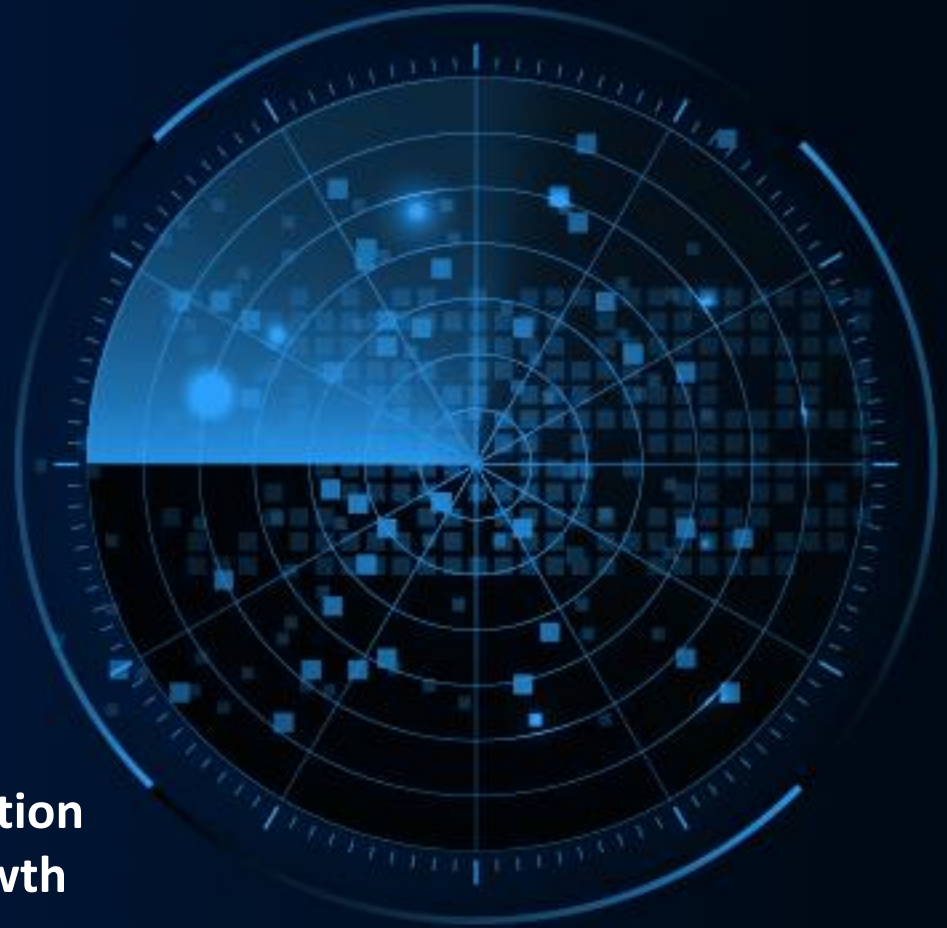# FROST & SULLIVAN

Frost Radar in the Communications Platform as a Service Market

A Measurement System to Spark Companies 2 Action (C2A)—Innovation That Fuels New Deal Flow and Growth Pipelines

Industry Overview

Market Definition

Frost & Sullivan defines Communications Platforms as a Service (CPaaS) as any cloud-based platform that enables developers to programmatically embed voice, video, chat, and messaging services within their business or consumer applications. In nearly all cases, the embedded communications and collaboration services leveraged through a CPaaS are a feature of the larger application and are rarely the primary focus of the application. For example, consumer-focused ride-sharing applications require a means for a driver and passenger to connect via SMS or a voice call. CPaaS can be leveraged to deliver the communications features of the application, enabling the developers to focus on the mission-critical aspects.

The Underlying Value Proposition of CPaaS

CPaaS solutions represent a significant departure from the way businesses of any size have become accustomed to purchasing and deploying communications. Their value proposition lies in providing a powerful toolset to make business communications applications richer and more tightly integrated within business workflows. CPaaS provides additional capabilities alongside a business's existing communications infrastructure. For example, an organization may decide that it wants to allow its customers to communicate with employees using SMS on business numbers.

Industry Overview (continued)

The Underlying Value Proposition of CPaaS (continued)

While its existing on-premises UC platform does not support SMS messaging, the business can leverage a CPaaS provider to enable text messaging as an integration or overlay of existing communications tools. In this example, the business maintains the existing relationship with its voice providers and its preferred UC vendor while leveraging a CPaaS provider to address a gap in customer interactions.

