Magic Quadrant for Cloud Infrastructure as a Service and Web Hosting

Cloud infrastructure as a service has evolved primarily from the Web hosting market, but the cloud has created new opportunities for cost savings and business agility. The market is immature, the services are all unique and evolving rapidly, and vendors must be chosen with care.

WHAT YOU NEED TO KNOW

For the past five years, the Web hosting market has been evolving toward on-demand infrastructure provisioned on a flexible, pay-as-you-go basis; the majority of hosting customers now obtain at least some of their infrastructure on demand, and most new hosting contracts include on-demand services. The market for traditional Web hosting services, especially for Internet and intranet Web content and applications, continues to grow.

However, during the past two years, the introduction of cloud computing offerings has radically accelerated innovation in the hosting market. Cloud infrastructure as a service (IaaS) has significantly expanded the use cases that IT buyers are considering outsourcing. This evolution has quickly changed the vendor landscape, bringing many new entrants to rapid prominence, as well as decreasing the relevance of hosters that have failed to make this shift. Cloud IaaS is still an emerging market, but we forecast that, by the end of 2011, these services will account for almost 25% of the overall hosting market (excluding colocation and mass-market hosting).

Although Gartner's IT buyer clients continue to generate a significant volume of inquiries related to traditional Web hosting, the bulk of their inquiries is now focused on sourcing cloud compute IaaS. As a result of this shift, we have changed our inclusion and evaluation criteria for the Magic Quadrant. We have based our 2010 evaluation on the three most common use cases for outsourced hosting, as follows:

- Self-managed IaaS, for cost-effective agile replacement of traditional data center infrastructure.

- Lightly managed IaaS, for customers who wish to primarily self-manage but want the provider to be responsible for routine operations tasks.

- Complex managed hosting, for customers who want to outsource operational responsibility for the infrastructure underlying Web content and applications.

Choose a provider based on its ability to provide a cost-effective architecture and high-quality customer experience for your envisioned use case.

Gartner

MAGIC QUADRANT

Market Overview

Cloud IaaS is the future of outsourced hosting. Every company that offers Web hosting — including carriers, outsourcers and independent Web hosters — is being forced to evolve its business. New service providers that are specifically focused on cloud IaaS continue to enter the market. On-demand, pay-as-you-go capacity has become the norm, but customers frequently sign multiyear commitments to obtain discounts, and multiyear agreements are common for managed services. The bulk of IaaS will be delivered on virtualized fabrics, but it will continue to be common to have hybrid architectures that combine virtualized resources for scale-out tiers with dedicated servers for resource-intensive needs such as databases.

There are currently two broad types of customers seeking outsourced hosting. The first type are traditional Web hosting customers, who have a website, Web application or enterprise application that they want to host externally. This is often a tactical decision that is specific to that particular need, and not a strategic outsourcing decision. Such a need is often complex and mission-critical, and may involve cutting-edge technologies in which the customer lacks expertise. The second type of customer is new: they are interested in what cloud computing is able to do for their business. These customers are likely to begin with a pilot project — often a test and development environment — but intend, over time, to try to move some, if not all, of their data center

Figure 1. Magic Quadrant for Cloud Infrastructure as a Service and Web Hosting

Source: Gartner (December 2010)

As of December 2010

infrastructure into the cloud. They are likely to make a tactical decision about their initial deployment, but are also hoping to find a long-term strategic partner for their infrastructure needs.

The market for traditional Web hosting is quite mature. Most established Web hosters have very high levels of operational reliability and excellent reactive support, and the best providers also have the ability to manage complex projects and proactively meet the customer's needs. By contrast, the market for cloud IaaS is highly immature. While cloud IaaS reliability is still good — in fact, it is generally engineered to higher levels of availability than traditional dedicated hosting architectures — the rapid evolution of technology through the stack, from hardware to applications, is driving a level of change that provides a management challenge for service providers as well as customers. Providers may release new

IaaS platform features several times a quarter, making it difficult to choose a vendor based on its current features. Service and support are highly variable from provider to provider, and an individual provider's service capabilities may be different for cloud IaaS than for traditional Web hosting.

We expect the two markets to converge fully within five years, but most providers today offer traditional Web hosting and cloud IaaS on two different platforms. The technologies of both platforms may be substantially similar, but the cloud platform usually represents a new, cutting-edge implementation free of the burden of the provider's legacy. Usually, the cloud platform is used to deliver service for customers who want primarily to self-service, or who have multiple applications that they want to manage under a single aegis. Most of these vendors currently offer customers the ability to
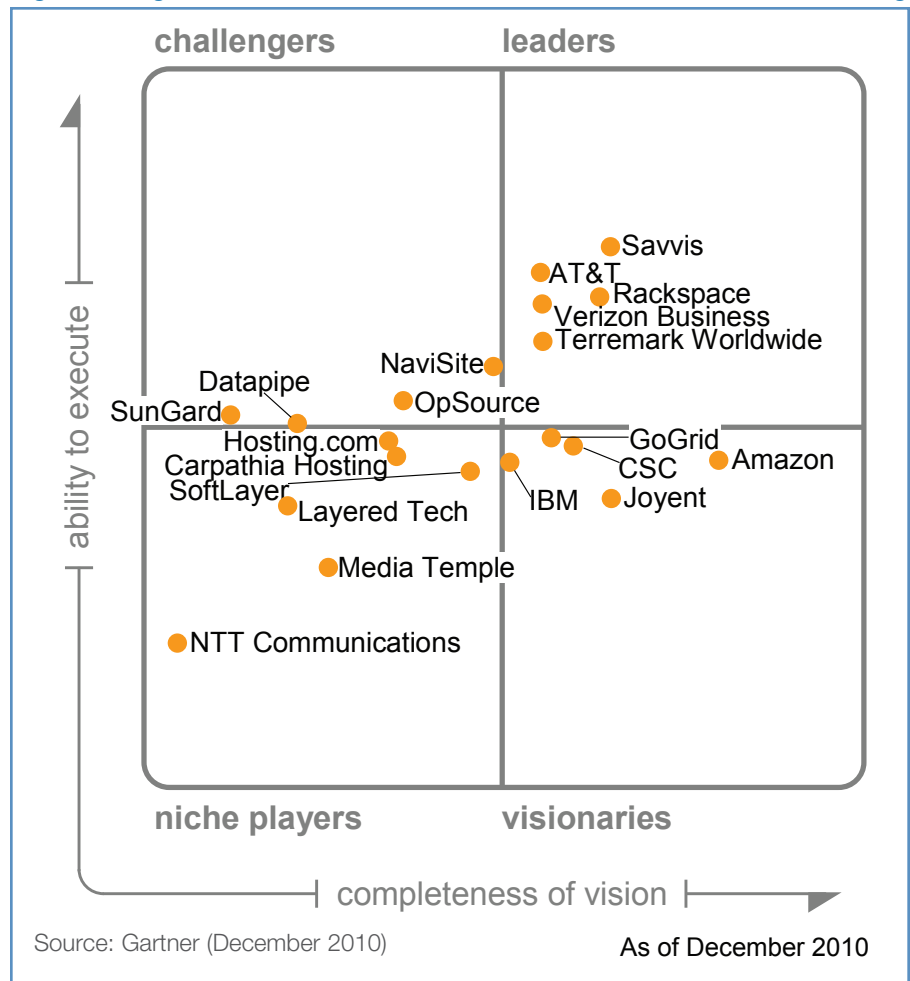
blend cloud IaaS, traditional managed hosting and colocation into a single environment. Over time, we believe that most providers will offer a single unified architecture with multiple tiers of service quality; the multiple platforms are an artifact of today's state of immature underlying technology.

