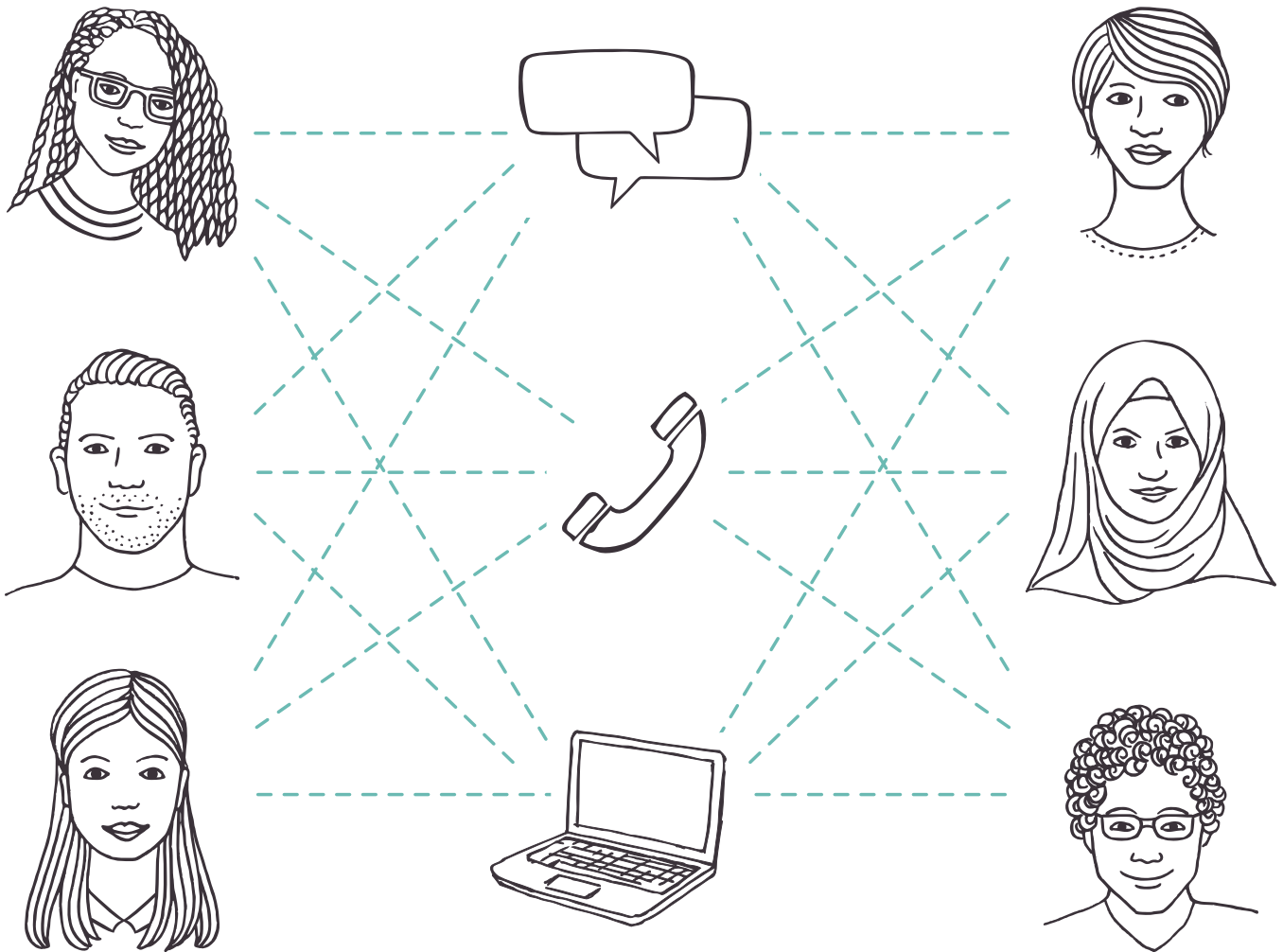


GUIDE

WHAT TO LOOK FOR IN A CPAAS

Finding the right communications provider



VOXOLOGY

WHAT TO LOOK FOR IN A CPAAS

Introduction

In the world of “as-a-service” technologies, there is often an overwhelming amount of data available to anyone looking to purchase and integrate new software into their overall tech stack. Upgrading your business communications features and functionality — such as replacing your old telecom infrastructure, implementing a new API, or simply adding a new backup SIP provider — can be a daunting task, even for the most seasoned telecom/communications professional.

