



2014 North American Cloud Services
Company of the Year Award



FROST & SULLIVAN



50 Years of Growth, Innovation & Leadership

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Background and Company Performance

Industry Challenges

The cloud market continues to grow at a rapid pace. Public cloud adoption among U.S. enterprises increased over 300% in 2014, with half of all businesses now using public cloud Infrastructure as a Service (IaaS) for at least one workload. For new applications, cloud-based development and delivery have become the standard.

Yet as the cloud matures, the market is splitting into two segments, with different expectations. The first segment comprises enterprise IT leaders who are looking beyond outsourced infrastructure; they now consider the cloud as the foundation for a new way of delivering IT services to the business. As such, they are demanding that providers move “up the stack” to deliver value-added services that encompass platform and software. Many cloud service providers are crowding into this market space, surrounding their basic IaaS offers with additional services that command higher price points and wallet share.

The second segment – which is in fact the original segment targeted by IaaS services – comprises Independent Software Vendors (ISVs) and application developers. They are looking for low-cost access to reliable cloud resources to facilitate development and delivery of applications. This “mass market” segment is dominated by a single provider

As such, the cloud should foster innovation, allowing the business to differentiate itself in a competitive market; it should support visibility and analytics across the environment; it should simplify administration and “grunt work” while maximizing application functionality and minimizing costs.

The problem is that, in these early days of the public cloud, few providers and services deliver on the vision. Public cloud services are generally designed to handle individual “instances,” with the customer responsible for integrating and managing across the application environment. Even the oft-touted benefits of public cloud – including scalability and usage-based pricing – may fall short of expectations. Scaling applications generally requires the customer’s manual intervention. Usage-based pricing is based on the customer’s expected capacity use, which requires the customer to be adept at capacity planning to obtain the best rates.

As enterprises increasingly turn to “enterprise-grade” private or managed cloud services piled high with value-added services to handle their production workloads, the developers and Independent Software Vendors (ISVs) who represent the greatest market opportunity for public cloud services can feel short-changed. Costs can be prohibitive for smaller or start-up businesses. The effort required to build and manage applications across multiple platforms is daunting. Furthermore, with the public cloud space dominated by a single player, competitive innovation has been curtailed.

However, in 2014, a worthy competitor emerged to shake up the public cloud market and start to offer the pricing, performance, and innovations that developers need. For the strides it made in the past year in delivering Google Cloud Platform, Frost & Sullivan bestows its 2014 Cloud Company of the Year Award to Google.

Visionary Innovation & Performance and Customer Impact of Google

Criterion 1: Visionary Scenarios through Mega Trends

Although relatively new to Infrastructure as a Service, having just made Google Compute Engine generally available in 2013, Google boasts an unparalleled pedigree in cloud infrastructure, platforms, and software. To support its massive global operations and services—including search, Web analytics, business and consumer applications, mapping, storage, mobility, and networking—the company deploys and manages more cloud infrastructure and software than perhaps any other organization in the world. With Google Cloud Platform—an integrated portfolio comprising compute, application services, storage, and big data services—the company draws on its own considerable technical and operational experience in developing, deploying, and managing applications at massive scale. As a result, Google Cloud Platform includes many unique features and capabilities that are important to developers and operations teams; for example, simplified pricing structure, auto-scaling, built-in analytics, and simplified container management.

Google Cloud Platform's strategy also reflects the company's culture of fostering innovation. The strategy is to minimize the routine and error-prone aspects of development to allow developers to create value for the business. The company says its central goal is to "build a great cloud platform for innovators." With this mission as a guide, Google continues to enhance its cloud technology, services, and pricing to support the needs of developers and business users, from the smallest start-ups to "Google-scale" enterprises.

Criterion 2: Addressing Unmet Needs

Google's leadership in so many technology arenas is testament to the company's ability to identify and respond to market needs earlier and/or better than competitors. One example in 2014 was Google Cloud Platform's anticipation of the escalating developer interest in containers, a highly efficient Linux-based technology in which a single kernel runs multiple, isolated cloud instances on a single operating system. For developers of complex applications, lightweight, low-overhead containers are preferable to virtual machines as a deployment vehicle for cloud workloads. However, until recently few resources existed in the market to support containers. Google, which runs all its operations and services within containers and launches over 2 billion containers per week, drew on its own operational experience to launch Google Container Engine, a service designed for developers building new applications in the cloud that is currently in alpha test. Furthermore, the company gained rapid support from the developer and IT communities with its launch of Kubernetes, an Open Source container management and orchestration system that allows developers to

easily define container clusters and schedule tasks across all the instances. Leading IT service providers, including Microsoft, VMware, IBM, and RedHat, have joined the Google-led Kubernetes community to contribute code.

