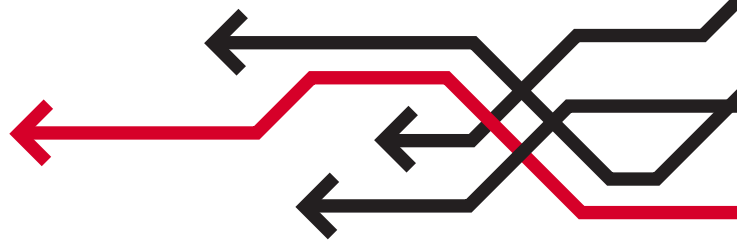


Technology & Business Insight

Thought Leadership

August 2021



Examining the Value and Opportunity in Alternative Clouds

Liam Eagle Research Director, Head of Voice of the Enterprise & Voice of the Service Provider

With their growing complexity, the hyperscale platforms are not necessarily fit for the entirety of cloud use cases. A group of alternative cloud infrastructure providers is addressing these other requirements with a set of services that emphasizes simplicity, cost-effectiveness and ease of use.

The following is an excerpt from an independently published 451 Research report, "Examining the Value and Opportunity in Alternative Clouds" released in August 2021.

To purchase the full report or to learn about additional 451 Research services, please visit <https://451research.com/products> or email 451sales451@spglobal.com.

451 Research

S&P Global

Market Intelligence

About the Author



Liam Eagle

**Research Director, Head of Voice of the Enterprise
& Voice of the Service Provider**

Liam Eagle is a Research Director and Head of Voice of the Enterprise (VotE) and Voice of the Service Provider practices at 451 Research, a part of S&P Global Market Intelligence. As head of VotE, he leads the production of 451's enterprise survey research, and with Voice of the Service Provider, he leads surveys on IT decision-making within service provider organizations.

His research focuses on service providers, with an emphasis on cloud, hosting and managed services, and how those service providers acquire, build and deliver the related technologies.

Prior to joining 451 Research, Liam was editor-in-chief at the Web Host Industry Review, where he managed a full-time editorial staff, along with dozens of freelancers and other contributors. In several years as co-chair of HostingCon, he developed the educational program for one of the industry's most highly regarded and well-attended events.

In roughly 20 years covering the technology services market, Liam has closely followed many of the trends that have shaped the business, platforms and partner ecosystems involved. He speaks frequently at client and industry events and is frequently quoted in technology and business publications. He holds a Bachelor of Journalism degree from Ryerson University in Toronto.

Table of Contents

1. Public Cloud Market Conditions, Leaders and Alternatives	1
Growing Reliance on Cloud Is Driving Market Growth	1
<i>Figure 1: The Largest Portion of Cloud Users Are Mature Users</i>	1
Cloud Market Makeup: The Hyperscalers and the Rest	2
Why Define an Alternative Cloud?	2
2. Examining the Alternatives	3
Characteristics of Credible Alternative Cloud Vendors	3
Representative Vendors and Competition in Alternative Cloud	3
<i>Prototypical Examples and Pure Plays</i>	4
<i>Figure 2: Pure-Play Providers</i>	4
<i>Portfolio Pieces</i>	4
<i>Figure 3: Companies With Portfolios Including Alternative Cloud</i>	4
<i>Enterprise-Focused Offerings</i>	5
<i>Figure 4: Companies with Enterprise-Focused Alternative Cloud Products</i>	5
Alternative Clouds and Market Performance	5
3. The Alternative Cloud Value Proposition	6
Cloud Complexity Is a Looming Challenge	6
<i>Figure 5: Cloud Skill Sets Are Among the Top IT Challenges Faced</i>	6
The Appeal of Simplicity	7
<i>Figure 6: Agility, Cost and Performance Drive Cloud Spend</i>	7
Understanding the Audience	8
4. Supporting Platforms and Technologies	9
Open Source Software	9
<i>Figure 7: Open Source Software and Tools</i>	9
Commercial Tools	10
<i>Figure 8: Commercial Tools</i>	10