This guide will help you better navigate the Communications Platform as a Service (CPaaS) landscape and help you make informed decisions on what and how you should prioritize between different CPaaS offerings.

THE 5 AREAS WE WILL COVER

- Support
- Features
- Product Design
- Costs vs. Pricing
- Dependability

Support

Wouldn't it be great if you never had to think about support when it comes to your company's incredibly important, and equally complex, telecom service? Unfortunately, that's precisely the guiding ethos by which many telecom providers seem to staff their customer support department — treat it like a “cost center” and minimize it. Some providers may give you fancy tools to help modernize or streamline your telecom infrastructure, but then sit back and hope you never ask for help. Because of that hands-off philosophy, both traditional telecom carriers and major CPaaS providers are notorious for their poor customer service.

The layers of complexity that exist between the user, product, software integration, the platform (network, switches), and the morass that is the PSTN can often lead to your own support staff wanting to throw in the towel. The truth is, even if things go exceptionally well with your application, you are going to need support from your telecom provider.

When comparing different CPaaS and traditional telecom providers, here are a few questions to keep in mind regarding support:

- What kind of support will you get?
- Will you have to pay more for quality support?
- Does the support team understand your application?
- Do they care about and understand the specific issues you are facing?

VOXOLOGY SUPPORT DIFFERENTIATORS

We take great pride in providing comprehensive support to our customers. Here's how we do it:

Knowledgeable Support Team // We fill our support team with people who have backgrounds in software development and coding so that they can troubleshoot and advise on the more technical aspects of your issues. Our support staff doesn't merely follow a script of questions and answers, they actually understand how things work “under the hood”. Many of our customers have complained to us that their past vendors seemed to know less about communications than they do — that is just wrong.

Support Tailored To You // We craft a Customer Profile for each customer and dedicate time and resources to educate our support team on each client's specific use case and business goals. This gives our team the tools they need to provide highly-tailored assistance to each of our customers.

We Celebrate Your Success // It's simple: we want to see our clients succeed. We actually care. No matter how much we grow, this mentality will always be a guiding light for our support team. That customer-first ethos goes a step further. We don't compete with our customers. We do what we do, and we do it well. Our job is to support you, not to try to steal your customers. It's cliché but true, your success is our success.



The truth is, even if things go exceptionally well with your application, you are going to need support from your telecom provider.

Features

Finding an edge over competitors is a major priority for any company, whether you're a household name or a startup. Maximizing telecom functionality as a way to increase revenue, while simultaneously reducing frivolous spend on hosting your own telecom infrastructure, is an often overlooked area of a business that is ripe for wins.

When comparing CPaaS providers, it's important to find a provider who has the features you need in order to gain that competitive edge. Each company is different, which is why you don't need to fall into the trap of looking for the CPaaS with the *most* features. You want the CPaaS with **meaningful** features that fit your unique needs and can transform your communications operations.

NEXT-GEN COMMUNICATIONS

Voxology enables your team to build the most robust and reliable communications services that fit the exact needs of your company. Our next-generation voice and messaging offerings include:

Click-to-Call, Contact Center, Conferencing, CRM Integration, Automated Notifications and Alerts, Intelligent Routing, AI-Enabled Voice and Messaging, and Call Recording and Transcription.

PARTNERSHIP, NOT COMPETITION

Let's talk about the elephant in the CPaaS room. As some of the CPaaS behemoths continue to grow as a company, their "features" and "services" have also continued to grow and colonize other, non-communications related services.