This is a time of both great opportunities and great risks for the service providers in this market. New entrants are altering the landscape, and established hosters that previously lagged the market have been able to make bold investments in an attempt to catch, or even overtake, more established competitors. Most providers are investing aggressively in technology innovation and exploitation, and we believe that mergers and acquisitions will become more commonplace as vendors seek to decrease their time to market, obtain engineering expertise with new technologies, and build market share. However, users must exercise greater caution in this rapidly evolving market, particularly as it is difficult to predict which vendors will be good long-term bets.

The Use Cases

We have evaluated the service providers based on their ability to meet the most common use cases among Gartner's clients — primarily midsize businesses and large enterprises, as well as technology vendors of all sizes. The use cases are:

- **Self-managed IaaS**. These customers seek self-provisioned, self-managed, cost-effective infrastructure as an alternative to buying their own equipment and placing it into colocation or into their own data center. This may serve basic needs such as test and development environments, but may also serve highly complex applications that customers want to self-manage. Cloud IaaS provides cost savings, capacity flexibility, rapid provisioning, simplified configuration and management, and ease of automation.

- **Lightly managed IaaS**. These customers seek all the capabilities of self-managed IaaS, but do not want to be entirely responsible for operations. Usually, they want management through the operating system level, including OS patch management, and often want managed security services as well. While many of these management functions are likely to be offered as automated services in the future, at present, they generally require some human intervention by the service provider. Lightly managed IaaS is overwhelmingly the most common scenario that Gartner's clients are trying to source.

- **Complex managed hosting**. These customers have traditional Web hosting needs. Customers of this type occupy a spectrum of complexity, scale and rate of change. Mainstream customers have: corporate websites and interactive marketing; dynamic applications such as intranet portals, collaboration, supply chain management and e-channel customer relationship management (e-CRM); modest-scale e-commerce; and hosting for small software-as-a-service (SaaS) vendors. High-end customers typically have rich Internet applications with a high degree of complexity and rate of change, plus the need for highly scalable, flexible capacity; these customers usually have highly dynamic sites, such as complex e-commerce, SaaS applications, online gaming and "Web 2.0" businesses.

No single service provider in this market does everything well. Moreover, while all vendors in this Magic Quadrant serve a global clientele, their data center footprints and locations vary significantly. As a result, it is important to match your use case with a vendor that excels in serving that particular type of need. Smaller providers may do one thing extraordinarily well, but not have a comprehensive set of services that lets them serve a broad array of use cases. It is also crucial to note that a Magic Quadrant shows the overall position of a vendor in a market — it is not a rating of a specific service; the service features and functionality constitute only about a third of the rating, and a vendor's position in the Magic Quadrant should not be used to determine the relative quality of different services for a given use case. More than ever before, it is crucial to look beyond the Magic Quadrant Leaders when selecting a vendor. The vendor that is perfect for your needs may be a Niche Player.

Market Definition/Description

The terms "Web hosting" and "cloud infrastructure as a service," as they are used in this Magic Quadrant, refer to a specific set of products and services: colocation, dedicated hosting, utility hosting and cloud IaaS. "On-demand hosting" refers to utility hosting and cloud IaaS. "Cloud IaaS" combines the "virtual data center (VDC) hosting" and "cloud hosting" categories from our 2009 Magic Quadrant, as these two segments of the market have converged.

- **Colocation** includes Internet data center facilities, plus network bandwidth and associated WAN and LAN equipment.

- **Dedicated hosting** includes facilities and network, plus dedicated server hardware. Managed and professional services (see below) may be optionally included.

- **Utility hosting** includes facilities and network, plus a utility computing platform. This must be a shared environment using hypervisor-based virtualization, offering on-demand, flexible capacity. This may be offered in conjunction with dedicated infrastructure. Managed and professional services may be optionally included.

- **Cloud IaaS** includes facilities, network, and on-demand, multitenant elastic computing capacity, which can be either dedicated or virtualized. The capacity can be shared or private. "Elastic" means that customers must be able to scale both up and down on demand, without a contractual commitment to fixed capacity. A graphical user interface (GUI) or API must be provided for self-administration of the "virtual data center." Managed and professional services may be optionally included.

Optional managed and professional services include:

- Management of the server OS.

- Management of infrastructure software, such as Web server software, application servers and database servers.

- Management of storage, including backup and recovery.

- Management of security.

- Management of other network devices, such as application delivery controllers.

- Professional services associated with hosting, such as architecture, capacity planning, performance testing, security auditing and data center migration.

Hosting services, including cloud IaaS, are described in greater detail in "Web Hosting and Cloud Infrastructure Prices, North America, 2010." Cloud IaaS is detailed in "Cloud Infrastructure as a Service: An Essential Overview." For additional guidance and tools, see also "How to Select a Cloud Computing Infrastructure Provider" and "Toolkit: Comparing Cloud Computing Infrastructure Providers."

Some customers choose a fully managed service, in which the service provider manages everything except the application code. Others prefer to choose from a menu of a la carte management services; for instance, some need just database administration services, while others want junior-level system administration tasks, such as patch management, handled for them but want to do all the complex work themselves. The number of customers who want to self-manage is increasing rapidly; these IT managers want to take advantage of the cost-efficiencies of a provider's scale and automation tools, but do not want to relinquish control. Your choice should depend on your needs and IT capabilities.

