



# Requirements of an Enterprise CPaaS

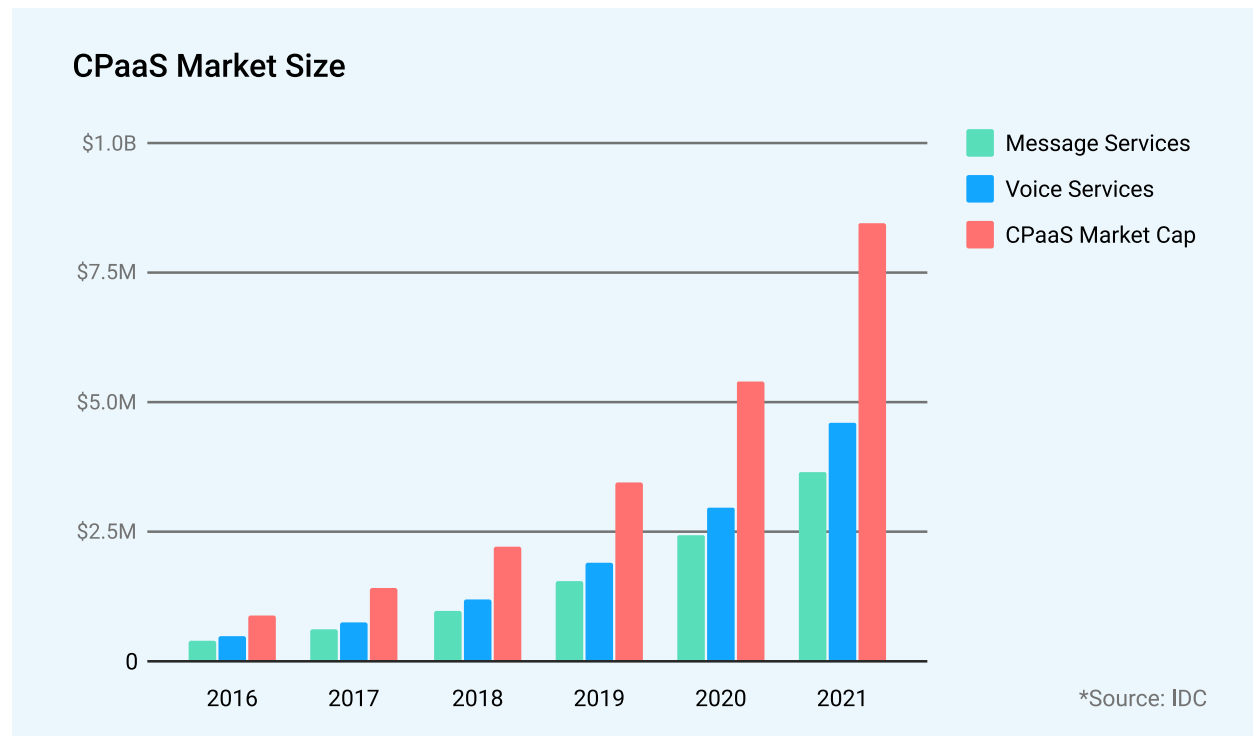
WHAT MAKES A COMMUNICATIONS PLATFORM  
ENTERPRISE-READY, AND WHO IS IT FOR?

## Table of Contents

<i>Introduction: Cloud Communications</i>	3
<i>So, who needs an enterprise CPaaS?</i>	4
<i>When is a CPaaS product enterprise-ready?</i>	5
<i>Quality of Service at Scale</i>	6
<i>Resilient, Private Infrastructure</i>	7
<i>Around-the-Clock, Concierge Service</i>	8
<i>Enduring Business Model</i>	9
<i>Enterprise Features</i>	10
<i>Platform-Oriented Architecture</i>	11
<i>Conclusion</i>	12

## Introduction: Cloud Communications

The Communications-Platform-as-a-Service (CPaaS) market is growing—communications functionality has become accessible to more business types, and the value of baking communications into software products has become more apparent. As the market grew and early adopters proved CPaaS viability, products began to differentiate themselves. Some products specialize in specific communication types like SMS texting or video calls, while others are focused on being easy, drop-in solutions for prototyping or startups. Meanwhile, enterprise CPaaS products are working to replicate the reliability of legacy telecom services and pair it with the newfound flexibility and convenience of internet-enabled communications.