In essence, they are beginning to compete more and more with their own customers. The size and focus of these companies presents two critical issues for customers looking to maximize their telecom operations through a CPaaS:

1. Customer Experience // Many of our customers who switch to Voxology are surprised that we actually care about their questions and concerns, whether they're strictly related to telecom issues or not. We purposefully staff our customer support department with people who have software development backgrounds. They aren't just reading a prepared script when you call, with the sole purpose of getting you off the call as quickly as possible — they understand what's going on with the tech and work with you to find real solutions.

2. Customer Informed Roadmap // Unfortunately, the feature-rich benefits that sold you on a major CPaaS can quickly become an impediment to your own growth. At Voxology, our product vision specifically includes customer feedback. We believe that many of the greatest product ideas come directly from the real-world problems our customers are trying to solve.



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Product Design

According to Gartner, “By 2023, 90% of enterprises will leverage API-enabled CPaaS offerings as a strategic IT skill set to enhance their digital competitiveness.” A projected 70% increase from 2020. With the CPaaS market growing exponentially, customers have many more options than they once did. And with options comes the opportunity to be picky when deciding which platform truly fits your needs. One area of consideration that has risen in importance as the industry has evolved is product design.

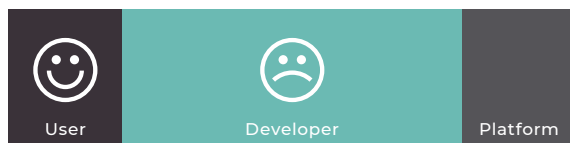
COMPLEXITY MATTERS

No matter what CPaaS you choose, you will have to allocate time and human resources to integrate with and build around it. Whether it be in the design, implementation, enhancement, or maintaining phase, you will spend time creating harmony between your humans (employees/customers/vendors), your applications, and your CPaaS provider. However, some communications providers can require far less work from your developers and telecom engineers than others.

WHO DEALS WITH THE COMPLEXITY?



USER



DEVELOPER



PLATFORM

One of the primary benefits of utilizing a CPaaS is that you can reduce the amount of communications-related complexity your team must deal with. However, the design of your CPaaS's product can have massive implications on that benefit, particularly how much complexity their product enables you to do away with.

LESS EQUALS LESS

One of the biggest differences you'll find in CPaaS offerings is the level of effort that's required to build with their APIs or integrate with their SIP. For example, not all voice APIs are equal. Specifically, some are far more chatty than others. Some voice APIs require developers to write code to handle each independent action on a phone call, so creating a simple customer service call flow to allow a customer to call in, answer a few questions, and be routed to the correct department can force developers into a painful place known as *callback hell*. Callback hell is a phenomenon that software developers find themselves in when dealing with too many nested callbacks. Keeping track of the state of each phone call while accounting for all the error conditions and predictable (or unpredictable) user errors can be a nightmare. While this is undoubtedly a place developers would love to avoid, some voice APIs require your developers to unnecessarily deal with this complexity instead of allowing the platform to deal with it.

To help highlight, imagine a simple IVR (interactive voice response, or automated phone system) as a **path** that the customer walks down to get to where they'd like to go. We'll call this first example the "Happy Path" — a term used to describe a user experience that is free of exceptions or error conditions (that your developer/designer ultimately needs to deal with).

EXAMPLE CALL FLOW (HAPPY PATH):

STEP #1:

- **IVR** // “Thanks for calling ACME, Inc. For sales, say ‘sales’ or press ‘1’. For support say ‘support’ or press ‘2’. For all other inquiries, press ‘3’.”
- **Caller** // Presses ‘1’

STEP #2:

- **IVR** // “Thank you! Now enter your 5 digit zip code.”
- **Caller** // Enters ‘60606’

STEP #3:

- **IVR** // “We are currently experiencing abnormally long wait times. If you would like us to call you back say ‘call me back’ or press ‘1’. If you would like to be placed on hold, just stay on the line.”
- **Caller** // Decides to stay on the line to wait for an agent.