Hosting, as used in this Magic Quadrant, is distinct from both data center outsourcing and remote infrastructure management. The services are productized and standardized, although customization is available. Moreover, cloud IaaS in this context is "cookie cutter"; this is separate and distinct from cases where the service provider simply virtualizes infrastructure or builds a custom cloud on behalf of a customer. There is no transfer of either assets or personnel, and the service is always offered in the hoster's data center. It is also distinct from infrastructure utility services, although there are overlaps between the markets. Finally, this Magic Quadrant covers only compute IaaS; thus, it does not cover cloud storage vendors such as Nirvanix, nor does it cover platform as a service (PaaS), such as Google App Engine or Microsoft Windows Azure.

Inclusion and Exclusion Criteria

To appear in this Magic Quadrant, vendors had to meet the following criteria (as of June 2010):

- They must sell on-demand hosting as a stand-alone service, without the requirement to bundle it with application development, application maintenance or other outsourcing.

- Their services must be enterprise-class, offering 24/7 customer support (including phone support), SLAs, and the ability to scale an application beyond the capacity of a single server.

- They must have significant market presence, as indicated by Web-hosting-related revenue of at least $50 million in 2009, or an on-demand hosting revenue run rate of at least $25 million in 2010.

- They must have demonstrable global presence. They must have reference customers in North America, Western Europe and Asia. They must have data centers in North America as well as either Western Europe or Asia, or they must derive at least 20% of their hosting revenue from customers outside the region in which they have their headquarters.

Vendors Considered, but Not Included

This Magic Quadrant is global, but nearly all the service providers are based in the U.S. This is a reflection of the way the market is evolving. Cloud services are more nascent in Europe and Asia, and many of the service providers there offered neither utility hosting nor cloud IaaS in early 2010. Moreover, many leading European and Asian vendors did not have the data center presence or international revenues to qualify for this Magic Quadrant; notable regional service providers include BT, Colt, Orange, SingTel and Tata Communications. Some European hosting vendors are covered in "Magic Quadrant for Data Center Outsourcing and Utility Services, Europe," although that is an adjacent market with different evaluation criteria.

Some providers did not qualify for this Magic Quadrant due to their inability to demonstrate sufficient revenues to qualify for inclusion. The following are some of the smaller vendors we considered, but were not able to include.

BlueLock. BlueLock is a small, but rapidly growing, service provider based in Indianapolis, Indiana. It focuses on cloud IaaS for midsize businesses and the enterprise. It is one of the five initial partners for VMware's vCloud Datacenter Services, along with Terremark Worldwide, Verizon Business, Colt and SingTel. Although BlueLock lacks sufficient revenue for inclusion in this Magic Quadrant, we believe that BlueLock is competing successfully against the other providers that are being formally evaluated. BlueLock offers both private and public cloud IaaS, a spectrum of managed services, and a service called CloudConnector, which allows customers to manage both their own internal IaaS and BlueLock's IaaS within their own vSphere control panel.

Connectria. Connectria, based in St. Louis, Missouri, is a small provider of both simple and complex hosting. It has an extensive, cafeteria-style portfolio of hosting services including managed applications. Its recent foray into VMware-based public and private cloud IaaS is primarily focused on traditional enterprises that want fixed monthly costs and managed services.

Virtual Ark. Virtual Ark is a small service provider with its headquarters in Adelaide, South Australia, with primary operations in the U.S. and Europe. It specializes in SaaS enablement and delivery for independent software vendors (ISVs). It does not have its own cloud infrastructure; rather, it provides a unified platform for managing applications on other providers' infrastructure clouds, including Amazon Elastic Compute Cloud (EC2), Rackspace Cloud Servers and Terremark's Enterprise Cloud.

Virtustream. Virtustream is a small service provider, based in Washington DC, focused on cloud IaaS. Originally a consultancy with specializations including VMware and SAP, Virtustream developed its own VMware-based cloud IaaS platform, called xStream. Divided into tiers of quality, xStream is able to support everything from test and development environments to continuous-

Leaders

Leaders have proved they have staying power in this market, can frequently innovate on their existing products and can be relied on for enterprise-class needs. They have proved their technical competence and ability to deliver services to a wide range of customers. They address multiple use cases well.

New managed hosting customers should sign two-year contracts with these companies. Satisfied customers renewing a contract with one of these firms should sign a three-year deal. Cloud IaaS customers should buy these services on demand, or in contracts of one year or less.

Challengers

Challengers have a track record of delivering good service capabilities, but they are trailing the market's evolution. They are typically companies that have solid traditional Web hosting services, but have not been aggressive in pushing into cloud services.

New managed hosting customers should sign two-year contracts with these companies. Satisfied customers renewing a contract with one of these firms should sign a three-year deal. Cloud IaaS customers should buy these services on demand, or in contracts of one year or less, and exercise caution, as these vendors likely have not proved themselves in cloud services.

Visionaries

Visionaries have an innovative and disruptive approach to the market, but their services are new to the market and are unproven. Visionaries have an early-mover advantage in providing cloud services, as well as road maps that may make them Leaders in the future.

Because the business of Visionaries can change radically in a short period, we recommend that customers buy these services on demand, or in contracts of one year or less.

Niche Players

Niche Players are typically specialists with more limited product portfolios, or emerging vendors. They may serve one use case particularly well, and may be better than a more generalized vendor in their area of specialty.

New and renewing customers of stable, narrowly focused Niche Players should sign a two- or three-year contract. New and renewing customers of emerging Niche Players whose businesses are still rapidly evolving should buy services on demand, or in contracts of one year or less.

If you are using managed services, be wary of making short-term, tactical choices, as it can be inconvenient and expensive to change providers.

Vendor Strengths and Cautions

Amazon

Amazon is a cloud IaaS-focused vendor with a very pure vision of highly automated, inexpensive, commodity infrastructure, bought without any commitment to a contract. Its paid-by-the-hour compute offering is the Elastic Compute Cloud (EC2), a Xen-based infrastructure; it also offers cloud storage, cloud CDN and a number of PaaS-like services.

Strengths

- Amazon is a thought leader; it is extraordinarily innovative, exceptionally agile and very responsive to the market. It has the richest cloud IaaS product portfolio, and is constantly expanding its service offerings and reducing its prices.

- Amazon has a very strong partner ecosystem; many software vendors have specially licensed and packaged their software to run on EC2, easing deployment and eliminating some of the headaches associated with licensing software to run in the cloud.

- Amazon provides full API access to its infrastructure, emphasizing this over portal capabilities. The API is supported by many third parties that provide associated management tools; we recommend also evaluating RightScale and VMLogix LabManagerCE when evaluating Amazon's services.

- Amazon has by far the largest pool of capacity, which makes it one of the few infrastructures that are suitable for intensively "bursty" workloads, such as scientific computing, modeling and simulation, and other applications that may require short-term provisioning of hundreds of servers at a time. Amazon also offers specialized infrastructure options for high-performance computing.

