



The future of communications is programmable

How CPaaS can help enterprises deliver voice, video and messaging services in a post-Covid world

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Introduction

The post-Covid world will be one of home working and digital journeys. How can older 'legacy' businesses adapt? How can they guarantee seamless two-way interactions with customers on the channels of their choice? There's a simple answer: programmable, cloud-based communications.

One good way to think about social trends is as viruses; people see others do a new thing and the idea spreads. Perhaps 'presenteeism' used to be the dominant work/life virus. The culture favoured eating lunch at the desk and working late, so that is what most people would do.

Then a real virus came along. Covid was the nudge that set off a complete re-think among workers, consumers and businesses. There was a sudden and dramatic shift towards video-conferencing and flexible working – even though these practices had been possible for decades.

Of course, the pandemic has not just impacted office culture. It has accelerated a wider shift towards digital experiences – from how we consume entertainment and use online banking services, to how we interact with delivery companies and do shopping.

According to Adobe, online spending in May 2020 hit \$82.5 billion – up 77 per cent year-on-year. It says this rate of growth would have taken up to six years in 'normal times'.

The digital switch raises big questions for older 'legacy' businesses.

Businesses are wrestling with speed of change. They know they have to re-calibrate the way they 'talk' to customers. They cannot rely on physical stores and call centres. Old school web pages and email are not enough.

Customers want two-way digital conversations on the channels of their choice. They want to be able to switch from voice to video to text to rich media without disruption. They demand asynchronous communication to fit in around their schedules.

The good news is that these journeys are now relatively straightforward to provide. This is thanks to communications platform as a service (CPaaS).

CPaaS turns advanced communication into software. It gives an organisation the ability to quickly integrate real-time voice, video, and messaging solutions into business communications. And it can do all this without building back-end infrastructure and interfaces.

CPaaS used to be the preserve of newer 'digital native' companies. Not anymore. Today, virtually any business can switch on CPaaS in a few days. Many already are.

In this paper, we will explore how CPaaS is helping enterprises deliver the services that consumers demand in a digital-first post-Covid world.



CPaaS spending to triple by 2025

The 'noughties' was undoubtedly the decade in which businesses woke up to the potential of mobile messaging. They hired intermediaries to help them send SMS alerts to customers, and the effect was transformational.

The coming decade looks set to move enterprises into the next phase: conversational messaging with customers via rich communications channels – powered by CPaaS.

Juniper Research puts a number on this market shift. It puts CPaaS

spending at \$7 billion in 2020. But by 2025, Juniper estimates spending will triple to \$25 billion.

The market analyst says that, despite CPaaS's new capabilities, more than 95 per cent of revenue this year will be attributable to SMS. However, this will drop to 70 per cent by 2025 as alternative rich media messaging solutions gain traction.

Juniper's research identified payment as a key factor in the growth of CPaaS services. It expects rich messaging to explode when its various channels can support in-message transactions.

Understanding CPaaS: a glossary of terms

Unified communications as a service (UCaaS)

Once there was the simple wired desk phone. Then the world went digital. This led to the emergence of unified communications as a service. UCaaS providers would kit out offices with on-prem equipment, which would put all communications (VoIP calling, IM, messaging, conferencing) in one place. Usually, this 'place' was a proprietary hardware solution.

Communications platform as a service (CPaaS)

CPaaS turns communications features such as voice, instant messaging, WebRTC, SMS and video into software – and hosts it on the cloud. A business simply pays a subscription to its CPaaS provider and then launches these communications features from inside its own business software applications.

Application programming interface (API)

APIs make it easy for different software applications or services to 'talk' to each other over the

internet. So, for example, a developer doesn't have to build a map from scratch. The application can fetch the map from Google Maps and integrate it into its user interface. With CPaaS, they can do the same for video, voice and messaging.

Omnichannel customer engagement

Every customer has a favourite communications channel – or one that suits their circumstance best in the moment. The channel could be:

- Email
- SMS
- Rich media messaging
- Live chat
- Social media
- Voice
- Video

It's important that enterprises make all these options available. But more than that, they must link them together seamlessly, so the customer doesn't have to repeat the same information twice if he or she switches channels. This is omnichannel customer engagement.

Programmable messaging

This is the ability to control the sending and receiving of SMS, social media messages and mobile notifications through business software. It means businesses can schedule alerts and notifications, target marketing campaigns by segments and more.

Programmable voice

This CPaaS feature lets a business manage its voice communications from the cloud. It can use programmable means such as APIs or other developer tools to add new features or entire solutions.

Programmable communications solutions

CPaaS can allow business to specify a communications workflow, customize it and roll it out to its customers at a moment's notice. It can access workflows via APIs, implemented in sequence for a specific communications solution.



Digital journeys now: Nine ways CPaaS is changing customer experience for good

There's nothing particularly new about SaaS. What's different about CPaaS? Well, let's compare it with another cloud solution for communications – Unified Communications as a Service (UCaaS).

UCaaS is purchased in pre-defined service packages, with a business usually paying by the number of 'seats'. It is often licence-based. And it sets up a rigid, pre-defined communications structure that defines exactly how calls are routed or which messaging channels can be used.

By contrast, CPaaS is much more flexible. It offers programmable communications that businesses

can customize on the fly through simple API requests.

Thanks to CPaaS, any brand that wants to call or text its customers can do so from a simple dashboard. Or they can do it from inside familiar cloud-based platforms such as Salesforce, Hubspot or Slack.

This is not just speedy and simple. It is also insightful. Turning comms into software generates data. Brands can scrutinise the data to understand which campaigns deliver the best response, and thereby make future communication more effective and personal.