On the “Happy Path” above, the caller doesn’t do anything unpredictable. Even then, many of the popular voice APIs require **your** application to keep track of the caller’s state which requires your developers to build a multi-threaded state machine just so you know where the caller is in the IVR to play the correct prompt.

Now imagine what happens just on Step #1 if the caller starts to diverge from the happy path...

EXAMPLE CALL FLOW (UNHAPPY PATH):

STEP #1

- **IVR** // “Thanks for calling ACME, Inc. For sales, say ‘sales’ or press ‘1’. For support say ‘support’ or press ‘2’. For all other inquiries, press ‘3’.”
- **Caller** // Distracted and didn’t press or say anything.
- **IVR** // “I’m sorry, I didn’t understand. For sales, say ‘sales’ or press ‘1’. For support say ‘support’ or press ‘2’. For all other inquiries, press ‘3’.”
- **Caller** // Presses ‘0’
- **IVR** // “I’m sorry, zero isn’t a valid option. For sales, say ‘sales’ or press ‘1’. For support say ‘support’ or press ‘2’. For all other inquiries, press ‘3’.”
- **Caller** // Presses ‘11’
- **IVR** // “I’m sorry, eleven isn’t a valid option either. For sales, say ‘sales’ or press ‘1’. For support say ‘support’ or press ‘2’. For all other inquiries, press ‘3’.”
- **Caller** // Says “Speak to an agent, please”.
- **IVR** // “I’m sorry, I understand that you want to speak to an agent. I just need to know which department you would like to speak with so that I can transfer you. For sales, say ‘sales’ or press ‘1’. For support say ‘support’ or press ‘2’. For all other inquiries, press ‘3’.”
- **Caller** // Says “support”

STEP #2

- **IVR** // “Thank you! Now enter your 5 digit zip code.” ...

As you can see, the unhappy path(s) can get complicated quickly. What if the caller presses '0'? What if they don't press any digits? What if they press two digits or more? What if they say "Hi, my name is Charles and I am not very happy with your service"? Your first step just turned into multiple paths that may or may not converge in the future of the phone call. And, your developer now needs to deal with all those predictable and unpredictable use cases in their code.

Many of the popular CPaaS providers require a tremendous amount of code to deal with both the happy and unhappy paths, and the more code your developers have to write and maintain, the less reliable and more cumbersome the backend of your application will be.

At Voxology, 99% of the call flows on our platform are supported with a single callback response.

We believe that a CPaaS should empower you to easily uncouple your business logic from your communications so that a change to the business logic doesn't call for a refactor. This also allows your communications integration to more easily be treated as a microservice of your application — a part of the whole but not wholly dependent on the other parts of your code base.

REDUCED SERVER PROCESSING = REDUCED \$

Another benefit of choosing a CPaaS that requires less code and less chattiness is a reduction in server costs. There's no getting around paying for cloud services on the major providers like AWS, Google Cloud, or Azure (unless you are running your own equipment), but it is very possible to mitigate your spend on server usage and capacity when it comes to your communications platform. For some large corporations, who are able to construct their walkways out of gold bars, the reduced server processing power may not be a major concern, but for the majority of businesses, large and small alike, any amount of fiscal savings is always a good thing.

Costs vs. Pricing

In telecom, “pricing” and “costs” are two very distinct, and sometimes confused, things. Historically, there has been an intense focus on achieving the lowest price-per-minute/message. Seemingly endless amounts of time, resources and infrastructure have been thrown at winning these rock-bottom prices. Often, though, the **ongoing costs** of achieving those prices are not routinely reviewed or are no longer being considered.

Better understanding of telecom pricing and costs is crucial in deciding whether to continue to host your own telecom infrastructure, switch to a CPaaS for the first time, or wisely choose between CPaaS providers.

SWITCHING TO A CPaaS?

If you currently host your own telecom infrastructure and are considering transitioning to the cloud, continue reading. If you are currently buying from a CPaaS and just looking to compare providers, you can skip this section.