In launching Container Engine and Kubernetes, Google hit the market faster than its competitors, who are still developing their container-based services.

Criterion 3: Customer Experience

As part of its strategic mission to make it easier for developers to create and launch innovative applications, Google ensures that its services are simple to use, while still providing maximum flexibility. Because Google was a cloud user (of its own infrastructure) before it was a cloud service provider, the company has a good basis for understanding what customers are looking for in the cloud, and to continually enhance its services to deliver an optimal experience. For example, after launching Compute Engine, the company noted that customers running production workloads were achieving limited efficiencies from their virtual machines; far less than the productivity achieved by Google's own engineers. This realization spurred the company to ultimately launch Google Container Engine and Kubernetes, which simplify and automate development, deployment, and management of applications. Further enhancing the customer experience is that the Google Cloud Platform runs on the same infrastructure as Google's own operations, which means that users benefit from the inherent efficiencies and performance of Google's data centers and network.

Criterion 4: Customer Purchase Experience

Public cloud services are, by design, easy to purchase, but getting the best deal can be difficult. Unlike other cloud providers, Google Cloud Platform does not require customers to reserve instances in order to get a great deal. With sustained use discounts, the longer a customer uses an instance, the more discounts he or she receives, automatically. Google also offers per-minute billing, which is ideal for batch and burst use cases.

Google goes an additional step to help businesses get started in the cloud. As part of its strategic mission to encourage innovation through Google Cloud Platform, the company has made extra effort to attract startups and small ISVs that are short on cash. A program launched in September 2014, Google Cloud Platform for Startups, allocates up to \$100,000 in Google Cloud Platform credits to qualified start-up companies. In addition, the program offers 24/7 technical support and access to Google technical personnel. To qualify, startup companies must be associated with an approved venture capital, accelerator, or incubator fund, and must meet strict funding and revenue limitations. To support the many companies that do not qualify for the program, Google offers any new customer a \$300 credit over 60 days, good for any Google Cloud Platform product.

Google Cloud Platform's competitors support startups primarily through their standard offer set, including free usage tiers, augmented by Web-based educational resources.

Criterion 5: Price/Performance Value

Most public cloud service providers focus on price, and the industry has become accustomed to seeing price reductions several times a year. Google is no exception. In fact, Google says cloud pricing should mimic Moore's Law, with prices decreasing exponentially as the cost of hardware capacity decreases. As such, the company lowered its prices across its product line twice in 2014, with decreases ranging from 10% to nearly 80%.

At the same time, Google has diverged from the industry with a simplified pricing scheme for its infrastructure and platform services that better meets the way most customers use the cloud. Google calculates usage based on the initial 10 minutes, followed by 1-minute increments, in contrast to competitors that round all usage up to the next hour. In addition, as noted, Google introduced "sustained use" discounts, which automatically provide discounted rates for long-running workloads, without requiring an upfront term or usage commitment.

Google offers several examples of companies that benefit from the simplified pricing structure:

- "Cloud-heavy" companies with a steady-state cloud workload (e.g., SaaS providers)
- Enterprises that are looking for budget predictability
- Start-ups that have unpredictable workloads but require price elasticity.

Google's competitors in the mass market public cloud continue to focus primarily on low hourly rates that can be costly for sustained workloads. Alternatively, they offer reserved instances, which require term and usage commitments, for sustained workloads.

Criterion 6: Brand Equity

Google is in an enviable position in the volatile cloud market. Because it is relatively late to the public cloud, the company is perceived as an underdog in the battle against the dominant players. Yet, in many other segments of the technology industry, including collaboration, search and analytics, and geospatial technology, Google is the dominant player. The combination enables Google to leverage its unparalleled market presence and technical expertise while benefiting from its position as a fresh entrant in the cloud market.

Despite its late start in the public cloud market, Google is taking a smart approach to establishing its presence. The company has leveraged its brand, its ecosystem, and its deep relationship with the developer community in a steady stream of communications and events designed to highlight and build excitement around its cloud services. The company held two well-received developer events in 2014, where company executives articulated the company's cloud strategy, announced enhancements to services, and showcased new prices in live worldwide broadcasts.

Market response to Google's entry is generally positive, with the market appearing to relish a worthy opponent to battle the incumbents. While Google has a long way to go to threaten its competitors' market share, the company has the size, infrastructure, technical expertise, and market presence to change the cloud landscape.