5. Key Activities and Transactions 11

6. Prospects and Opportunities for Alternative Cloud 12

Opportunities To Capture Market Share12

Alternatives in the Hybrid and Multicloud Portfolio12

Figure 9: Most Cloud Users Take a Multicloud Approach. 13

7. Conclusions 13

8. Further Reading 14

9. Index of Companies 15

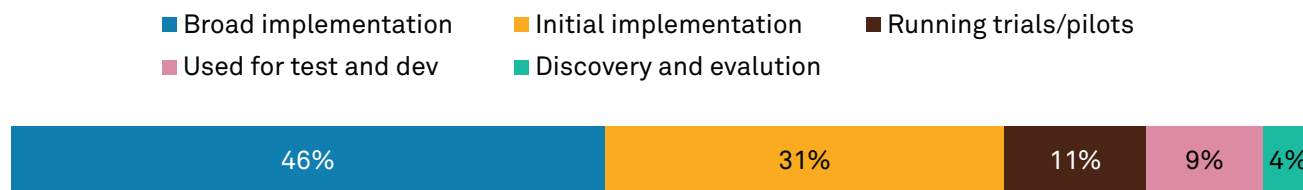
1. Public Cloud Market Conditions, Leaders and Alternatives

Growing Reliance on Cloud Is Driving Market Growth

The market for public cloud services is large and growing. 451 Research's [Market Monitor](#) service, which tracks and forecasts revenue for a range of IT service categories, estimates the IaaS market to have accounted for \$29.2bn in revenue during 2020, and expects a CAGR of 13.6% through 2025. This sizing is specific to public cloud infrastructure services and excludes the broader portfolio of advanced cloud functions, which ranges from serverless compute resources to machine learning functions, blockchain and quantum computing tools.

Today, public cloud infrastructure is a core facet of the business IT platform. As adoption of public cloud by organizations and individual users continues to accelerate, those users are also individually becoming more reliant on the cloud functions they consume. 451 Research's [VotE: Cloud, Hosting & Managed Services, Workloads & Key Projects 2021](#) study – a global study of IT decision-makers representing organizations from a broad range of sizes and types – finds that 63% of organizations are actively using public cloud, with another 8% planning to implement within 2021 (see Figure 1). Among those cloud users, 46% indicate they have broadly implemented public cloud in support of production applications. We have seen each of these cohorts expand over the last several years.

Figure 1: The Largest Portion of Cloud Users Are Mature Users



Q. Which of the following best describes your organization's adoption of IaaS/public cloud?

Base: Users of IaaS/PaaS/public cloud (n=274)

Source: 451 Research's Voice of the Enterprise: Cloud, Hosting and Managed Services, Workloads & Key Projects 2021

Further, as organizations pursue commitments to digital transformation, they become more reliant on cloud. Respondents to 451 Research's [VotE: Digital Pulse, Vendor Evaluations 2020](#) study most frequently identify cloud (59%) as the technology they expect to have a major transformational impact on their business over the next year.

Conditions imposed by COVID-19 in 2020 and beyond have only accelerated the conditions described above. Among respondents to 451 Research's [VotE: Digital Pulse, Coronavirus Flash Survey October 2020](#), more than one-quarter (27%) indicate they expect a permanent increase in reliance on cloud-based services as a direct result of the pandemic, which for many organizations is a demonstration of a key aspect of cloud's value – as an available source of compute and storage when hardware supply chains are disrupted.

Cloud Market Makeup: The Hyperscalers and the Rest

The public cloud market is dominated by a small handful of very large companies. 451 Research's Market Monitor data suggests that the five largest vendors in the public cloud IaaS market accounted for more than 76% of the revenue in 2020. Cloud observers and consumers show a comfortable level of understanding of the notion of hyperscale public cloud vendors – the small number of providers operating at such a large scale that they are able to offer essentially unlimited capacity instantly on a global basis, and that the economics of their operations are significantly different from smaller operators. Amazon Web Services (AWS), Microsoft Azure and Google Cloud Platform – and a few others – control cloud market share and cloud discourse to the extent that the decisions made by these hyperscalers broadly define what users expect from cloud services in terms of pricing, features and vendor relationship.

However, the remainder of the cloud infrastructure market (representing \$7bn in 2020) includes a large number of other vendors, including pure-play public cloud providers with noteworthy offerings, some cloud services of substantial size that are portfolio pieces of larger technology vendors (such as telcos) and a long tail of boutique or add-on services that may include hundreds or thousands of vendors. Our Market Monitor, which is not close to an exhaustive list of vendors, includes specific information on 250 individual companies reporting IaaS revenue in 2020.