Over the past two decades, price-per-minute rates have plummeted towards zero, a far cry from the old days of MCI’s ten cents a minute, leaving little margin left to be won by your in-house telecom team. In fact, if you are still hosting your own telecom infrastructure, the true costs need to include your telecom infrastructure software and hardware, including your switch, network, hosting, as well as the salaries/contracts with your carrier relations person, VoIP engineers, networking person, NOCs, and sometimes specialized support people.

The carrier person will be proud of the rates they’ve negotiated, and rightfully so, but the basis of their pride may be predicated on an outdated assumption of where telecom prices are. The industry’s race to zero has been leveling off which removes the need for an entire team dedicated to telecom, eliminates traditional equipment requirements, and reduces your true all-in telecom costs.

While there are exceptions, the expensive staff traditionally involved in hosting your own telecom infrastructure are attempting to optimize prices that have already been maximally optimized. When all the math is done, your true “price-per-minute” may be a lot closer to 10-cents-a-minute than you want to think about.

A CPaaS enables you to move away from the quagmire of traditional pricing and cost structures, while repurposing staff for higher value work and empowering your engineers to build an ideal, cost-efficient telecom infrastructure through an easy-to-use API.

MASSIVE SAVINGS

A recent customer that switched to Voxology was able to save almost \$500k a year, thanks purely to the reduction of all the associated costs they previously had to maintain. As an added benefit, they were able to repurpose their telecom team for more impactful work with their customers and on their product.

Of course, there are pocket-cases where hosting your own telecom infrastructure may still make sense even with all the additional costs taken into consideration. Those instances are few and far between, and becoming increasingly more rare thanks to the advancements in telecom technologies.

CPaaS PRICING 101

Remember the days when your cellphone bill was as long and confusing as a CVS receipt still is today? Well, unfortunately, some CPaaS providers continue to employ the same cloak-and-dagger methods when it comes to explaining their own pricing models to customers.

Many providers use a 60/60 (sixty over sixty) billing method when calculating charges for each phone call made and received by your company, also known as “60 second rounding”. This is known as incremental billing, which has been an industry standard since the days of rotary phones. The first number (**60**/60) describes the rounding increment of the first block in seconds, and the second number (60/**60**) describes the rounding increment of each block thereafter in seconds.

Here’s how it works:

60/60 ROUNDING EXAMPLES

- 10 second call // Let’s say your price per minute is \$0.02. You call your customer to confirm a meeting tomorrow, it goes to voicemail and you decide to hang up and send them a text message. The call only lasted 10 seconds, however if you are paying 60/60, you will be charged for a full 60 seconds (\$0.02), even though you didn’t use the additional 50 seconds.
- 2 minute, 5 second call // Now, let’s say your customer calls you back to confirm, and the call lasts 125 seconds. In the 60/60 method, you will obviously pay for the first 60 seconds

(which you used), and then each minute after that will be rounded up to the next minute. So, by the time you both hang up, you will be charged for 3 full minutes (180 seconds) even though you didn’t use 55 seconds of the time you were billed.