- Recommended use: Scale-out computing; self-managed IaaS for test and development.

Cautions

- Amazon does not offer any managed services. As it expands its service portfolio, it is adding offerings that automate some aspects of infrastructure management, such as its Relational Database Service for MySQL. However, today, these services do not provide the core basic functions of the lightly managed IaaS use case.

- Amazon is the only evaluated vendor that does not also offer the standard options of colocation, dedicated nonvirtualized servers (often used for databases), and private non-Internet connectivity (although Amazon will negotiate peering). These components are critical for many customers, who need hybrid, not pure cloud, environments.

- Amazon has the weakest cloud compute SLA of any of the evaluated competing public cloud compute services, even though its uptime is actually very good. Most providers offer 99.99% or better, with many offering 100%, evaluated monthly, with service credit capping at 100% of that monthly bill. Amazon offers 99.95%, evaluated yearly, capping at 10% of that bill, and requires that at least two availability zones within a region be unavailable.

- Amazon is a price leader, but it charges separately for optional items that are often bundled with competitive offerings. Prospective customers should be careful to model the costs accurately, especially network-related charges. Support is not included — it is a 10% to 20% uplift to the price, and it is geared primarily toward technically knowledgeable, expert users.

- Amazon's offering is developer-centric, rather than enterprise-oriented, although it has significant traction in large enterprises. Its services are normally purchased online with a credit card; traditional corporate invoicing must be negotiated as a special request. Prospective customers who want to speak with a sales representative can fill out an online form to request contact; Amazon does have field sales and solutions engineering. Amazon will negotiate and sign contracts known as Enterprise Agreements, but customers often report that the negotiation process is frustrating.

AT&T

AT&T is a global telecommunications carrier with a long track record of leadership in the hosting market. AT&T offers colocation, managed hosting on dedicated hardware as well as its VMware-based Synaptic Hosting platform, cloud IaaS on its Synaptic Compute as a Service (CaaS) platform, cloud storage and a CDN.

Strengths

- AT&T has a very strong corporate commitment to cloud computing, and has the broadest and deepest vision of any global carrier. It has an ambitious and comprehensive road map of services that are highly integrated with its network capabilities.

- AT&T is a leader in complex managed hosting, with very strong technical competence reflected in both solutions engineering and operations, and an excellent customer portal. It is one of the vendors most competent at handling large-scale deals (equivalent to more than 50 physical servers).

- AT&T's Synaptic platforms are derived from technologies obtained through the acquisition of USi, an application hosting provider, which was fully integrated into AT&T. AT&T thus has extensive experience supporting complex enterprise applications, such as the Oracle E-Business Suite, in virtualized environments.

- Recommended use: Self-managed IaaS for Web-based applications; lightly managed IaaS; complex managed hosting; enterprise application hosting.

Cautions

- AT&T is often inflexible in both sales and service, and support is often reactive.

- Although the sales process for Synaptic CaaS is usually quick, the sales process for other AT&T hosting services can be difficult, complex and slow. AT&T is attempting to streamline the sales process, and has created prepackaged Synaptic Hosting and Managed Hosting configurations that can speed the quoting and deployment process for such customers.

- Customers who need to connect their hosted infrastructure to a non-AT&T network should ensure that AT&T contractually agrees to the interconnection.

Carpathia Hosting

Carpathia Hosting is a small independent Web hoster with a focus on the midmarket and the government vertical, and an emphasis on compliance solutions. It offers colocation, managed hosting, Xen-based cloud IaaS, and cloud storage.

Strengths

- Carpathia's primary differentiator is around compliance, particularly with the Federal Information Security Management Act (FISMA), Department of Defense Information Assurance Certification and Accreditation Process (DIACAP), Health Insurance Portability and Accountability Act (HIPAA) and Payment Card Industry Data Security Standard (PCI DSS). Carpathia also has certification and accreditation (C&A) services for managing compliance life cycles.

- Carpathia offers both private (dedicated) and public (shared) cloud services, along with community cloud, which allows multiple customers (such as multiple government agencies) to share a single infrastructure but still have individual customer control over their portion of the environment.

- Carpathia's standard cloud solutions are based on Citrix Xen, and it has a strong partnership with Citrix Systems. It is trying to differentiate itself by offering enterprise-class cloud solutions at infrastructure prices that are comparable with those of price-leaders, such as Amazon. However, Carpathia has a strategic commitment to being hypervisor-agnostic, and will offer non-Xen-based custom cloud services as well.

- Carpathia is one of the few providers that currently offer autoscaling, allowing cloud capacity to be provisioned or deprovisioned based on event triggers.

- Recommended use: Solutions that have significant compliance requirements, especially in the public sector; managed hosting with a significant cloud component.

Cautions

- Carpathia is currently focused on cloud IaaS as a platform for managed hosting services. Because it is strategically committed to offering compliant cloud solutions, however, it will also offer solutions for general-purpose data center migration to the cloud; for instance, it serves as an infrastructure provider partner in some purchase agreement awards for the U.S. Federal government's Apps.gov initiative.

- Carpathia exposes a RESTful API for its infrastructure, but this API is unique to Carpathia, and therefore has limited third-party tools support.

- Carpathia has limited brand awareness outside public-sector organizations, although it has begun significant investments in marketing to the commercial sector, and the majority of its revenue is derived from commercial customers.

CSC

CSC is a large, traditional IT outsourcer with a broad range of data center outsourcing capabilities. CSC offers managed hosting, along with VMware-based cloud IaaS.

Strengths

- Cloud computing is driving a radical reinvention of the way that CSC delivers services, including significantly broadening the range of companies that CSC targets with its offerings.

- CSC has organized its cloud offerings around a set of commonplace use cases, making it easy to fit specific solutions to customer needs.

- CSC's test and development offering is based on Skytap, which offers a set of features that provide significant value to developers, beyond just raw infrastructure. Skytap supports features such as direct integration with integrated development environments (IDEs), complex network simulation, and the ability to snapshot the state of multimachine configurations for defect-replication purposes.

- CSC has a full, very broad portfolio of services, but it is historically focused on the traditional enterprise, particularly enterprises with significant security needs, and not smaller, more agile companies.

- Recommended use: Enterprise application hosting; cloud IaaS, especially test and development.

Cautions

- CSC's new portfolio is interesting and innovative, but it is currently unproven in the market. CSC will need to establish a track record of being able to deliver successfully in an agile, flexible manner.

- CSC's service and support in hosting has historically been a weakness. The quality of account management is highly variable. Communications between different operation and product groups can be poor, leading to tasks "falling between the cracks," with no one taking ownership of customer problems and driving them to resolution. While CSC is striving for greater agility and responsiveness with its cloud offerings, it has a substantial legacy to overcome.