Within that much longer list of services operating outside the hyperscaler tier are companies that may be succeeding or innovating in interesting ways, creating viable alternatives to the hyperscalers, but are at risk of being ignored by a cloud discourse narrowly focused on a handful of market leaders. It is in this area that we are focusing the lens of this examination of the alternative cloud market, in the interest of identifying notable vendors, important trends and emerging opportunities.

Why Define an Alternative Cloud?

As a function of their scale, their intent of providing nearly universally applicable infrastructure platforms and their general view of each other as direct competitors for the cloud market, the hyperscalers all offer similar portfolios structured in similar ways, and they all are increasingly defined by fast-growing portfolios of advanced services.

At the same time, there is a segment of prospective cloud customers for whom the largest scale is not necessarily a requirement, and the pace of innovation or the sheer breadth of features are not inherently a selling point. For the sake of cost, simplicity or other factors, this group may find its use case is best served by a vendor outside that hyperscaler segment. However, this group faces an evaluation challenge totally unlike the group that is committed to the idea of running on hyperscale cloud.

From a vendor evaluation standpoint, a company looking to engage with a hyperscaler is comparing something in the range of three to five similar options. A company or individual buyer looking for an alternative is faced with considering potentially hundreds of vendors, with a variety of business models, services and approaches to infrastructure.

It would be simple to define the alternative according to what it is not, which is the handful of hyperscalers. However, while this simple definition is technically true, it barely narrows the field, leaving it mostly useless as a meaningful designation. It fails to capture that a business looking for an alternative to the hyperscale clouds is likely to be seeking a credible alternative that offers most of the core functionality in a simpler format or at a lower cost. These businesses are likely seeking or developing criteria for establishing credibility and narrowing the field of vendors under consideration.

A useful definition for alternative cloud, therefore, will attempt to identify criteria for credibility and functionality that makes this group distinct from the longer tail of infrastructure service providers and cloud offerings, narrowing the discussion to a category that likely includes dozens, rather than hundreds, of providers.

2. Examining the Alternatives

Characteristics of Credible Alternative Cloud Vendors

It should be noted that our purpose for creating a definition for alternative cloud is to create a rubric for driving a useful discussion of a market trend we consider important. We have approached this from the lens of a cloud buyer and attempted to identify criteria for inclusion in their consideration. We are not drafting a technical set of criteria for inclusion in or exclusion from a formal category.

The criteria that mark a service for consideration as credible entrants in the alternative cloud space are based around the requirements of the cloud customer and the premise of delivering most of the value of cloud in a simpler package.

Functionality: A credible alternative cloud platform will include the core technical components a customer will expect of public cloud infrastructure platform. These will include distinct compute and storage functions (potentially including object, block and file storage), along with standard complementary infrastructure functions such as load balancing and DNS.

Components: Credible alternative cloud platforms will be built using a quality of components that is comparable to the market leading providers. This may be more complicated for a prospective customer to verify, given that the abstraction of the underlying components is built into the premise of cloud. Vendors may publicize the components of their cloud, or their quality may be more likely expressed in the form of performance and service level agreements.

Programmatic operation: For many of these services, the design of their orchestration systems or user interface is a key selling point. However, a credible alternative cloud will also offer APIs that enable resource provisioning and deprovisioning (and potentially other functions) to be executed programmatically.

Footprint: Though it may not be a major requirement of every prospective customer, to present a credible alternative to the hyperscale offerings, a cloud should offer a footprint that broadly spans geographies. This may not require complete global coverage, but it does leave purely regional offerings out of the discussion.

This may not be an exhaustive accounting of user requirements for alternative cloud, but it may illustrate a bar that services should have to clear to be included in the discussion of alternative cloud. We expect this bar will continue to rise, and the breadth of components in this description is likely to increase as new functional elements of the cloud (such as container management) continue to become standardized, expected features.

Representative Vendors and Competition in Alternative Cloud

The list of vendors that fit this outline for an alternative cloud provider likely reaches into the dozens, and there is an even wider swath of companies that doesn't quite fit or only meets some of the criteria.

In this section, we attempt to illustrate by example the variety among the companies operating in this space. Each of the companies listed fits some or all of the characteristics outlined above, even across fairly distinct and varied offerings. Examples included here are mainly based in North America and Europe, although there are alternative vendors operating in Asia that fit each of these categories.

Overall, this list may also help demonstrate the difficulty of formally outlining a category that remains fluid. Even the rough categories outlined below are not definitive or mutually exclusive, as it is possible to view some providers as straddling these lines.