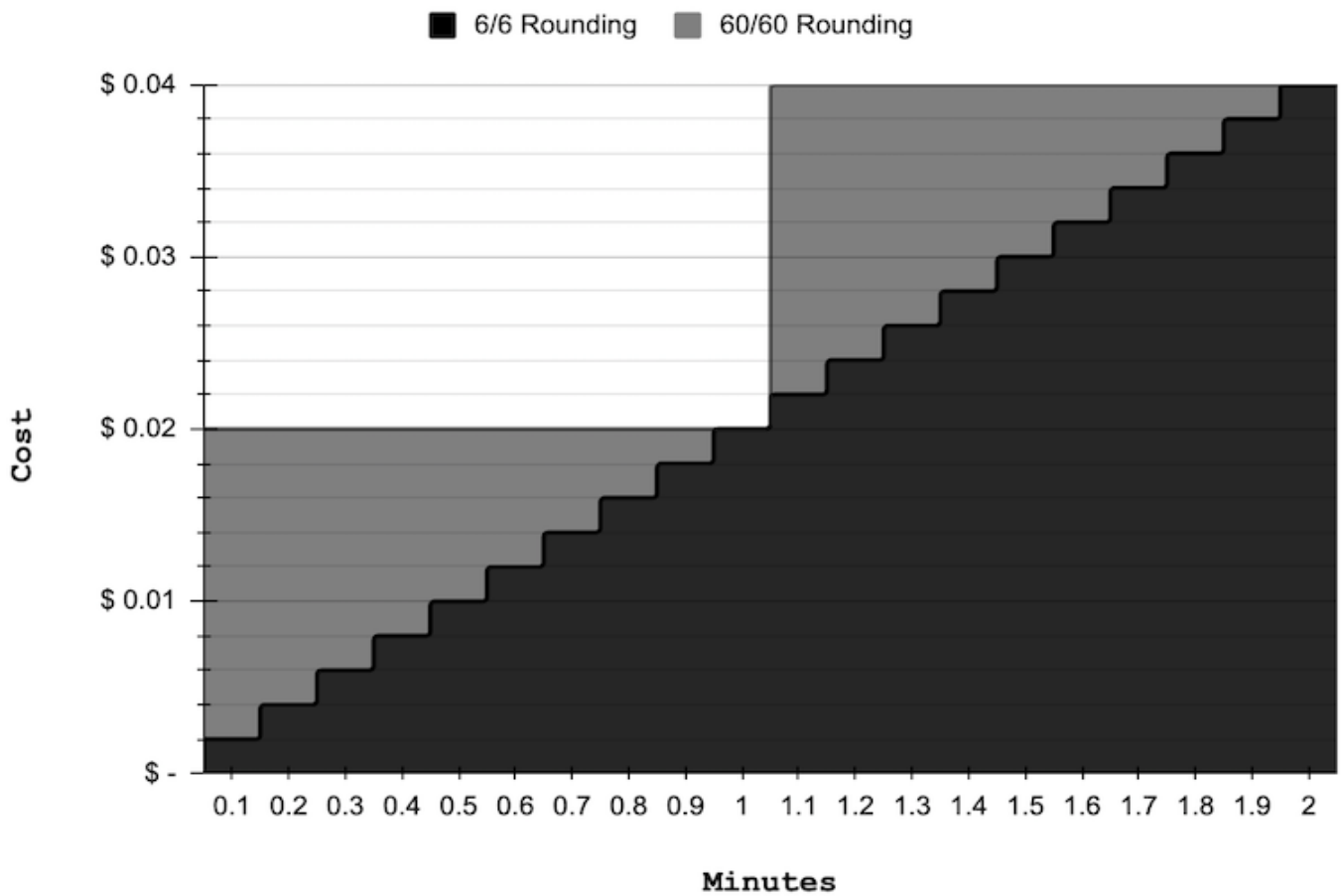
While 60/60 is used by many in the CPaaS world, at Voxology we use a 6/6 (six over six) billing increment for all US and NANPA calls, also known as “six second rounding”. This means that we round up to the nearest tenth of a minute (6 seconds). 6/6 is the standard billing increment that underlying carriers charge, and we feel like this is appropriate to pass along to our customers. To highlight the difference between 60/60 and 6/6, we will use the same example from above:

6/6 ROUNDING EXAMPLES

- 10 second call // Let’s say your price per minute is the same as above, \$0.02. However this time you are billed in 6/6 increments, which means your 10 second call is no longer rounded up to 60 seconds, it’s rounded up to 12 seconds, or two tenths of a minute. So, your call would cost \$0.004, an 80% savings compared to the 60/60 provider.
- 2 minute, 5 second call // Your 125 second call would no longer be rounded up to 3 full minutes, rather 2.1 minutes. So, your call would cost \$0.042 rather than \$0.06, a 30% savings.