The CPaaS market is expected to reach \$8.2 billion by 2021

## So, who needs an enterprise CPaaS?

Enterprise CPaaS products provide internet-centric solutions to problems that have typically been served by incumbent telecom companies. Mission critical communications require the highest reliability, massive scale and tailored, concierge service. These use cases include global enterprises with in-house communications teams, managed service providers that provide telephony services, enterprise VoIP and UCaaS applications or marketing platforms that manage large sets of phone numbers.

Are your communications mission-critical? Enterprise CPaaS providers are the right match for businesses that will:

- ◆ Rely on the communications service to deliver a product to a large user base.
- ◆ Handle critical communications that simply cannot be delayed by outages or threatened by poor security.
- ◆ Have particular configuration requirements or call control needs.
- ◆ Expect their chosen CPaaS company to serve as a strategic, long-term technology partner.



### **You need enterprise CPaaS if you're a:**

Managed service provider with a telephony product line

VoIP or unified communications application

Marketing platform that manages phone numbers

Global enterprise with an in-house communications team

## When is a CPaaS product enterprise-ready?

Communications platforms must meet specific criteria to serve the enterprise space. Enterprise-grade refers to software companies that deliver “a strategy that enables a consistent architectural model with the support and service necessary for this new, complex environment” of cloud tooling, integrated platforms and global commerce.<sup>2</sup> Namely, that requires:

- ◆ Highly reliable service
- ◆ End-to-end security
- ◆ Measurable impact on productivity
- ◆ Robust integration and interoperability
- ◆ Responsive support organization
- ◆ Future-proofed business

This paper details the infrastructure and strategy requirements that a cloud communications platform must employ to be truly enterprise-grade.



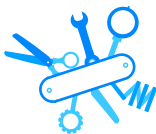
**Highly Reliable Service**



**End-to-End Security**



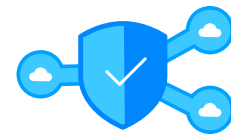
**Measurable Impact on Productivity**



**Robust Integration and Interoperability**



**Responsive Support Organization**



**Future-Proof Business**

2. Forbes, <https://www.forbes.com/sites/benkepess/2013/12/18/what-does-enterprise-grade-really-mean/#79f841545914>



## Quality of Service at Scale

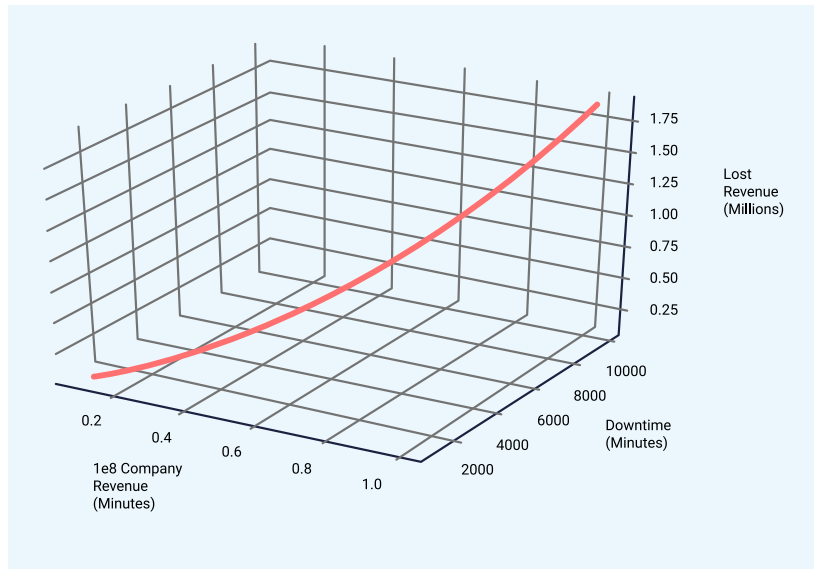
Enterprise clients lose business/productivity and even open themselves up to legal recourse when their products aren't reliable. That's why they require their communications carriers to assure 99.999% uptime, which translates to no more than 5 minutes of downtime in an entire year. This level of service is difficult and expensive to maintain and requires a substantial investment in infrastructure, as described in the next section.