Note that the examples provided are meant to be an illustrative, but certainly not exhaustive, list of alternative cloud providers. It is not intended to serve as an endorsement of any of the vendors mentioned.

Prototypical Examples and Pure Plays

There is a small group of companies that most clearly fits the description of alternative clouds. These companies are generally pure-play providers focused on delivering cloud infrastructure, and tend to have large volumes of smaller users, while also being capable of handling larger engagements (see Figure 2).

Figure 2: Pure-Play Providers

DigitalOcean	Likely the best-known example of the pure-play alternative cloud provider. It exemplifies some key characteristics of alternative cloud and core elements of the value proposition, including an emphasis on ease of use and a commitment to both supporting developers and putting the capabilities of the cloud in the hands of everyone.
Linode	Founded in 2003, Linode was an early innovator in the cloud infrastructure market, arguably serving as an example for others in what has become the alternative cloud space. The company's platform is focused on open source, simplicity and cost-effectiveness. A strong reputation among developers has helped it to grow without outside investment and with minimal marketing.
Vultr	Perhaps lesser known than some of the other alternative clouds, Vultr was founded around the same time as Linode, and has quietly developed into another credible alternative contender on the strength of what it describes as extremely effective automation and efficiency compared to its peers. Its services include a bare metal cloud offering as a point of distinction.
OVHcloud	Headquartered in France, with international operations and with a long history in managed and dedicated hosting, OVH in some ways typifies the alternative cloud premise, while also occupying a range of adjacent spaces (such as private cloud and managed services). Part of its cloud presence is built off the VMware vCloud Air business it acquired in 2017. The company is known for innovating in the design and management of its datacenters, as well as building its own server hardware.

Source: 451 Research, 2021

Portfolio Pieces

These offerings likely figure less prominently in the discussion of alternative cloud, or of cloud in general, while nevertheless being credible cloud services. They frequently arose as add-on parts of a portfolio of other hosted infrastructure services and may not be the primary offering of the company in question. They often serve as a platform from which the service provider can deliver its other services (see Figure 3).

Figure 3: Companies With Portfolios Including Alternative Cloud

IONOS	IONOS is a new brand created in 2020 out of the combination of long-tenured and well-known German Web hosting brand 1&1 Internet and the alternative cloud startup ProfitBricks (also created by 1&1's founders). The company's portfolio includes alternative cloud infrastructure services, but it delivers these alongside more typical consumer web hosting services such as domain registration website builder tools.
DreamHost	Another long-tenured consumer web hosting company, DreamHost built its DreamCompute (cloud compute) and DreamObjects (cloud storage) offerings in the fairly early days of public cloud. While the company isn't necessarily known for its cloud (it is more known for WordPress expertise, for instance), the company's cloud does serve as an effective platform upon which to build its other services (such as managed WordPress).

Source: 451 Research, 2021

Enterprise-Focused Offerings

This may be the largest segment of service providers to consider (by number of providers and likely by revenue); however, this is probably the least representative of the value proposition described in the idea of alternative cloud. These companies are more likely to consider their own cloud platforms one component of an overall portfolio, often secondary to another offering such as managed or professional services (see Figure 4). They are more likely to place the emphasis on their services ahead of infrastructure (to the extent that they often will deliver those services in connection with the hyperscale platforms).

Figure 4: Companies with Enterprise-Focused Alternative Cloud Products

Rackspace Technology	Rackspace has been both a pioneering cloud infrastructure builder and now a key partner to the hyperscalers. However, it continues to seek value in operating infrastructure of its own, having recently begun to position its cloud platform as the best place to run VMware workloads.
Lumen Cloud	Lumen Cloud is part of the larger technology portfolio of Lumen (formerly CenturyLink). It offers several types of infrastructure (bare metal, private cloud) with an emphasis on the company's edge network and datacenter capabilities.
Expedient	Expedient is one example of a former datacenter company that has built a cloud platform as a component of a larger offering. The company believes its Enterprise Cloud offers a cost-effective alternative to hyperscale within the overall mix of its hybrid and multicloud management services.

Source: 451 Research, 2021

Alternative Clouds and Market Performance

Sizing and forecasting an alternative cloud market presents a challenge because even the relatively small number of companies that fit the rough definition outlined above exhibit a wide variance with respect to growth estimates.

Data from our Market Monitor service on IaaS and some rough assumptions about the alternative cloud market has highlighted challenges with evaluating alternative clouds as a group.