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60/60 VS. 6/6 ROUNDING

Rounding matters. As you can see, even the same price/minute can lead to wildly different costs. The chart above illustrates the difference in costs between 6/6 rounding vs. 60/60, both with the same price per minute (\$0.02). The light grey area represents the 6/6 savings.

APPLES, ORANGES, AND LEMONADE?

When assessing the price-per-minute costs of various providers, you have to understand the incremental pricing they use. Comparing telecom pricing can be apples and oranges. One vendor may have a significantly higher price/min, but if they are billing in six second increments (as opposed to full minute increments) they may actually save you money.

Here is a dumb lemonade stand example to demonstrate how a lower price doesn't always mean lower costs.

THE LEMONADE STAND PARADOX

Imagine there are two lemonade stands on your street. Both advertise "bring your own cup, no refills". The first stand charges \$1.00/gallon, while the second is charging \$6.00/gallon.

Assuming the lemonades are of similar quality, the \$1.00/gallon stand is a no brainer. Right? Wrong. Here's the deal — you only have a 16oz. cup, so you only need 16 ounces of lemonade (remember, no refills). The \$1.00/gallon stand is very proud of their low price, but they only sell in gallon increments.

Meanwhile, the \$6.00/gallon stand allows you to **pay only for what you need**. Since you only need 16 ounces, the lemonade stand with the 6X price is shockingly the most cost effective. It only costs you 75 cents, making it 25% less than the lower priced option.

HIDDEN COSTS

Finally, when comparing CPaaS providers, be sure you know when you aren't comparing apples to apples. For instance, some providers charge additionally for conferencing or answering machine/voicemail detection and delivery. If your application requires those features it can completely change the provider's cost structure and fatten up your bill. These "hidden costs" add up fast, and can eat away at the savings promised to you by switching to a CPaaS. The advertised price-per-minute prices can often be misleading, leaving you with a huge bill.

At Voxology, we can help you make sense of your pricing and help you interpret and uncover the actual costs.

Don't get distracted with telecom pricing nonsense when evaluating the true costs of your communications. If you are considering switching CPaaS providers, let's talk. Voxology could save you 20-60%. If you are migrating your telecommunications to the cloud, even better. Voxology could save you even more.

Dependability

With the rise of DDoS (distributed denial-of-service) attacks on communications providers, and a recent day-long Facebook outage, reliability is on everyone's mind. It's tempting to try to take advantage of these outages and attempt to convince customers your company won't have these problems. But, while it may be true that customers won't have **these** problems, it's important to examine the broader question.

RELIABILITY & DEPENDABILITY

Reliability is an important consideration when it comes to communications, in fact it's critical for any 24/7 communications platform. And, while it would be silly to discount the importance of reliability, it isn't the end-all be-all. Instead, we like to think about reliability as the bare minimum, a prerequisite for actual service. Even though a communications provider has great uptime, the real question is are they dependable? It's one thing for **their** platform to be up, but it's a whole other thing for them to be dependable when things go wrong.

Likely the companies attempting to "make hay" while their competitors experience outages are either marketing without talking to their own platform operators, or covering their eyes to their own issues. Every company has vulnerabilities and anyone could be the next target.

The not-so-secret secret in the industry is that things break. Even if your provider somehow manages the impossible — 100% uptime, all the

time — they rely on a host of downstream carriers who will have issues. So, the question quickly moves past the provider's reliability and on to how they address downstream issues. Can you depend on them? When there is a disaster, is your provider going to step in and help, or are they going to say "it's not our fault" and leave you to attempt to figure it out by yourself without any levers to pull?

Here at Voxology, when issues arise, we aren't looking to play the blame game. Even in situations where an issue is outside our control, we still work together with customers to troubleshoot and find solutions.