Enterprise customers not only expect high availability but also high quality. A CPaaS should consistently deliver clear sound quality without dropped calls or message failures and maintain that level of quality when scaled to thousands of users.

Lost revenue from a network outage can be generally calculated as a function of total revenue and downtime<sup>3</sup>. Extended outages can quickly rack up millions of dollars in lost revenue, and this doesn't include loss of employee productivity, IT resources and damage in reputation.

### Talking CPaaS

In June, 2017, Skype experienced a three-day outage in its service for most of Europe. February, 2017 saw the AWS S3 outage take down services across the technology spectrum. Preempting technology outages and issues is no longer due diligence—it's a requirement of modern technology decisions.



### QUESTIONS TO ASK

What external services (like cloud providers, network providers or carriers) does your service depend on?

What is your thesis on resilience, redundancy and diversity?

Have you identified your system's single points of failure? How are they being addressed in your roadmap?

What is your contingency plan for large-scale database or network outages?

How do you plan for and prioritize product resiliency in your product roadmap?

3. Business Information Solutions, <https://www.askbis.com/calculating-cost-downtime-business/>

## Resilient, Private Infrastructure

Maintaining an enterprise level of service is impossible for any product relying on the best-effort nature of the public internet or attempting to cobble together a virtual network through partnerships. A true enterprise CPaaS product will be built on that company's private IP network in order to ensure reliability and security, because a private network grants the needed granular control over the communications passing over it and is unassailable by hackers and other malicious actors.

**Enterprises lose \$400 billion annually resulting from cyber crimes.**

A company maintaining their own network can alleviate bottlenecks, eliminate critical fail points and build customizable services that are responsive to enterprise customers' unique needs. Ask for details of a CPaaS's private network and for baseline metrics about how that network performs. Latency, jitter and packet loss are all measurable network metrics that negatively affect call quality, and they will vary wildly for communications products reliant on the public internet due to network congestion, queuing delays and multi-hop routing<sup>4</sup>. Only platforms with a private infrastructure can verify their network performance and implement measures to improve it.

**The average large corporation experiences 87 hours of network downtime a year, resulting in \$3.6M loss.<sup>5</sup>**

### QUESTIONS TO ASK

What external services (like network providers or voice and messaging gateways or intermediaries) does your service depend on?

What other networks do my communications traverse when using your service?

What components of your infrastructure or resources do you resell?

### Communications providers come in three flavors:

**Traditional telecom** - Prioritizes reliability through massive infrastructure, but is often inflexible, outmoded, slow and incompatible with newer internet technologies.

**Over-the-Top (OTT) applications** - Prioritizes fast and flexible service that is delivered via a cloud application, but requires intermediaries, partnerships and reselling services to deliver their product.

**Full-stack platforms** - Blends reliability and flexibility by maintaining their own independent infrastructure while designing a service delivery model that is internet-centric and self-service like a cloud application.

