, such as disaster recovery, hosted private and hybrid clouds, managed applications and compliance, are rapidly emerging as key differentiators for managed infrastructure service providers, as is an increasingly complex and interdependent landscape of partnerships, channels and technologies. The best positioned service providers are those that can meet the desire for high automation, rapid provisioning and complex enterprise needs while retaining high-touch service delivery and/or serve strategic regional and vertical markets. This includes examination and implementation of open source alternatives such as OpenStack and CloudStack. Growth overall is very strong, with revenues projected to reach \$94.5bn in 2017.

The vast bulk of general IT revenues for vendors and for the market overall has traditionally come through the channels and ecosystems of partners, distributors and resellers that engage customers directly. The cloud provider and cloud technology market will be no different, but channels for cloud computing will have specific attributes and differences from the traditional. Some resellers are better developed than others – and some providers are much better positioned than others to help spread the cloud around. We will examine the emerging channel opportunities and partner programs for cloud and how they are displacing traditional models.

While we expect the continued dominance of the incumbent established vendors, we do think network service providers (NSPs) with a cohesive story encompassing colocation, hosting, mobility and utility-cloud computing, integrated with secure IP connectivity to bring to market application-specific performance guarantees from the network core to edge, will compete successfully. However, recent evidence shows that NSPs are increasingly looking to exit the real estate business by selling off physical datacenter assets. Cloud infrastructure providers are teaming up with connectivity partners to enable direct connections between enterprise and cloud resources. These services will increase in popularity, but enterprises will also start to take more advantage of automated interconnection platforms from their multi-tenant datacenter (MTDC) providers as those companies seek to leverage the combined presence of multiple cloud providers and network connectivity providers in their datacenter properties.

Service providers are subject to the work of lawmakers worldwide, and to the ways in which those laws interact across borders (especially service providers operating internationally). 451 Research's coverage of internet governance and lawmaking looks at emerging issues likely to impact the service provider market, the constituencies involved in those discussions, and the potential impact of those decisions on the internet infrastructure market.

As businesses that deal in the technology that exists between the telecommunications and content layers of the internet, infrastructure service providers are subject to the laws and regulations that govern both. From ongoing debate surrounding patent and copyright law, to the FCC's decisions on Net neutrality, the US National Telecommunications and Information Administration's (NTIA's) proposed handoff of the Internet Assigned Numbers Authority (IANA) and the regulatory work of the Internet Corporation for Assigned Names and Numbers (ICANN), service providers have a stake in the outcomes of a range of regulatory and legislative work.

Managed Infrastructure Providers

2014 was the year that saw the competitive landscape redrawn by the major tech vendors and hyperscale providers, and 2015 was the rush to stake out territory in newly available enterprise IT budgets. In 2016, competitive consolidation and additional offerings of managed applications were keys for provider growth. This is a very large and fast-growing opportunity that 451 Research will track by key trends, including advances in service delivery, portfolio and regional opportunities.

As IaaS and highly automated provisioning for IT infrastructure become the default deployment methods, two significant new market segments within managed infrastructure and cloud have emerged with strategic importance. Bare metal cloud refers to physical servers orchestrated and automated just like virtual IaaS, but delivering more direct control and efficiency. Key players have begun offering this as a differentiated cloud infrastructure. Likewise, hosted private cloud refers to provisioning specific, segregated pools of physical infrastructure that users can control directly, without sharing hardware with others. These are two fast-growing revenue segments within the overall market sizing for managed infrastructure and cloud, and 451 Research will examine that opportunity and addressable market.

A key emerging service for managed infrastructure providers is highly automated, highly complex, bespoke and self-service compliance. Typically, compliant hosting is a premium service that requires high levels of staffing and organizational work to help users meet audits and stay in compliance for a variety of industry and regulatory regimes. Some providers are applying the same techniques of software-driven, highly automated and transparent management to allow customers to meet compliance needs with minimal additional support, via automated portals and reporting that can drastically reduce this otherwise high-cost (and high-value) aspect of service delivery.