Like other cloud-based services, most CPaaS solutions offer businesses a compelling operating expense (OpEx) alternative to costly capital expenditures (CapEx) to deploy the appropriate communications and network infrastructure needed to securely support application programming interface (API)-driven voice, video, and messaging services. Also important, cloud-based CPaaS offerings are priced at published per-API call or per-minute rates, enabling businesses to pay for the exact amount of services they consume. This is a particularly compelling value proposition for organizations with varying levels of demand or seasonal spikes in business activity. The inherent scalability of cloud architectures also benefits CPaaS, enabling businesses to consume as much or as little of a provider's API-directed services as needed by their application or work process.

Industry Overview (continued)

Competitive Landscape

The early entrants in the CPaaS market were over-the-top startups, providing embedded communications services to developers at other startups. Over time, more traditional enterprises took notice of this, discovering CPaaS as a solution to solve both existing communications challenges and as the right set of tools to drive emerging digital transformation efforts within their organization.

With the enterprise as the new competitive battleground, CPaaS solutions are emerging from a wide range of business communications vendors and communications service providers. Frost & Sullivan delineates the contenders in the CPaaS market into the following categories:

- **Transactional or Pure-Play CPaaS**—As early entrants, transactional CPaaS providers led the charge in embedding on-demand voice, video, and SMS services into mobile and business applications. Most transactional CPaaS providers have adopted a pure consumption business model by offering flat-rate published pricing for each API call to their service. A consumption model enables an independent developer or development teams within an organization to quickly get started with communications integration.

- **Enterprise-grade CPaaS**—Enterprise-grade CPaaS providers distinguish themselves by promising to deliver on the more stringent requirements and expectations of large-scale deployments. For enterprises, service-level agreements (SLAs), pricing models reflective of large-scale engagements, and a higher level of customer support and professional services represent the important criteria in CPaaS provider selection. CPaaS providers that focus on the enterprise often build out their own networks to ensure that quality of service (QoS) can be maintained.

Industry Overview (continued)

- **CPaaS as Part of Broader Telco Services Portfolios**—As more businesses are incorporating CPaaS or API-driven communications as request for proposal (RFP) requirements, traditional telecommunications, video conferencing and unified communications as a service (UCaaS) providers are entering the CPaaS market, either through in-house development, with partner-led solutions, or through acquisition of pure-play CPaaS providers. With an extensive investment in IP-based communications infrastructure, incumbent and competitive carriers and hosted providers are positioning themselves to extend the value of their existing services and the convenience of a single invoice for all customer communications services.

- **Service Provider Enablement Partners**—Communications services providers acknowledge a compelling opportunity to enter the CPaaS market, but the time to develop in-house capabilities to create and manage API-driven solutions present a major obstacle to success. Several vendors are developing cloud-based CPaaS solutions that can serve as an overlay on top of the service provider's communications infrastructure. These enablement solutions allow providers to more rapidly launch CPaaS offerings to their customers, while sharing the risk with the CPaaS partner.

- **Hybrid CPaaS Offerings**—By creating a secure link between on-premises platforms and cloud-based services, UC vendors are opening up their traditional platforms to a full range of cloud services, including CPaaS. Unlike the pure cloud-based CPaaS offerings, a hybrid CPaaS provides access to a business' existing resources, such as telephony and video endpoints, telecommunications services, and corporate-managed phone numbers. It also protects the investments a business has already made in communications infrastructure.

# Industry Overview (continued)

Market Landscape

- The global CPaaS market is in a high growth stage, with many of the contenders in the market reporting high annual double-digit growth.

- The incredible growth trajectory is driven by a steady stream of innovative new features and capabilities being delivered by CPaaS providers, the addition of new providers in the market, and increased interest and adoption of API-driven communications services by customers of all sizes.

- Mergers and acquisitions within the larger enterprise communications market are common, and the CPaaS segment is no exception. For example, several UCaaS providers have already acquired CPaaS providers to expand their own network/regional coverage, as well as bringing programmable communications capabilities to their platforms.

- The use cases for programmable communications are limited only by customer imagination. As a "builder" mindset permeates organizations already undertaking digital transformation efforts, CPaaS capabilities will quickly become a checklist requirement for any communications product or service.