OUR EXPERTISE

Being able to trust and depend on your communications platform is the goal. If your provider proves they are there to help when you need it most, it strengthens the relationship and offers peace of mind. One area where dependability is especially important is emergency notifications. Imagine being in a situation where you need to get thousands of emergency messages out as quickly as possible, but something goes wrong, and your communications provider is nowhere to be found.

Voxology has been delivering emergency notifications at scale for over 15 years. We have firsthand experience dealing with major issues arising at the worst possible time. Wherever the issue manifests -- in our customer's application,



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inside our platform, or with a downstream provider, we work hard to clear it instead of just determining whether or not it is **our** issue.

In addition to the support we offer during an incident, we also help our clients spot issues proactively, even issues unrelated to Voxology. We are able to do this through our advanced monitoring and alerting system. When we see something unusual, we quickly let the customer know. Then, we work together with their team to investigate and resolve.

After an incident, a company's transparency comes into focus. What lessons were learned? What root causes have actually been addressed to change the dynamic in the future? Part of your perspective on Voxology's dependability will come from the ways in which we perma-fix problems that we experience.

REAL WORLD EXAMPLES

In an ideal world, issues would never happen. But in the real world of telecommunications where one must deal with a sea of different providers, old and new technologies, and the overall telecom infrastructure, things break. It is far better to prepare for your worst case scenarios rather than just hope everything goes according to plan.

Here are a few recent stories to highlight our team's dependability:

DEPENDABILITY DURING A HURRICANE

After Hurricane Ida made landfall, one or more of the major US carriers were impaired for an extended period of time. When our customer who provides emergency messaging in an area that was impacted by the storm was unable to complete calls on a major carrier, they came to us to see if there was any way we could get their calls to go through.

Our teams worked together to secure the sustained capacity to place the calls, bypassing the carrier who was unable to complete them. As

a result of the hard work and collaboration from both teams, these emergency calls were able to be completed through Voxology — a huge victory despite the catastrophic outage of their primary carrier.

ADVANCED MONITORING AND ALERTING

During a recent holiday, our platform monitoring uncovered abnormalities in a customer's typical ASR. Our team responded quickly and even after determining the issue was not within our control, we continued to explore and discovered that one of their large customers was down and not receiving calls. Our team then passed along the information to our customer through a shared Slack channel so it could be addressed.

EMERGENCY MESSAGING

A recent wildfire threatened a small town within a California school district who relies on our platform to deliver parent/guardian notifications. After the fire had impaired regular communications systems for the town, local officials noticed that the school's communications were still functioning and asked if they could use the school's system to deliver emergency notifications to the residents. As the provider of these notifications, we agreed.

Because our platform was still running successfully, even in the midst of a natural disaster, we were excited to help out and deliver the crucial emergency notifications to their community.

DEPENDABILITY MATTERS

At the end of the day, you want a communications provider who actually cares about the things you are trying to accomplish.

While reliability is important, the best service goes beyond that. Choosing a provider who is dependable will allow you to gain greater peace of mind with your communications.

Our team is truly invested in the success of our customers. We believe that great communication starts with listening, which is why we take the time to listen to your specific business needs and provide customized support. The combination of our next-gen technology and tools ensures that we will do everything in our power to help you identify and solve any issues that arise.

CONCLUSION

Without a doubt the CPaaS marketplace is full of quality options, but only Voxology combines the functionality and features, pricing, product design, support, and dependability you need to maximize your customer experience and your margins. Beyond the wide array of our industry-leading capabilities, we offer the type of person-to-person support you'd expect from a boutique shop, with the security, sophistication, and infrastructure of a major carrier.

Because of that, Voxology is the communications backbone of industry leaders in a wide range of markets. In addition to providing your developers with an easy-to-use API, we also provide the phone numbers, messaging, minutes, and call control functionality you need to modernize and maximize your entire communications stack.

Our commitment to our customers' success is evident in the way we continually push the boundaries of what's possible when it comes to Support, Features, Product Design, Costs vs Pricing transparency, and Dependability.

Are you ready to learn more about the Voxology CPaaS?

SPEAK WITH A VOXOLOGIST