To begin, evaluating part of the IaaS market against the whole effectively means evaluating it against the performance of the hyperscalers, which, as mentioned in the cloud market section of this report, represent 75% of IaaS revenue, and therefore overwhelmingly influence growth numbers. This isn't unreasonable – one of the essential questions about performance facing alternative clouds is “can you keep up with the hyperscalers?” However, this benchmark sets the bar high for growth, and for many providers, the answer is no.

Forecasting the alternative cloud segment is challenging because it doesn't move in sync. Overall, the group that can be identified as alternative cloud projects notably lower CAGR than the IaaS market as a whole. However, examining the market at a more granular level using the rough categories outlined above (pure plays, portfolio pieces and enterprise offerings) highlights some further conditions.

Specifically, the small group of companies that can be identified as pure plays suggests a CAGR equal to or slightly better than IaaS overall. The underperforming part of the market includes a large number of add-on portfolio pieces that aren't necessarily the focus of the companies that offer them, as well as in some cases the public cloud offerings of enterprise-focused companies that are in the latter stages of pivoting toward providing managed cloud services over the top of hyperscalers.

Our observations suggest that success and growth in the alternative cloud market is most often achieved by companies that make the delivery of a public cloud infrastructure product the focal point of their business. This should serve as a caution for companies considering a new entry into the alternative cloud space: a stand-alone offering or a committed pivot is better positioned for success than a toe-dipping add-on. There are multiple examples of alternative cloud experiments that have been launched and killed.

3. The Alternative Cloud Value Proposition

Cloud Complexity Is a Looming Challenge

One of the expressed objectives of the hyperscalers is to rapidly and continuously expand the portfolio of individual features on offer. The pace of innovation is a feature, and these vendors deliver consistently on this promise, rapidly releasing new services ranging from raw infrastructure building blocks to fully managed SaaS functions and multicloud control planes, while continuing to launch new regions. 451 Research's [Cloud Price Index](#) (CPI) now tracks more than two million distinct cloud services available across 176 datacenter locations worldwide.

The natural consequence of cloud complexity left unsolved by enterprises is increasing complexity that becomes more difficult to solve over time, and likely leads to resource use and cost-spiraling. The decreasing cost of certain public cloud resources (in the hyperscale area) is a mitigating factor. However, dealing with complexity remains an engineering and operational challenge facing organizations using hyperscale public cloud platforms.

This is a challenge many organizations struggle to address. Access to talent remains one of the greatest organizational roadblocks to effective use of public cloud (see Figure 5). Our [VotE: Digital Pulse, Organizational Dynamics 2020](#) study finds that the most common area of IT skills shortage among enterprises is cloud platform expertise (46%), followed by facility with cloud-native tools such as containers and serverless functions (41%).

Figure 5: Cloud Skill Sets Are Among the Top IT Challenges Faced



Q. In which of the following IT categories, if any, is your organization currently facing an acute skills shortage? Please select all that apply.

Base: All respondents (n=465)

Source: 451 Research's Voice of the Enterprise: Digital Pulse, Organizational Dynamics 2020

Complexity and potential associated cost impact are ongoing challenges for consumers of public cloud that, while solvable with effort and expertise, do a great deal to illustrate the potential value of the simplicity and reduced cost of alternative cloud offerings, even in the context of an existing deployment on public cloud.

The Appeal of Simplicity

In general, the value proposition of the alternative cloud is the same as the central value of public cloud overall. That is, it offers an infrastructure platform with likely benefits to agility, cost, performance, availability and security of the application.

As shown in Figure 6, according to 451 Research's VotE: Cloud, Hosting & Managed Services, Workloads and Key Projects 2020 study, the most common drivers of public cloud investment include agility (35% of respondents), resource scalability (34%), reduced footprint (33%), hardware savings (29%) and application performance (28%).

Figure 6: Agility, Cost and Performance Drive Cloud Spend



Q. What are the key factors needed to build a business case for IaaS/public cloud investments at your organization?

Base: Businesses using or planning to use public cloud (n=364)

Source: 451 Research's Voice of the Enterprise: Cloud, Hosting & Managed Services, Workloads & Key Projects 2020

Hyperscalers build upon these capabilities with scale, breadth of functions and a remarkable pace of new feature rollouts. However, for the organizations consuming the cloud, the previously mentioned complexity can be a barrier to achieving these outcomes. A large majority (87%) of respondents to our VotE: Digital Pulse, Organizational Dynamics 2020 study identify some type of skills gaps associated with cloud or related technology.