The Frost Radar Communications Platform as a Service

The Frost Radar

Communications Platform as a Service

Source: Frost & Sullivan   8
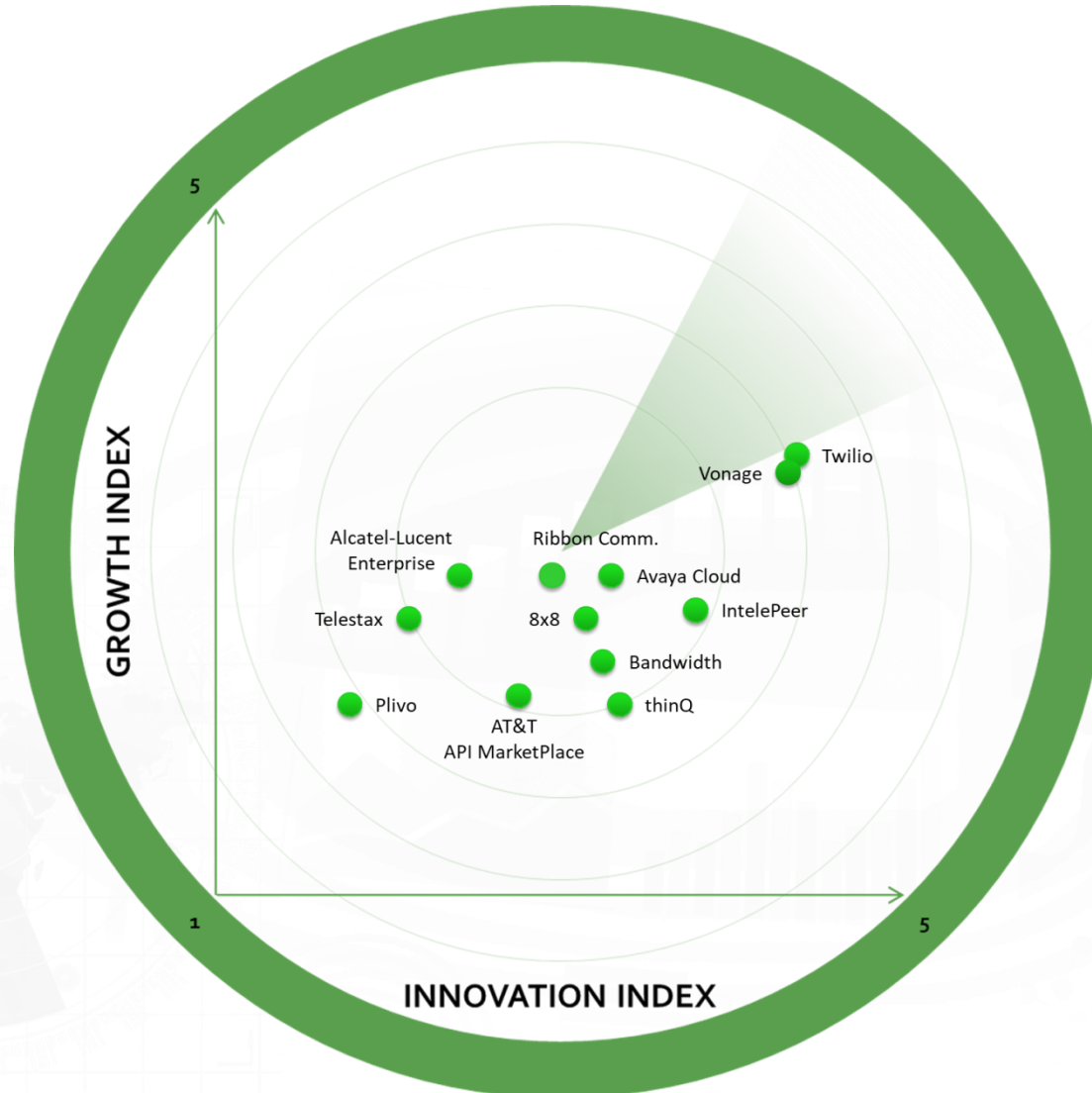
Frost Radar—Description of Companies Plotted

- The companies listed on the Radar cover the full spectrum of CPaaS providers and enablers, including pure-play providers, service provider enabler solutions, and hybrid CPaaS solutions integrated with on-premises resources.

- Twilio and Vonage stand out as strong on both the growth and innovation indices on the CPaaS Radar. Both providers scored well by growing their API-driven solutions, having a strong vision, and having a strong focus on innovation and on research and development. With a unique go-to-market and innovation strategies, both companies are pushing programmable communications in new directions.

- The service provider or partner enablement solutions (Ribbon/Kandy and Telestax) are included alongside other CPaaS providers, and reflect the growth and innovation opportunities they bring to service providers and channel partners. However, empowering providers and channels to deliver the "API economy" to their customers has been slow in terms of lengthy sales cycles and deployments.

- Companies such as IntelePeer and Avaya are driving innovation in their solutions to make CPaaS and programmable communications more accessible to business users, channel partners and non-developers. No-code/low-code workflow designers, predictive analytics, and machine learning move CPaaS beyond APIs and into the hands of line of business users.

- As one of the few hybrid UC communications providers in the Radar, Alcatel-Lucent Enterprise stands out by making significant strides in finding growth with its Rainbow platform, largely within its existing installed base of on-premise and cloud-based UC customers.