Another class of managed infrastructure providers is demonstrating a viable way to stay competitive and grow at market pace in the face of stiff competition from hyperscale cloud providers and newly reenergized IT outsourcers. Providers that can realize increasingly highly automated service portfolios as well as premium support and customer relationships are able to retain high margins on hardware and charge a premium, but they must also continue to innovate new ways to improve their customers' operations and experience.

Web and Application Hosting

In addition to tracking specific individual market trends, 451 Research's coverage of the Web and application hosting market tracks market size and overall growth via our Market Monitor service, along with the strategic positioning of leading providers in the space. Broad industry trends influencing all businesses in the space include consolidation, which is often driven by the largest players.

Pricing is trending downward in the Web hosting space. However, most of the service providers in the market consider average revenue per user to be a key performance metric, and look to sell additional services to entry-level users. A key strategic move here is the bundling of additional higher-value services around specific use cases (e-commerce is a good example) to drive additional upfront spending. Because of this, Web and application hosting providers are regarded as a strong reseller channel by software providers targeting SMB customers.

Our coverage of these general market trends tracks M&A activity, significant pricing moves, bundling strategies and new software reseller opportunities for hosting providers.

E-commerce is one of the most significant specialized use cases for hosting infrastructure. It represents a growth area for infrastructure providers and a higher-value tier of users, and e-commerce workloads tend to have exacting requirements for performance, uptime and specific supporting technologies (SSL certificates, a means of accepting payment). 451 Research coverage of the e-commerce hosting space will focus on the development of new technologies and their adoption by hosting providers, strategies for product bundling and pricing trends.

During the last decade, WordPress has evolved from a blogging tool into the most popular platform for web publishing, particularly among designers and developers. It is the most commonly deployed application on web hosting infrastructure and, according to the WordPress Foundation, powers about 24% of websites worldwide. Because it is free, open source software, however, DIY WordPress deployments don't create any direct revenue for hosting providers. A group of specialized managed hosting services has emerged over the last several years, offering users managed application hosting for WordPress, on optimized infrastructure and with expert support. Traditional hosting providers are responding by introducing managed WordPress hosting products and optimized infrastructure platforms of their own. These are positioned as premium products and offered at premium prices, enabling hosting providers to turn the application into a source of revenue. 451 Research's coverage of managed WordPress hosting will focus on the service providers driving innovation in the space, identify the tiers of services available to users, highlight user requirements and outline operational best practices for hosting WordPress.

During the last several years, the entry-level Web workload has moved toward the services of pure-play SaaS web presence providers. These companies offer a drag-and-drop website building experience in the browser, are seeing rapid growth and significant investment, and are spending heavily on marketing. Traditional hosts are taking cues from these providers in how they position and deliver Web presence.

Content Delivery, Web Performance and Interconnection

Growing dependence on Web-based applications is highlighting the need to ensure application performance and availability. The CDN market has been targeting R&D and VC money at further improving performance for dynamic content. One area of particular momentum is mobile networks. A variety of startups are targeting mobile content delivery specifically, and 451 Research will cover these companies and their potential impact on the CDN market – and on the services wireless carriers provide – in the coming months. Other areas of research focus include the use of CDN infrastructure through APIs – an area that hasn't always been a strong suit for vendors in the market – and a closer examination of vendors in the DNS infrastructure services space and how they fit into the application performance landscape.

The increasing use of hybrid and public cloud services for enterprise applications will help pave the way for use of other hybrid on-premises and cloud-based services. The market for distributed denial of service (DDoS) protection services, in particular, is an example of an area with growing interest in a hybrid of on-premises and cloud-based security. 451 Research coverage will focus on cloud-based DDoS protection services, and areas of both partnership and competition with security vendors that are moving into the cloud.

Better performance for cloud applications involves more than just throwing more servers at a problem. The network is a critical element of the performance equation. Interconnection services within a datacenter are one potential tool. Are there differences between providers that should matter to customers? 451 Research is tracking interconnection services from the major providers and following the emerging flavors of services, including direct-to-cloud and cloud-based peering platforms, to see how networking services are adapting to the cloud.