- CSC is using an infrastructure based on the Virtual Computing Environment (VCE) architecture, which is potentially higher cost without necessarily offering higher quality, reliability or security compared with non-VCE infrastructure.

Datapipe

Datapipe is a small, rapidly growing independent Web hoster. Datapipe offers colocation and managed hosting, along with a VMware-based private cloud IaaS called Stratosphere. It also offers managed services on top of Amazon's infrastructure.

Strengths

- Datapipe has unusually strong capabilities for a hoster of its size. It can support implementations in several global locations. It is one of the few hosters based outside Asia that can directly offer hosting in mainland China.

- Datapipe provides proactive, consistently good customer support. It is reliable in meeting its promises, including installation dates.

- In addition to offering services on its own infrastructure, Datapipe also offers managed services on top of Amazon's infrastructure, including the ability to hybridize Amazon solutions with its own.

- Datapipe's managed hosting pricing is highly competitive. The company delivers some of the best value in the industry, especially for small to midsize deals.

- Recommended use: Mainstream managed hosting; Amazon IaaS as a managed service.

Cautions

- Datapipe does not offer either utility hosting or its own public cloud IaaS.

- Datapipe's Amazon-based services are newly introduced, and unproven. Amazon offers its managed services partners highly limited insight into its infrastructure and operations.

- Datapipe has been moving aggressively upmarket for the past few years; originally focused on the SMB, it is now successfully targeting and servicing enterprise customers, but its portfolio of managed and professional services is narrower than that of the leading enterprise hosters.

GoGrid

GoGrid is a small independent service provider. Its primary focus is its Xen-based cloud IaaS service, which it offers as public cloud, private cloud and as on-premises software. It also offers managed hosting and colocation.

Strengths

- GoGrid successfully blends commodity-priced IaaS with hybrid hosting services. The full extent of GoGrid's managed services portfolio is available on, and in conjunction with, its cloud; most managed hosters offer only a subset of their managed and professional services in their cloud environment.

- GoGrid has industry-leading SLAs that include 100% availability, along with enterprise-class service and support, and a very user-friendly portal.

- GoGrid's cloud business model supports both "pay by the hour with a credit card" access as well as traditional enterprise contracts. Its prices are highly competitive.

- GoGrid's software is developed entirely in-house. This allows it to innovate quickly, and to drive down its costs, but it also provides significant long-term challenges in competing against providers that can devote significant resources to R&D.

- Recommended use: Self-managed IaaS; lightly managed IaaS; managed hosting where there is a significant cloud component to the solution.

Cautions

- GoGrid offers individual user accounts, rather than hierarchical role-based access control in a unified virtual data center. Customers who need this capability will need to deploy their own virtual lab management software.

- GoGrid is a Xen-based provider but its target market includes enterprises, which are primarily VMware-based and may want vCloud Director support.

- GoGrid has its own API; that API is supported by a limited number of third-party tools, although GoGrid is pursuing a strategy of broader interoperability. RightScale's tools do work on GoGrid's cloud, and we recommend evaluating them as part of a GoGrid cloud evaluation.

- Although GoGrid has significant international business, its cloud is not deployed in data centers outside the U.S. It has entered into a partnership with Equinix for global expansion in 2011.

Hosting.com

Hosting.com is a small independent Web hoster with an SMB focus. It offers colocation and managed hosting, along with VMware-based cloud IaaS.

Strengths

- Hosting.com has both public and private cloud solutions, with optional managed services for both types of environment. Notably, automated patch management is an optional service.

- Hosting.com's cloud has several features that are particularly attractive for cost-effective disaster recovery solutions, including the ability to store server images and pay only for storage without compute resources, and a "parking" feature that allows a virtual machine (VM) to run in inactive mode for a fraction of the cost of a normal running VM.

- Hosting.com is creating a portal-based service catalog. The first such offering is preconfigured Microsoft SharePoint 2010 as a managed service, including the ability to deploy it as a virtual appliance in its cloud.

- Hosting.com offers contracting flexibility that uses minimum revenue commitments, but allows customers to move freely between its offerings.

- Recommended use: Self-managed IaaS; lightly managed IaaS; simple managed hosting; cloud-based disaster recovery.

Cautions

- Hosting.com is in the process of moving upmarket. Its portfolio of managed and professional services is still limited, and it is still building a track record.

- Although Hosting.com has significant international business, it does not have data centers outside the U.S.

IBM

IBM is a highly diversified technology company and its cloud computing strategy extends across its portfolio of products and services. It offers colocation (on a limited basis), managed hosting and cloud IaaS.

Strengths

• IBM uses its utility computing platform, called Managed Services Infrastructure Services, as the underlying foundation for both its managed services and its application management portfolio. It also offers a number of on-demand options for its disaster recovery services.

• IBM IaaS is sold in a use-case-specific way. The Smart Business Development and Test cloud service is integrated with Rational and Tivoli tools. The Computing on Demand service is aimed at customers with supercomputing needs.

• IBM has many professional services related to cloud computing, including assessment, planning and migration services.

• IBM leverages its broader technology portfolio when delivering infrastructure services, including cloud computing, without restricting customers to using only IBM technologies.

• Recommended use: Self-managed IaaS for test and development, or high-performance computing; very complex managed hosting; enterprise application hosting.

Cautions

• We see IBM's cloud strategy as currently focused on SaaS, as well as enabling enterprises and service providers to build clouds of their own, rather than focused on cloud IaaS, but it is highly visible in the market due to IBM's broader **strengths** as a vendor. IBM's current IaaS offerings serve to demonstrate the capabilities of its cloud-building technologies, and it is exploring where the market goes before committing to a long-term IaaS strategy.

• We believe that IBM is focused on cloud IaaS solutions that bring higher value by tightly integrating IBM's software capabilities with on-demand infrastructure. IBM's current IaaS offerings are targeted at test and development and supercomputing, and are not a good fit for customers with general-purpose compute needs.

• IBM offers very high-end hosting services, and has been moving further and further upmarket in the past several years. Its hosting deals closely resemble more general data center outsourcing deals. It is generally suitable primarily for the largest, most complex and customized deals (equivalent to 50 physical servers or more). IBM uses partners to deliver smaller managed hosting configurations, which can increase

client communication issues and impair quality control; these customers are not delivered via IBM's own infrastructure, although the solutions are architected by IBM.

• IBM is premium-priced, especially in hosting, where it is typically priced far above competitors. Moreover, it sells managed services on what is primarily a time-and-materials, rather than an all-inclusive, basis. IBM hosting contracts are lengthy and complex, and frequently include inflexible terms and conditions that shift the risk onto the client and away from IBM. SLAs are customized to each individual contract; IBM's basic SLA for hosting is weak, and better SLAs generally cost more money.