Vonage

- Vonage is a leading provider of global business communications services.
- Vonage entered the CPaaS market with the acquisition of Nexmo in June 2016, and added programmable video capabilities in August 2018 by acquiring TokBox. The Vonage API platform has over 845,000 registered developers, up more than 600% since the acquisitions.
- The platform offers a full suite of programmable voice, video, messaging and email services. A developer can purchase new phone numbers or leverage established business lines.

COMPANY DIAGNOSTIC

- The One Vonage Platform, a single cloud-based platform that incorporates UCaaS, CPaaS, and contact center offerings is Vonage's greatest strength. This especially appeals to customers that seek fully integrated communications and collaboration services.
- Nexmo is a strong competitor in the CPaaS market and remains a well-supported pure-play platform. As the core of the One Vonage Platform, new features and capabilities can serve both developers and Vonage's UCaaS and CCaaS applications.

STRENGTHS

FROST RADAR POSITIONING

- The One Vonage Platform is a bold vision for the future of business communications and it is one of the only providers that offers programmatic access to UCaaS resources, including users, business telephone numbers, and customer endpoints. It also offers tighter integration, more flexibility, and a unique value proposition for customers.
- Vonage's Nexmo API platform has continued to exceed expectations, fueling the high growth trajectory of the CPaaS market.

OPPORTUNITIES

- While its API strategy will resonate with developers, future growth will come from enterprise customers. Vonage will have to work to educate its UCaaS customers, sales teams, and partners on the benefits of CPaaS, leveraging existing relationships and the company's global Nexmo Connect Partner Program.
- The capabilities of the One Vonage Platform do not extend to Vonage Enterprise customers, which was retired on April 1, 2019. Vonage will have to manage migrations carefully or risk losing these customers to competing CPaaS and UCaaS offerings.

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The Last Word

The Last Word—Key Takeaways

1	The CPaaS market is bringing with it a new era of programmable communications, enabling businesses to embed communications within their applications, streamline communications-heavy business processes, and achieve some early successes in their digital transformation efforts.
2	The breath of competitors in the CPaaS market—including pure-play and UCaaS service providers, UC vendors, and enablement partners—points to a future where all business communications (voice, video, and messaging) will become programmable.
3	Many traditional communications vendors and telecommunications service providers are finding themselves playing catch up against visionary competitors that are fundamentally disrupting their core communications business. In response, several waves of acquisitions in the CPaaS market are highly likely.

Source: Frost & Sullivan

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About the Frost Radar

Frost Radar—2 Major Indices, 10 Analytical Ingredients, 1 Platform

GROWTH

Vertical Axis

Growth index (GI) is a measure of a company's growth performance and track record, along with its ability to develop and execute a fully aligned growth strategy and vision; a robust growth pipeline system; and effective market, competitor, and end-user focused sales and marketing strategies.

- **GI1: Market Share (previous 3 years):** Market share relative to its competitors in a given market space for the previous three years.

- **GI2: Revenue Growth (previous 3 years):** Revenue growth rate for the previous three years in the market/ industry/ category that forms context for the given Frost Radar.

- **GI3: Growth Pipeline:** This is an evaluation of the strength and leverage of the company's growth pipeline system, to continuously capture, analyze and prioritize its universe of growth opportunities.

- **GI4: Vision and Strategy:** This is an assessment of how well a company's growth strategy is aligned with its vision . Are the investments the company is making in new products and markets consistent with the stated vision?

- **GI5: Sales and Marketing:** This is a measure of effectiveness of a company's sales and marketing efforts in helping the company drive demand and achieve its growth objectives.

Frost Radar—2 Major Indices, 10 Analytical Ingredients, 1 Platform (continued)

Horizontal Axis

Innovation index (II) is a measure of a company's ability to innovate products/services/solutions that are developed with a clear understanding of disruptive Mega Trends, are globally applicable, are able to evolve and expand to serve multiple markets, and are aligned to customers' changing needs. Key elements of this index include:

- **II1: Innovation Scalability:** This determines whether the organization's innovations are globally scalable and applicable in both developing and mature markets, and also in adjacent and non-adjacent industry verticals.

- **II2: Research and Development:** This is a measure of the efficacy of a company's R&D strategy, as determined by the size of its R&D investment and how it feeds the innovation pipeline.

- **II3: Product Portfolio:** This is a measure of the company's product portfolio, focusing on the relative contribution of new products to its annual revenues.

- **II4: Mega Trends Leverage:** This is an assessment of a company's proactive leverage of evolving long-term opportunities and new business models as the foundation of its innovation pipeline.

- **II5: Customer Alignment:** This evaluates the applicability of a company's products/services/solutions to current and potential customers (7-year horizon) as well as how its innovation strategy is influenced by evolving customer needs.

INNOVATION