Note

In addition to the market dynamics listed above, the Service Providers Channel will continue to collaborate with fellow 451 Research analysts across other channels as we assess the wider implications of the increased industry focus on Service Providers. Numerous vendors overlap areas of our research, and some have multiple products in different technology domains.

Upcoming Research on Service Providers

Voice of the Enterprise (VotE)

Combining 451 Research's industry-leading analysis with an extensive network of more than 50,000 senior IT professionals, Voice of the Enterprise tracks adoption across thousands of organizations and exposes the major opportunities for enterprises, IT vendors, suppliers and investors. Each quarter's survey has a focused theme, as indicated in the table below.

	Workloads and Key Projects	Organizational Dynamics	Vendor Evaluations	Budgets & Outlook
Hosting	Q1	Q2	Q3	Q4

Technology & Business Insight Reports

M&A Outlook 2017: Multi-Tenant Datacenter, Hosting and Managed Services

Analysts: Kelly Morgan, Penny Jones, Agatha Poon, Jeff Paschke, Brenon Daly

Publication Date: Q1 2017

Even after a recent record tech M&A run, dealmakers still had ambitious shopping plans in 2016. Across the globe, tech acquirers announced \$500bn worth of transactions in the just-completed year, ranking 2016 as the second-highest annual total since the internet bubble burst. More than any other year, 2016 saw an expansion of buyers beyond the 'usual suspects,' as old-line companies got caught up in transforming their businesses through M&A.

CDN Global Market Overview 2016

Analyst: James Davis

Publication Date: Q1 2017

CDN market growth topped 17% in 2013, and another strong year is on tap as companies add to their security services portfolio. Investors have taken notice and started pumping money in to the market again. How will the market adapt in 2016 and beyond?

Managed Services North America

Analyst: Aaron Sherrill

Publication Date: Q2 2017

This report provides an overview of key trends in the managed security services market in North America. It discusses current and long-term trends and opportunities, highlighting in some cases how providers are shaping those trends. It provides a 451 Research Market Map™ of the competitors in the market, profiles major players and identifies innovative businesses.

Global Hosting Market

Analyst: Rory Duncan

Publication Date: Q3 2017

This report takes an inclusive look at the managed IT infrastructure market, composed of the managed hosting segment, as well as IaaS and dedicated hosting. It breaks out revenue estimates and key trends for various segments of infrastructure covered by 451 Research, with a special focus on managed hosting as the largest segment of external infrastructure consumed by the market.

Interconnection

Analyst: Jim Davis

Publication Date: Q3 2017

As cloud usage takes off, data production grows exponentially, content pushes closer to the edge, and end users demand data and applications at all hours from all locations, the ability to connect with a wide variety of players becomes ever more important. This report introduces interconnection, its key players and business models, and trends that could affect interconnection going forward.

Navigating the Future of Cloud Computing in APAC

Analyst: Agatha Poon

Publication Date: Q3 2017

A new era of cloud computing is dawning, with cloud-infused services changing every aspect of our lives. As Asian providers look to capitalize on what 451 Research Market Monitor estimates as a \$35bn opportunity for global cloud computing in the next five years, they begin to innovate to bring new user experience front and center while working with technology vendors for joint development and integration opportunities. In this report, we present the latest Asia-Pacific cloud computing forecasts and discuss pace-setting trends shaping the state of play in both developed and developing Asia. We analyze the competitive landscape in fast-evolving Asian economies and discuss cloud adoption and business cases for a new generation of cloud users.

OpenStack Pulse 2017

Analysts: Al Sadowski, Jay Lyman

Publication Date: Q3 2017

This report offers an annual 'pulse check' on the OpenStack business models that have evolved over the past four years, including quantitative market-sizing data, regional perspectives, use cases and customer-survey feedback. It covers a variety of software vendors and service providers that are leveraging OpenStack both internally and for commercial offerings, and provides up-to-date insight into the developing OpenStack distribution battles and ongoing debates about functionality and overall project governance.

Preview: Trends in Service Providers 2018

Analyst: Kelly Morgan

Publication Date: Q4 2017

This report provides a view of key trends that will affect the market in 2018. It details the top trends, likely impact and recommendations for each.