Joyent

Joyent is a small independent service provider that is solely focused on cloud services. It primarily provides public cloud IaaS via Solaris Containers called SmartMachines, and Windows and Linux VMs supported via KVM. It can also provide SmartMachines on dedicated servers, and will allow colocated equipment for customers who need it. Joyent also offers SmartPlatform, a JavaScript PaaS based on Node.js.

Strengths

• Joyent is developing an integrated cloud technology stack, and its infrastructure offerings verge into the platform space.

• Joyent has a strong emphasis on application performance, and it takes a holistic approach to its delivery, including integrating network-based acceleration.

• Joyent develops its own technology in-house, which is based on a kernel forked from OpenSolaris. Dell is an OEM for Joyent's SmartDataCenter software. Joyent partners with Joyent-based service providers in regions where it does not have service, such as mainland China.

• Recommended use: Self-managed IaaS for Web-based applications, particularly where scalability is important.

Cautions

• Joyent's customer support is excellent, and it can reach a depth for which other providers would require a managed services contract. However, Joyent does not formally offer managed hosting, which leaves customers who need that level of support dependent on goodwill rather than having a contractual obligation for service.

• Joyent's professional services are limited and focused on high-scalability projects.

• Joyent's technology approach is entirely unlike that of any other vendor in the market. It introduced its non-Solaris-based offerings in October 2010, and thus does not yet have a track record of delivering Windows- and Linux-based services.

- Joyent intends to derive its future revenue from a mix of selling its software and offering cloud services directly. This potentially introduces challenges in company focus and investment, in a fashion similar to Loudcloud (which was eventually broken up, with the service part sold to EDS, and the software part becoming Opsware and sold to HP).

Layered Tech

Layered Tech is a small independent Web hoster with an SMB focus. It offers colocation, self-managed dedicated hosting, managed hosting and cloud IaaS (Linux-only, and based on CA Technologies' 3Tera AppLogic).

Strengths

- Layered Tech's DEFCON service bundles provide a clean and logical way for customers to opt into increasing levels of managed services, at very competitive prices.

- Layered Tech's customer service is relatively responsive and proactive, compared with that of other providers of self-managed and simple managed hosting.

- Layered Tech has invested substantially in automation, and offers fast provisioning as well as API accessibility.

- Layered Tech has a very customizable customer portal, with an attractive interface and a competitive array of features.

- Recommended use: Simple managed hosting.

Cautions

- Layered Tech is moving upmarket, but it primarily serves SMBs. It has a limited portfolio of managed services, and it offers few professional services.

- Layered Tech's public cloud IaaS service is a low-end, virtual private server (VPS)-style service, but it includes managed services.

- Layered Tech's private cloud IaaS service uses CA's 3Tera AppLogic software, which is a Xen-based cloud stack. While it provides an attractive interface, enterprise customers are more likely to want to use VMware vCloud Director for similar needs. Layered Tech does offer virtualization options based on either VMware or Hyper-V in its managed hosting environment.

Media Temple

Media Temple is a small independent Web hoster with an emphasis on serving content creators. It has a diverse but integrated product portfolio that spans shared, virtual private and dedicated hosting, as well as cloud IaaS. Its offerings are built on top of software from Parallels.

Strengths

- Media Temple's service offerings emphasize seamless scalability, and generally have very low entry price points.

- Media Temple's competitively priced services are usually bought on demand, without a contract.

- Media Temple understands its core target market of interactive agencies, advertising agencies, media companies and social media publishers.

- Recommended use: Marketing microsites where low-cost elastic scalability is a requirement.

Cautions

- Media Temple offers managed hosting — "(cx)" — to a limited number of customers, generally those with particularly demanding requirements. It does not offer professional services.

- Many of Media Temple's offerings are essentially mass-market shared hosting "on steroids."

- Media Temple's reliance on Parallels technology limits its attractiveness to enterprises.

- Although Media Temple has significant international business, it does not have data centers outside the U.S.

NaviSite

NaviSite is an independent Web hoster with a focus on the midmarket and on application hosting. It offers colocation, managed hosting and VMware-based cloud IaaS.

Strengths

- Although NaviSite still offers hosting on dedicated servers, it increasingly uses its cloud IaaS platform, called NaviCloud, as the heart of all its service offerings.

- NaviSite can offer its managed application services on NaviCloud, reducing its provisioning times for complex applications from several weeks to as little as an hour.

- NaviCloud is one of the few cloud IaaS platforms to offer autoscaling based on event triggers, and its autoscaling includes not only provisioning additional VMs, but also altering the resources allocated to existing VMs.

- Recommended use: Self-managed IaaS; managed hosting; enterprise application hosting.

Cautions

- Although NaviSite's service and support are generally above average, with good responsiveness, they are primarily reactive, not proactive. The quality of service does vary with the individual offering, particularly when managed application services are in use.

- NaviSite is a moderate-size provider, but it is trying to spread its resources over a very broad set of service offerings. However, NaviSite's strategic focus has improved greatly in the past year; it is now focused on the cloud, and has divested itself of its noncore businesses.

NTT Communications

NTT Communications is a global telecommunications provider with hosting services targeted at multinational companies. It offers colocation, managed hosting, its own VMware-based private cloud IaaS, a VMware-based public cloud IaaS via a white-label partnership with OpSource, and its own CDN.

Strengths

- NTT has a global carrier's breadth of product portfolio, and it is willing to take on highly customized engagements. Its target customers are multinational companies.

- NTT executes well in its target deal profile — large, complex and customized, for a global customer with needs spanning multiple data centers in different regions.

- NTT's hosting services were previously fragmented under NTT America, NTT Europe and NTT Asia, but have now been brought together into a single unified portfolio and platform.

- NTT's prices are very competitive in high-end complex deals.

- Recommended use: Complex managed hosting, where a global data center footprint and network are important requirements.

Cautions

- NTT is highly conservative in its approach to the hosting business. It is focused on private cloud computing, not public cloud computing, although it is building its own multitenant VMware-based cloud IaaS.

- NTT's investment in standardized, "industrialized" services and automation lags behind the market. It depends on people, not tools, to get things done. As it launches new services and updates its technology platform, it is standardizing its processes globally and improving its efficiency.

- NTT has a history of underinvesting in the hosting business, coupled with "revolving door" management. Although the conditions at NTT appear to have stabilized, it needs to establish a new and better track record in the industry.

- Despite being a very large global carrier with well-established international divisions, NTT has highly limited brand visibility outside its home region of Japan.