4. SD-WAN Experts, <https://www.sd-wan-experts.com/blog/what-causes-packet-loss-on-the-internet/>

5. Gartner, <http://www.zdnet.com/article/average-large-corporation-experiences-87-hours-of-network-downtime-a-year/>

## Around-the-Clock, Concierge Service

Rarely do enterprise clients simply invest in an application or platform. They're also investing in a technology partnership with a company willing to support their business, assist and educate their employees and innovate over time in ways that will make service delivery better and easier.

To meet these needs, an enterprise CPaaS company will have a mature support organization that is both responsive and proactive. Engineering support should be easily reachable, always available and genuinely helpful. Additionally, customer success teams or account managers should proactively work to optimize configuration, help customers implement new features and advocate for customer needs internally. CPaaS providers that prefer a more transactional business model simply don't have the resources to properly support enterprise customers and their complex and particular requirements.

**57% expect the same response time on nights and weekends as during normal business hours.<sup>6</sup>**

Enterprise CPaaS providers will also offer typical enterprise services like fraud protection, configuration management and platform security.

### Talking CPaaS

The CPaaS market grew out of the segment of businesses underserved by traditional telecom, including businesses that expect more than telecom's slow and lukewarm customer support. If your CPaaS provider can't answer the questions below, they're not innovating the communications industry. They're simply reproducing slipshod telecom service for the internet age.

### QUESTIONS TO ASK

Is your support managed by account representatives, NOC engineers or others? What training and background do they have?

How can we reach your support team (phone, email, chat) and when are they available?

Do we have a dedicated account representative or customer success team? How many clients will they typically be divided between?

Do you offer other services like fraud monitoring or security consultations?

What kind of partnership value does your service organization offer? Can we expect assistance in optimizing our implementation or managing our configuration?

Is the NOC and support team in house or outsourced?

6. Edison Research, <http://www.convinceandconvert.com/social-media-research/42-percent-of-consumers-complaining-in-social-media-expect-60-minute-response-time/>



## Enduring Business Model

Products that simply bolt on to other companies' existing services will always exist at the whim of those partners and providers, and with the complexity and regulations of the communications industry, building a truly independent service is expensive and demanding. But, it is an important step to take in order to support enterprise customers.

Enterprise customers are investing critical, valued business into a communications carrier. If that carrier is dependent on other partnerships in ways that the enterprise customer can't control or have transparency into, that is a massive liability. An enterprise CPaaS will be able to demonstrate the ways they protect themselves from that kind of outside influence.

**Only  $\frac{1}{3}$  of businesses survive longer than 10 years.<sup>7</sup>**

The main way communications platforms achieve independence is by diversifying the providers they rely on and by pulling as much of their service as possible into private infrastructure. By always having a secondary and tertiary way to connect to other carriers, route calls, spin up telephony services or communicate with their API, CPaaS providers ensure that their service is always available and that failures on the parts of their technology partners don't affect their platform's integrity.

### Talking CPaaS

Many CPaaS companies are startups or new entries into the communications space. Investing in an involved communications implementation with a company that lacks secure revenue or a long-term vision can spell trouble down the road.

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### QUESTIONS TO ASK

How does your company insulate itself against commercial pressures or technology issues and trends?

What is your product roadmap for the next twelve months?

7. Small Business Administration, <https://www.sba.gov/sites/default/files/Business-Survival.pdf>

## Enterprise Features

Lastly, enterprise customers have particular needs. They require features that support their massive scale and finely-tuned products. For a CPaaS, that means building a multi-tenant architecture to support multiple deployments and an elastic service to support that scale. It also means introducing advanced configurability so customers can adjust the service to their precise requirements. Beyond that, enterprise CPaaS products will attempt to automate via API processes that are minor inconveniences for typical clients but large-scale productivity killers for enterprise customers.