Conclusion

As the cloud market evolves, a new generation of developers is identifying new ways to build and deliver software solutions, and yesterday's leading cloud service providers are not necessarily poised to deliver on their needs. Though new to market, Google has rapidly established itself as a strong contender, launching a string of innovative enhancements to Google Cloud Platform—innovations that are as monumental as the Kubernetes container orchestration system that has won support from leading technology companies and innovations that are as small as public cloud pricing based on 1 minute increments rather than the industry-standard 1 hour increments. With enhancements such as these supporting its mission to "make the cloud better for innovators" as well as the company's unmatched scale, Google is well positioned to lead the market into the next iteration of cloud.

With its strong overall performance, Google has earned Frost & Sullivan's 2014 North American Cloud Services Company of the Year Award.

Significance of Company of the Year

To win the Company of the Year award (i.e., to be recognized as a leader not only in your industry, but among your non-industry peers as well) requires a company to demonstrate excellence in growth, innovation, and leadership. This kind of excellence typically translates into superior performance in three key areas: demand generation, brand development, and competitive positioning. These areas serve as the foundation of a company's future success and prepare it to deliver on the two criteria that define the Company of the Year Award (Visionary Innovation & Performance and Customer Impact). This concept is explored further below.



Understanding Company of the Year

As discussed above, driving demand, brand strength, and competitive differentiation all play a critical role in delivering unique value to customers. This three-fold focus, however, must ideally be complemented by an equally rigorous focus on visionary innovation to enhance customer value and impact.

Key Benchmarking Criteria

For the Company of the Year Award, we evaluated two key factors—Visionary Innovation & Performance and Customer Impact—according to the criteria identified below.

Visionary Innovation & Performance

- Criterion 1: Addressing Unmet Needs
- Criterion 2: Visionary Scenarios Through Mega Trends
- Criterion 3: Implementation Best Practices
- Criterion 4: Blue Ocean Strategy
- Criterion 5: Financial Performance

Customer Impact

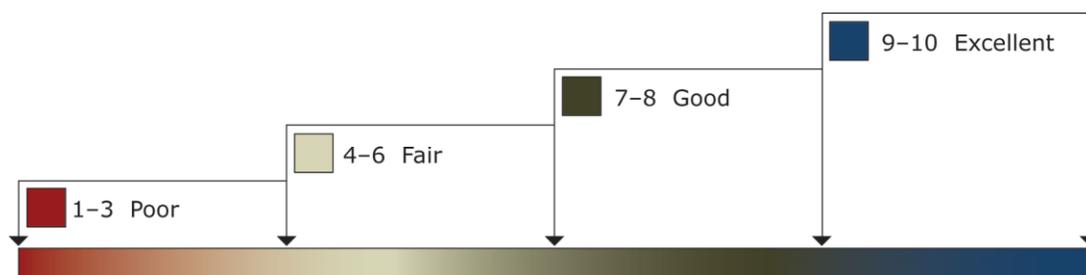
- Criterion 1: Price/Performance Value
- Criterion 2: Customer Purchase Experience
- Criterion 3: Customer Ownership Experience
- Criterion 4: Customer Service Experience
- Criterion 5: Brand Equity

Best Practice Award Analysis for Google

Decision Support Scorecard

To support its evaluation of best practices across multiple business performance categories, Frost & Sullivan employs a customized Decision Support Scorecard. This tool allows our research and consulting teams to objectively analyze performance, according to the key benchmarking criteria listed in the previous section, and to assign ratings on that basis. The tool follows a 10-point scale that allows for nuances in performance evaluation; ratings guidelines are illustrated below.

RATINGS GUIDELINES



The Decision Support Scorecard is organized by Visionary Innovation & Performance and Customer Impact (i.e., the overarching categories for all 10 benchmarking criteria; the definitions for each criteria are provided beneath the scorecard). The research team confirms the veracity of this weighted scorecard through sensitivity analysis, which confirms that small changes to the ratings for a specific criterion do not lead to a significant change in the overall relative rankings of the companies.

The results of this analysis are shown below. To remain unbiased and to protect the interests of all organizations reviewed, we have chosen to refer to the other key players as Competitor 2 and Competitor 3.

DECISION SUPPORT SCORECARD FOR THE COMPANY OF THE YEAR AWARD

<i>Measurement of 1-10 (1 = poor; 10 = excellent)</i>			
Company of the Year	Visionary Innovation & Performance	Customer Impact	Average Rating
Google	10	9	9.5
Competitor 2	8	8	8.0
Competitor 3	6	6	6.0

Visionary Innovation & Performance

Criterion 1: Addressing Unmet Needs

Requirement: Implementing a robust process to continuously unearth customers’ unmet or under-served needs, and creating the products or solutions to address them effectively

Criterion 2: Visionary Scenarios Through Mega Trends

Requirement: Incorporating long-range, macro-level scenarios into the innovation strategy, thereby enabling “first to market” growth opportunities solutions

Criterion 4: Implementation Best Practices

Requirement: Best-in-class strategy implementation characterized by processes, tools, or activities that generate a consistent and repeatable level of success.