OpSource

OpSource is a small independent Web hoster that has historically had a focus on serving the SaaS market, but has shifted its focus to the enterprise, and is now beginning to focus on being an OEM cloud partner for carriers. It offers managed hosting and cloud IaaS.

Strengths

- OpSource's managed hosting services are competitively priced, and its cloud IaaS platform is very aggressively priced, despite being an enterprise-class offering.

- Through 2009, OpSource was focused solely on targeting SaaS providers. Its rich suite of offerings for that market includes not only infrastructure, but also an on-demand billing platform, custom application management and help desk support.

- OpSource's 100% availability SLA is among the best in the industry.

- Recommend use: Managed hosting for SaaS providers; self-managed IaaS.

Cautions

- Although OpSource has improved the consistency of its service delivery and support, the more customized the solution, the greater the challenges encountered in delivery.

- OpSource is transitioning to being a more general managed hosting provider, but its customer base still consists primarily of SaaS providers.

Rackspace

Rackspace is an independent Web hoster, and the market share leader in managed hosting. It offers simple managed hosting (Rackspace Managed), complex managed hosting (Rackspace Intensive) and Xen-based cloud IaaS (Cloud Servers). It also has a PHP and .NET-based cloud PaaS (Cloud Sites, formerly known as Mosso), e-mail and SharePoint hosting, cloud storage (Cloud Files) and cloud-based backup (JungleDisk).

Strengths

- Rackspace has long set the bar for customer service in the industry, with proactive, high-touch service and support. While no service provider is perfect, and Rackspace continues to experience growing pains, it has the industry's best practices in customer service, along with an excellent service culture.

- Rackspace is exceptionally responsive during the sales process, and has a reliable service installation process; it generally does a good job with solutions engineering and delivery.

- Rackspace's prices for complex managed hosting are below the market average. For the rest of its portfolio, pricing is market-comparable for similar offerings.

- Rackspace has "open sourced" its cloud development, in conjunction with NASA, via the OpenStack project. This should help Rackspace build an ecosystem around its cloud; moreover, it will offer an Amazon-compatible API, along with Rackspace's own API. There is RightScale support for Rackspace's cloud, and we recommend including it as part of an evaluation.

- Recommended use: Self-managed IaaS; managed hosting, especially where customer service is a priority.

Cautions

- Rackspace's cloud IaaS is not yet enterprise-class; it significantly lags behind its two most significant competitors (Amazon has a superior feature set, and GoGrid has better features and a full suite of managed services). Furthermore, it is a Xen-based provider but its target market includes enterprises, which are primarily VMware-based and may want vCloud Director support.

- Rackspace is best when handling Web-centric environments, rather than traditional enterprise applications (such as ERP). Service is best when the solution falls within Rackspace's standard product portfolio, not one-off arrangements.

- Rackspace does not offer utility hosting. It does offer Rackspace Private Cloud, where dedicated servers are virtualized with VMware, and customers pay a flat fee for the hardware plus a usage fee for virtual capacity.

- Rackspace's cloud offerings are still separate and distinct from its managed hosting. Its service approach differs between its Managed and Intensive service levels, and in its Cloud division. It has begun to do some hybridization (Cloud Connect) for customers who have both cloud servers and dedicated servers with Rackspace, and expects to make its Managed service level generally available on its cloud in 2011.

Savvis

Savvis is an independent Web hoster, with a significant market share and track record of leadership in colocation and managed hosting (including utility hosting on its Virtual Intelligent Hosting platform). Savvis' product portfolio also has VMware-based IaaS (its Symphony suite of offerings), proximity hosting and network services.

Strengths

- Savvis' product portfolio is one of the broadest and deepest in the industry, and is technically well executed. Its cloud IaaS offerings are particularly diverse; it offers utility hosting and several different flavors of private and public cloud, tiered by quality level.

- Savvis has highly competent solutions engineering, with expertise in designing solutions that scale, and very good operations. It is a leader in managing very complex customers, with high rates of change, and large-scale deals (those with more than 50 physical servers).

- Savvis has one of the best customer service portals in the industry.

- Savvis' service and support are generally above average. Service delivery and customer support for large, complex configurations have improved significantly in the past year.

- Recommended use: Self-managed IaaS; complex managed hosting; enterprise application hosting.

Cautions

- The diversity of Savvis' product portfolio can lead to customer and sales force confusion.

- Savvis has not fully integrated its cloud offerings with its managed services; you cannot simply get Savvis' managed services portfolio on top of its public cloud IaaS.

- Savvis has built an enterprise-class cloud IaaS with broad, deep security features but, as a result, its offering is more expensive than those of most of its competitors.

- Savvis' services are typically priced at a premium to the market.

SoftLayer

SoftLayer is an independent Web hoster. It provides: self-managed dedicated hosting; Citrix Xen-based public cloud IaaS (CloudLayer); private cloud IaaS (Virtual Enterprise Rack) using VMware, Citrix Xen, Microsoft Hyper-V or Parallels Virtuozzo; cloud storage; and a cloud CDN in partnership with Internap. Its November 2010 acquisition of ThePlanet added colocation and managed hosting to its portfolio.

Strengths

• SoftLayer is a thought leader in automated, highly standardized infrastructure services, provisioned on demand. Its services allow customers to obtain cloud flexibility and agility without needing to share hardware.

• SoftLayer has an extremely comprehensive portal, along with an open API. SoftLayer's customers typically use the portal extensively, self-servicing rather than filing service requests.

• SoftLayer supports a wide range of virtualization technologies for private cloud infrastructures.

• Recommended use: Self-managed IaaS; self-managed hosting.

Cautions

• SoftLayer, prior to acquiring ThePlanet, did not offer managed or professional services. It is keeping ThePlanet's existing managed hosting customers who are using standard configurations, and expects to relaunch managed services in 2011.

• SoftLayer automates everything it can and, as a result, its operational policies are rigid and it does not support nonstandard configurations.

SunGard

SunGard is a large, traditional IT outsourcer with a focus on business continuity solutions. It offers colocation, managed hosting and VMware-based cloud IaaS.

Strengths

• SunGard has deep and broad expertise in business continuity. In recent years, it has expanded into more general infrastructure solutions.

• In a market where many providers are limiting supported applications and platforms, SunGard continues to take on more complex configurations from clients, including legacy systems.

• SunGard also provides professional services around the cloud, such as assessment services.

• Recommended use: Enterprise application hosting.

Cautions

• SunGard's pricing is average, but its service delivery and customer support are below average. SunGard is making efforts to improve the quality of support.

• SunGard's solutions engineering is weak when it comes to scalable solutions and cutting-edge technologies. SunGard has difficulty dealing with frequent change.