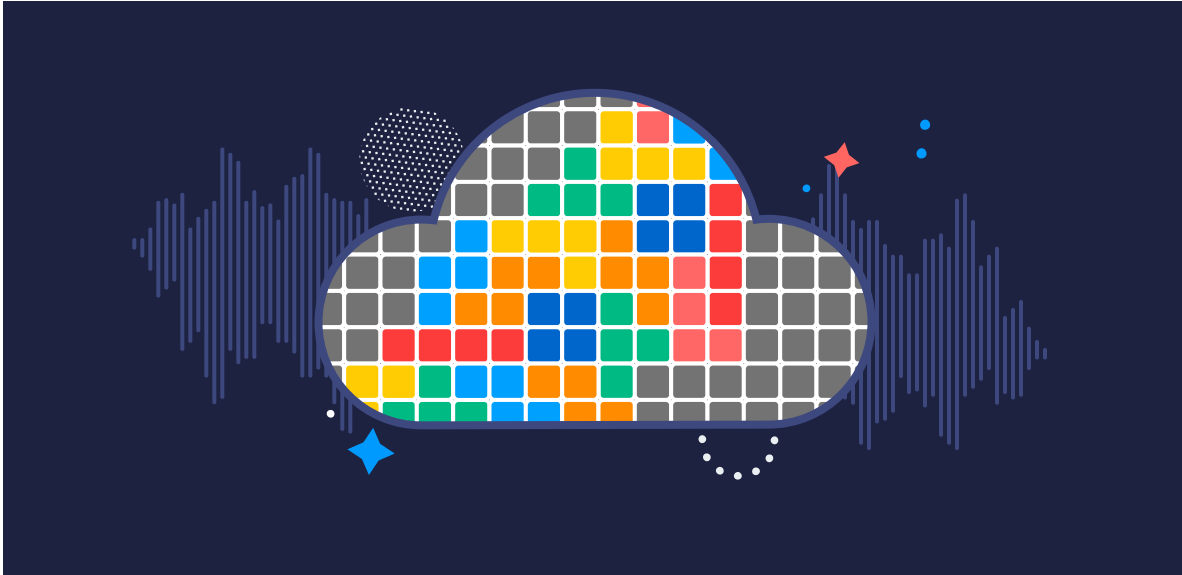
For example, at Telnyx, we've found that our features for onboarding new customers shortens our clients' sales cycles by 1 month.

### Features to Ask About

- ◆ Self-service portal for number search, provisioning and spinning up connections.
- ◆ Embeddable features via API.
- ◆ On-demand reporting for usage and invoicing.
- ◆ Connection debugging tools.
- ◆ Access to telecom data: CNAM, LRN, etc.
- ◆ Advanced configurability like managing SIP headers and codecs, network automation or authentication methods.
- ◆ Encryption and other security features.

### Talking CPaaS

True CPaaS providers are building for the next generation of communication applications and businesses. They should be able to boast a host of features that make applications more responsive, your employees more productive and your customers easier to please.