Criterion 3: Blue Ocean Strategy

Requirement: Strategic focus in creating a leadership position in a potentially “uncontested” market space, manifested by stiff barriers to entry for competitors

Criterion 5: Financial Performance

Requirement: Strong overall business performance in terms of revenues, revenue growth, operating margin and other key financial metrics

Customer Impact

Criterion 1: Price/Performance Value

Requirement: Products or services offer the best value for the price, compared to similar offerings in the market

Criterion 2: Customer Purchase Experience

Requirement: Customers feel like they are buying the most optimal solution that addresses both their unique needs and their unique constraints

Criterion 3: Customer Ownership Experience

Requirement: Customers are proud to own the company’s product or service, and have a positive experience throughout the life of the product or service

Criterion 4: Customer Service Experience

Requirement: Customer service is accessible, fast, stress-free, and of high quality

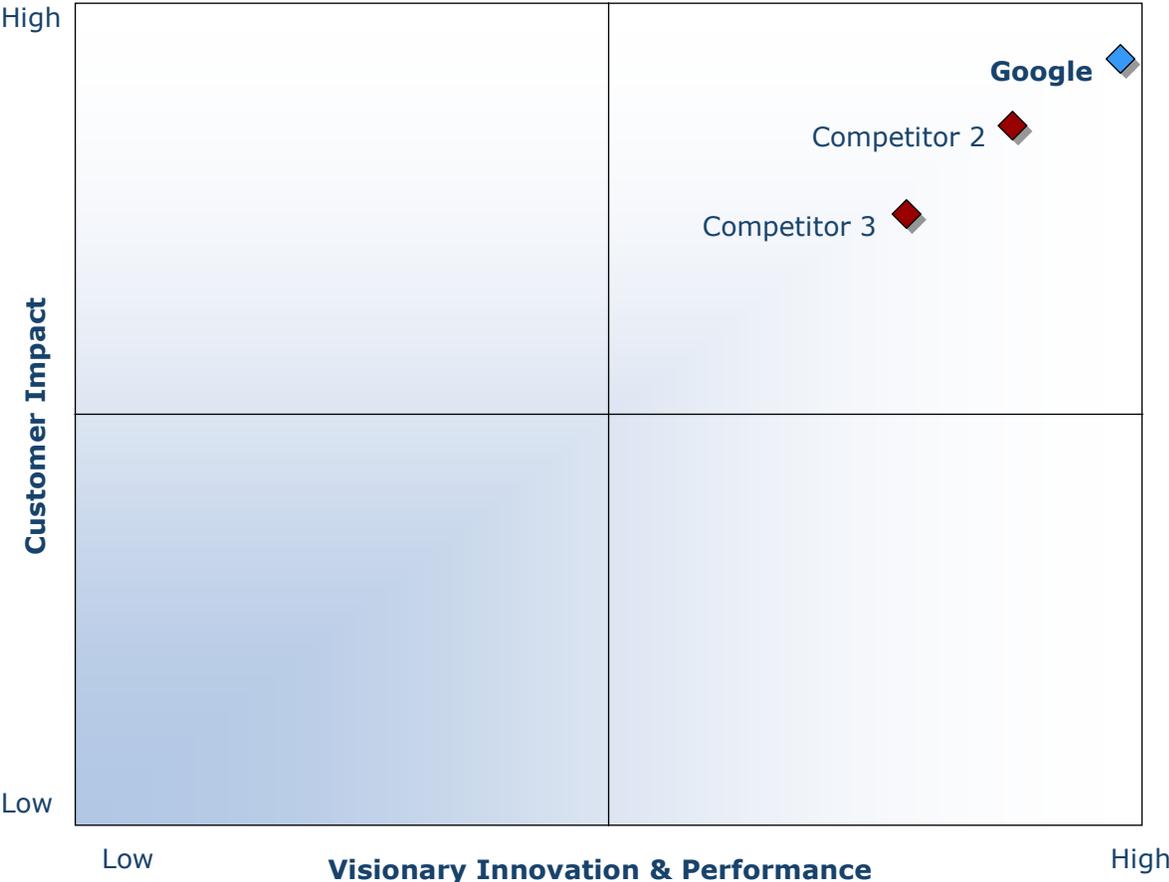
Criterion 5: Brand Equity

Requirement: Customers have a positive view of the brand and exhibit high brand loyalty

Decision Support Matrix

Once all companies have been evaluated according to the Decision Support Scorecard, analysts can then position the candidates on the matrix shown below, enabling them to visualize which companies are truly breakthrough and which ones are not yet operating at best-in-class levels.