The alternative cloud vendors frequently take an approach that could be considered addition by subtraction, positioning their services as cloud, simplified. Users of alternative cloud platforms frequently are attracted to simplicity, which often extends to the user interface, the billing (including both straightforward pricing structure and simply lower prices), the generally smaller and simpler feature set and the overall ease of use. From the user's perspective, a benefit of this approach is a significant flattening (relative to more complex cloud platforms) of the learning curve, or a reduction in the time from starting out with the platform to being able to accomplish key objectives.

Along with emphasizing simplicity, there are areas in which the alternative clouds tend to offer more by default than their hyperscale counterparts. This frequently includes a higher level of support included with the base infrastructure service (a reflection of what's possible at a smaller scale, and a capability that may be more reflective of the level of proficiency of the core customer set). It also may include a baseline of managed services delivered along with cloud infrastructure, rather than a 100% self-service utility approach.

CONTACTS

The Americas

+1 877 863 1306

market.intelligence@spglobal.com

Europe, Middle East & Africa

+44 20 7176 1234

market.intelligence@spglobal.com

Asia-Pacific

+852 2533 3565

market.intelligence@spglobal.com

www.spglobal.com/marketintelligence

Copyright © 2021 by S&P Global Market Intelligence, a division of S&P Global Inc. All rights reserved.

These materials have been prepared solely for information purposes based upon information generally available to the public and from sources believed to be reliable. No content (including index data, ratings, credit-related analyses and data, research, model, software or other application or output therefrom) or any part thereof (Content) may be modified, reverse engineered, reproduced or distributed in any form by any means, or stored in a database or retrieval system, without the prior written permission of S&P Global Market Intelligence or its affiliates (collectively, S&P Global). The Content shall not be used for any unlawful or unauthorized purposes. S&P Global and any third-party providers, (collectively S&P Global Parties) do not guarantee the accuracy, completeness, timeliness or availability of the Content. S&P Global Parties are not responsible for any errors or omissions, regardless of the cause, for the results obtained from the use of the Content. THE CONTENT IS PROVIDED ON "AS IS" BASIS. S&P GLOBAL PARTIES DISCLAIM ANY AND ALL EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, ANY WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR USE, FREEDOM FROM BUGS, SOFTWARE ERRORS OR DEFECTS, THAT THE CONTENT'S FUNCTIONING WILL BE UNINTERRUPTED OR THAT THE CONTENT WILL OPERATE WITH ANY SOFTWARE OR HARDWARE CONFIGURATION. In no event shall S&P Global Parties be liable to any party for any direct, indirect, incidental, exemplary, compensatory, punitive, special or consequential damages, costs, expenses, legal fees, or losses (including, without limitation, lost income or lost profits and opportunity costs or losses caused by negligence) in connection with any use of the Content even if advised of the possibility of such damages.

S&P Global Market Intelligence's opinions, quotes and credit-related and other analyses are statements of opinion as of the date they are expressed and not statements of fact or recommendations to purchase, hold, or sell any securities or to make any investment decisions, and do not address the suitability of any security. S&P Global Market Intelligence may provide index data. Direct investment in an index is not possible. Exposure to an asset class represented by an index is available through investable instruments based on that index. S&P Global Market Intelligence assumes no obligation to update the Content following publication in any form or format. The Content should not be relied on and is not a substitute for the skill, judgment and experience of the user, its management, employees, advisors and/or clients when making investment and other business decisions. S&P Global Market Intelligence does not endorse companies, technologies, products, services, or solutions.

S&P Global keeps certain activities of its divisions separate from each other in order to preserve the independence and objectivity of their respective activities. As a result, certain divisions of S&P Global may have information that is not available to other S&P Global divisions. S&P Global has established policies and procedures to maintain the confidentiality of certain non-public information received in connection with each analytical process.

S&P Global may receive compensation for its ratings and certain analyses, normally from issuers or underwriters of securities or from obligors. S&P Global reserves the right to disseminate its opinions and analyses. S&P Global's public ratings and analyses are made available on its websites, www.standardandpoors.com (free of charge) and www.ratingsdirect.com (subscription), and may be distributed through other means, including via S&P Global publications and third-party redistributors. Additional information about our ratings fees is available at www.standardandpoors.com/usratingsfees.