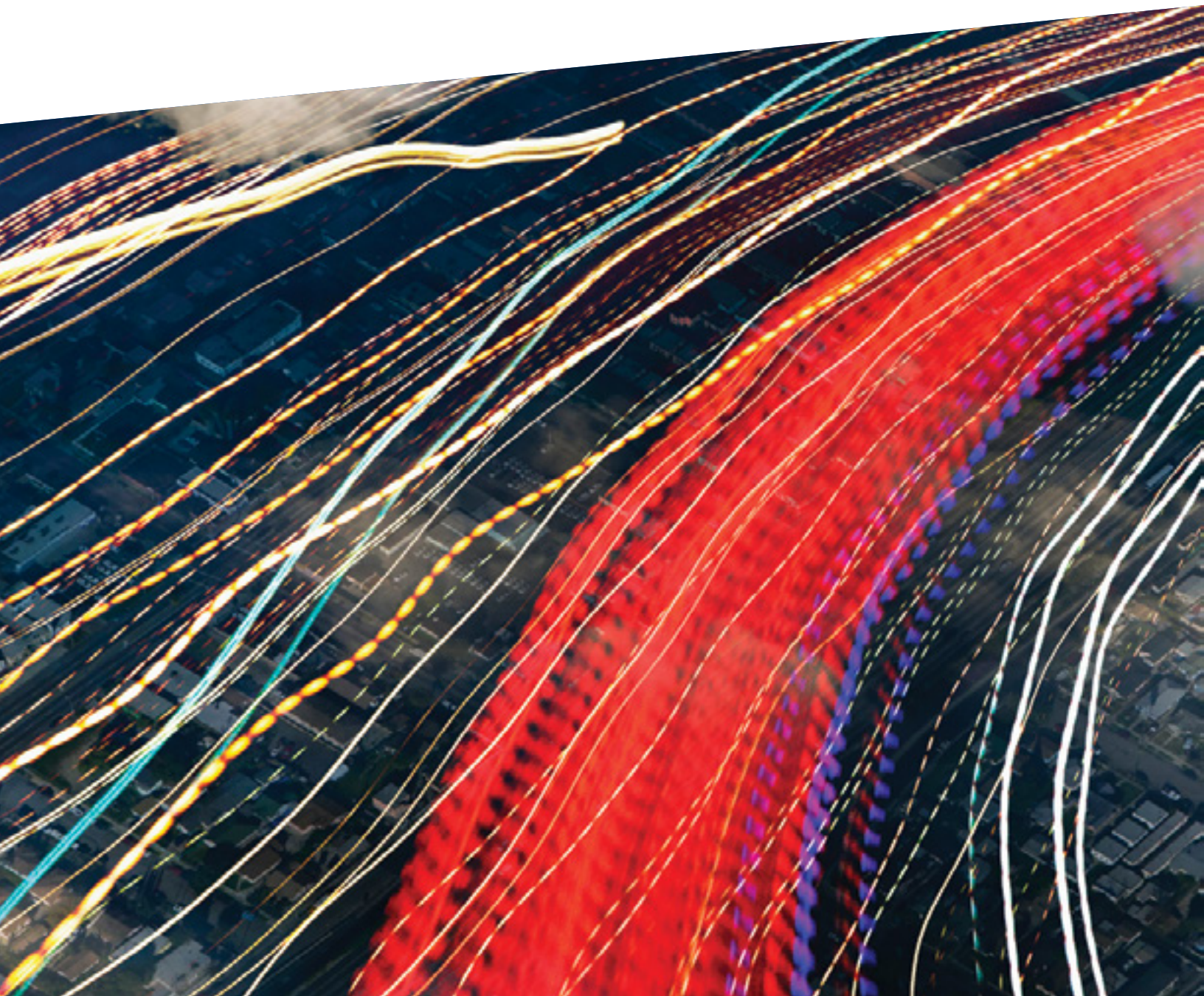
## Platform-Oriented Architecture

The advantages of CPaaS go beyond an internet-centric approach to communications. The rise of technologies like cloud computing, distributed application servers and microservice architecture has precipitated a move away from monolithic software infrastructure towards the platform: modular collections of interworking services and applications. The fractured, omnichannel landscape of modern communications is especially disposed to the platform model as the need for secure, reliable, global person-to-person, person-to-machine and machine-to-machine communications channels increase exponentially. That platform model grants the granular control over communication services required by innovative services, and its decentralized nature decreases the risk of large-scale outages or security breaches.



## Conclusion

As more communications move off of legacy telecom infrastructure and into internet applications, the larger the CPaaS market will grow. The potential for differentiation among CPaaS products, even among enterprise products, will continue to grow as well. To find the right communications platform for your enterprise, shortlist companies that meet these baseline requirements then require proof-of-concept tests that meet the specifications of your technology, business development and customer success teams.



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## About Telnyx

We are bold and gritty builders and pioneers tackling the future's toughest and most technical communication challenges today. We believe in working on behalf of the underserved businesses that require the bleeding edge of telecom technology—every one of our products is a foundation for something better.