• SunGard's cloud approach is very conservative and lacks differentiation. Its approach to marketing and selling its cloud offerings seems tentative.

• SunGard's cloud offerings currently use different platforms in different geographic regions (North America is VCE; Europe is HP and IBM). It is in the process of converging, globally, on a common technology platform and set of processes.

Terremark Worldwide

Terremark Worldwide is an independent Web hoster. It offers colocation, managed hosting (including utility hosting on its Infinistructure platform), developer-centric public cloud IaaS (vCloud Express) and enterprise-class cloud IaaS (Enterprise Cloud).

Strengths

• Terremark is highly innovative and is very effective at exploiting new developments in technology.

• Terremark is a close VMware partner (VMware is one of its investors), and is generally first to market with VMware-based solutions. It is a certified vCloud Datacenter provider.

• Terremark is very strong in the public-sector vertical, including both civil and defense agencies. It has invested in providing compliance and audit solutions, including FISMA.

• Terremark has service in some geographies that are not served by other major hosting providers, such as South America.

• Terremark's pricing is average. However, it allows oversubscription and resource bursting in Enterprise Cloud, which may allow more efficient utilization of the infrastructure when it is used for typical enterprise data center needs.

• Recommended use: Self-managed IaaS; complex managed hosting.

Cautions

- Terremark's service and support have historically been very good. However, customers now complain that personnel seem overcommitted and stretched thin, and can no longer reliably deliver on promises made to customers.

- Terremark has historically been very willing to take on bleeding-edge technologies and unusual configurations. However, Terremark is now saying "No" to more custom requirements, and customized terms and conditions.

- Terremark's highly leveraged balance sheet and its focus on spending available resources on expanding its colocation business are inhibiting product portfolio investment and growth, and may be contributing to service woes.

Verizon Business

Verizon Business is a global telecommunications carrier with a lengthy track record in the hosting business. It offers colocation, managed hosting and cloud IaaS on its VMware-based Computing as a Service (CaaS) platform.

Strengths

- Verizon revitalized its hosting business with the mid-2009 introduction of CaaS. By default, CaaS is a lightly managed service that includes automated patch management, but customers can opt out of managed service, or opt into higher levels of managed service. It is not fully integrated with the rest of Verizon's hosting portfolio though.

- Verizon is a certified vCloud Datacenter provider. However, there are actually two CaaS platforms — the original platform launched in 2009, and a newly launched platform that supports vCloud Director.

- Multiple tiers of SLAs can support a variety of application requirements cost-effectively.

- Account management is based on the level of change in a customer's environment.

- Recommended use: Self-managed IaaS; lightly managed IaaS.

Cautions

- Verizon is in the midst of sweeping changes to service, support, processes, its service-ordering system and billing. Although we believe these changes represent marked improvements, they also make it difficult to predict the quality of service delivery.

- Customer satisfaction for CaaS is much higher than customer satisfaction with Verizon's traditional managed hosting, where the customer experience varies widely.

- Verizon's pricing for CaaS is very competitive for similar service offerings, but its traditional managed hosting is premium-priced.

- Verizon's self-provisioning on CaaS is slower than competitors by an order of magnitude.

Vendors Added or Dropped

We review and adjust our inclusion criteria for Magic Quadrants and MarketScopes as markets change. As a result of these adjustments, the mix of vendors in any Magic Quadrant or MarketScope may change over time. A vendor appearing in a Magic Quadrant or MarketScope one year and not the next does not necessarily indicate that we have changed our opinion of that vendor. This may be a reflection of a change in the market and, therefore, changed evaluation criteria, or a change of focus by a vendor.

Evaluation Criteria Definitions

Ability to Execute

Product/Service: Core goods and services offered by the vendor that compete in/serve the defined market. This includes current product/service capabilities, quality, feature sets and skills, whether offered natively or through OEM agreements/partnerships as defined in the market definition and detailed in the subcriteria.

Overall Viability (Business Unit, Financial, Strategy, Organization): Viability includes an assessment of the overall organization's financial health, the financial and practical success of the business unit, and the likelihood that the individual business unit will continue investing in the product, will continue offering the product and will advance the state of the art within the organization's portfolio of products.

Sales Execution/Pricing: The vendor's capabilities in all pre-sales activities and the structure that supports them. This includes deal management, pricing and negotiation, pre-sales support and the overall effectiveness of the sales channel.

Market Responsiveness and Track Record: Ability to respond, change direction, be flexible and achieve competitive success as opportunities develop, competitors act, customer needs evolve and market dynamics change. This criterion also considers the vendor's history of responsiveness.

Marketing Execution: The clarity, quality, creativity and efficacy of programs designed to deliver the organization's message to influence the market, promote the brand and business, increase awareness of the products, and establish a positive identification with the product/brand and organization in the minds of buyers. This "mind share" can be driven by a combination of publicity, promotional initiatives, thought leadership, word-of-mouth and sales activities.

Customer Experience: Relationships, products and services/programs that enable clients to be successful with the products evaluated. Specifically, this includes the ways customers receive technical support or account support. This can also include ancillary tools, customer support programs (and the quality thereof), availability of user groups, service-level agreements and so on.

Operations: The ability of the organization to meet its goals and commitments. Factors include the quality of the organizational structure, including skills, experiences, programs, systems and other vehicles that enable the organization to operate effectively and efficiently on an ongoing basis.

Completeness of Vision

Market Understanding: Ability of the vendor to understand buyers' wants and needs and to translate those into products and services. Vendors that show the highest degree of vision listen to and understand buyers' wants and needs, and can shape or enhance those with their added vision.

Marketing Strategy: A clear, differentiated set of messages consistently communicated throughout the organization and externalized through the website, advertising, customer programs and positioning statements.

Sales Strategy: The strategy for selling products that uses the appropriate network of direct and indirect sales, marketing, service and communication affiliates that extend the scope and depth of market reach, skills, expertise, technologies, services and the customer base.

Offering (Product) Strategy: The vendor's approach to product development and delivery that emphasizes differentiation, functionality, methodology and feature sets as they map to current and future requirements.

Business Model: The soundness and logic of the vendor's underlying business proposition.

Vertical/Industry Strategy: The vendor's strategy to direct resources, skills and offerings to meet the specific needs of individual market segments, including vertical markets.

Innovation: Direct, related, complementary and synergistic layouts of resources, expertise or capital for investment, consolidation, defensive or pre-emptive purposes.

Geographic Strategy: The vendor's strategy to direct resources, skills and offerings to meet the specific needs of geographies outside the "home" or native geography, either directly or through partners, channels and subsidiaries as appropriate for that geography and market.