DECISION SUPPORT MATRIX FOR THE COMPANY OF THE YEAR AWARD



The Intersection between 360-Degree Research and Best Practices Awards

Research Methodology

Frost & Sullivan's 360-degree research methodology represents the analytical rigor of our research process. It offers a 360-degree-view of industry challenges, trends, and issues by integrating all 7 of Frost & Sullivan's research methodologies. Too often, companies make important growth decisions based on a narrow understanding of their environment, leading to errors of both omission and commission. Successful growth strategies are founded on a thorough understanding of market, technical, economic, financial, customer, best practices, and demographic analyses. The integration of these research disciplines into the 360-degree research methodology provides an evaluation platform for benchmarking industry players and for identifying those performing at best-in-class levels.

360-DEGREE RESEARCH: SEEING ORDER IN THE CHAOS



Best Practices Recognition: 10 Steps to Researching, Identifying, and Recognizing Best Practices

Our awards team follows a 10-step process (illustrated below) to evaluate award candidates and assess their fit with our best practice criteria. The reputation and integrity of our awards process are based on close adherence to this process.

STEP	OBJECTIVE	KEY ACTIVITIES	OUTPUT
1 Monitor, target, and screen	Identify award recipient candidates from around the globe	<ul style="list-style-type: none"> • Conduct in-depth industry research • Identify emerging sectors • Scan multiple geographies 	Pipeline of candidates who potentially meet all best-practice criteria
2 Perform 360-degree research	Perform comprehensive, 360-degree research on all candidates in the pipeline	<ul style="list-style-type: none"> • Interview thought leaders and industry practitioners • Assess candidates' fit with best-practice criteria • Rank all candidates 	Matrix positioning all candidates' performance relative to one another
3 Invite thought leadership in best practices	Perform in-depth examination of all candidates	<ul style="list-style-type: none"> • Confirm best-practice criteria • Examine eligibility of all candidates • Identify any information gaps 	Detailed profiles of all ranked candidates
4 Initiate research director review	Conduct an unbiased evaluation of all candidate profiles	<ul style="list-style-type: none"> • Brainstorm ranking options • Invite multiple perspectives on candidates' performance • Update candidate profiles 	Final prioritization of all eligible candidates and companion best-practice positioning paper
5 Assemble panel of industry experts	Present findings to an expert panel of industry thought leaders	<ul style="list-style-type: none"> • Share findings • Strengthen cases for candidate eligibility • Prioritize candidates 	Refined list of prioritized award candidates
6 Conduct global industry review	Build consensus on award candidates' eligibility	<ul style="list-style-type: none"> • Hold global team meeting to review all candidates • Pressure-test fit with criteria • Confirm inclusion of all eligible candidates 	Final list of eligible award candidates, representing success stories worldwide
7 Perform quality check	Develop official award consideration materials	<ul style="list-style-type: none"> • Perform final performance benchmarking activities • Write nominations • Perform quality review 	High-quality, accurate, and creative presentation of nominees' successes
8 Reconnect with panel of industry experts	Finalize the selection of the best-practice award recipient	<ul style="list-style-type: none"> • Review analysis with panel • Build consensus • Select winner 	Decision on which company performs best against all best-practice criteria
9 Communicate recognition	Inform award recipient of award recognition	<ul style="list-style-type: none"> • Present award to the CEO • Inspire the organization for continued success • Celebrate the recipient's performance 	Announcement of award and plan for how recipient can use the award to enhance the brand
10 Take strategic action	Share award news with stakeholders and customers	<ul style="list-style-type: none"> • Coordinate media outreach • Design a marketing plan • Assess award's role in future strategic planning 	Widespread awareness of recipient's award status among investors, media personnel, and employees

About Frost & Sullivan

Frost & Sullivan, the Growth Partnership Company, enables clients to accelerate growth and achieve best in class positions in growth, innovation and leadership. The company's Growth Partnership Service provides the CEO and the CEO's Growth Team with disciplined research and best practice models to drive the generation, evaluation and implementation of powerful growth strategies. Frost & Sullivan leverages almost 50 years of experience in partnering with Global 1000 companies, emerging businesses and the investment community from 31 offices on six continents. To join our Growth Partnership, please visit <http://www.frost.com>.