CPaaS also frees up any enterprise department to create its own workflows, without having to outsource the task to the IT department. This is unleashing new use cases. A good example is the sending of one-time passwords (OTPs). For many enterprises, this has become the default tool for onboarding, authentication and more.

CPaaS is now going mainstream. It's bringing new ideas to traditional market verticals. Healthcare companies are using it to develop remote telemedicine services by video. Banks are experimenting with message bots that answer account and product-related queries.

Let's dig deeper into nine transformational applications of CPaaS.

1. Powering the gig economy with number masking

One of the great advantages of turning comms into software is the ability to generate virtual or temporary phone numbers. One application of this is privacy protection. Businesses can hide personal phone numbers (for customers or agents) when necessary.

This 'number masking' has helped make the gig economy flourish over the last 10 years. Consider ride sharing. This depends on the ability of passengers and drivers to call each other without revealing the true identity of each party.

Thanks to CPaaS, any gig economy agent can use his or her private phone to make and receive calls anonymously using a virtual number. And this is scalable. A single number can handle 20 or more simultaneous calls between any two parties.

In the post Covid economy, these features will be appealing to businesses outside of the gig economy. Any company can use virtual numbers to meet upticks in seasonal demand/home working to onboard new agents without extending the corporate phone system.

2. A bot option for every customer query

Everyone is familiar with the frustration of waiting for a contact agent to pick up. Also, given the choice, most people like to self-care. One promising way to resolve this problem is to divert customers to a chat bot.

CPaaS gives enterprises the ability to create virtual agents and integrate them inside their contact centre systems. Bots ensure that customers get answers immediately, and free up more time for human operators to focus on complex interactions.

3. Know your customer: speedy and secure multi-factor authentication

The huge spike in digital journeys over 2020 has intensified the need to identify every user and secure every transaction. CPaaS lets businesses automate the entire workflow of validating their user's identity over whatever channel is appropriate for the user and/or the application.

CPaaS supports the most popular authentication method of all: the one-time PIN delivered over SMS, e-mail or IVR/voice call. Businesses can also customize the security level based on factors such as language, transaction type, and backup channel for instances where the primary channel fails.

4. Marketing campaigns on any channel

Businesses need to reach their customers where they already are. Every customer has a preferred channel. Some like a text. Others may respond to email. Many prefer social media or OTT messaging. CPaaS lets companies create individual profiles, so they can set up the most effective campaigns possible.

But this ability to personalise goes deeper. For example, enterprises can target by region. They can even determine when a customer is roaming (and therefore unlikely to respond). They can easily de-list defunct or fraudulently assigned numbers.

5. Bookings made easy

Great customer service delights people. It makes them loyal. It turns customers into ambassadors. This even applies to something as simple as making or amending a booking.

Today, every kind of business can use CPaaS to let a caller select from IVR options to create, change, or cancel an appointment – without the need to speak to anybody.

When the call is completed, the booking system is automatically updated with the new information. What's more developers can programme a workflow in the CPaaS platform to notify others of the changes via email, SMS or voicemail.

6. Making CRM even better

Cloud based CRM systems have revolutionised customer care. They have made it easy for employees to access and update individual profiles. CPaaS makes the process even more efficient. Take the call centre scenario. When a call is answered by an agent, the CPaaS platform will open the customer's account in a pop-up window. This means the caller does not need to repeat any of their information, while the agent has instant access to the customer's history.

7. Customer reminders that happen automatically

Timing is everything. Messages can be extremely effective when they are scheduled for the right moment. CPaaS lets companies notify a customer about any number of events – a 30 day payment reminder, birthday, celebration day (Valentines, Black Friday etc). This can apply to one or two-way messaging and be sent over a short or long code.

8. Lower, more predictable costs

Costs tend to fall when services move from physical to digital. CPaaS follows this rule. There's no longer the need to buy hardware, manage servers, or deal with IT issues. It makes even highly specialized or bespoke applications affordable. Companies can develop them internally, rather than pay external specialists to do it.

CPaaS also reduces complexity. The CPaaS provider handles all the call termination, routing and number ordering. It manages the contracts with the mobile network operators.



API calls: are they carrier-grade?

The beauty of CPaaS is that it turns communications into lines of software. This makes it easy for a company to integrate APIs for voice, messaging and video – and then manage customer interaction from a simple dashboard.

But this simple 'front end' process depends on complex 'back end' technical integration and contractual negotiation. In short, CPaaS is not only as good as its APIs. It also relies on the network to deliver a true carrier-grade service.

Organisations should be aware of the track record of their cloud communications partner. Are the connections direct? Are they secure? Can they reach customers all over the world?

Businesses should seek out CPaaS specialists that are deeply embedded with the world's communications service providers. Tata Communications, for example, has direct reach to 65 percent of global mobile subscribers via its operator connections, with all the rest

reachable via peering agreements.

Tata Communications' programmable communications solutions are intended for the global business. We deliver API responses with the same carrier grade reliability that is currently leveraged by thousands of enterprise customers.



Case Study: How an international bank harnessed the power of SMS authentication

Today, many of the world's largest companies depend on SMS passcodes to authenticate their customers safely. In fact, it is estimated that two factor authentication (2FA) messages now comprise as much as 20 per cent of all business messaging traffic.

SMS passcodes work especially well for banks. Financial firms need to authenticate their customers more than most organisations.

For this reason, one large international bank invested millions of dollars to enable 2FA over text for its account holders. It hired a messaging aggregator to handle the sending and receiving of millions of messages – and paid a premium price to do so.

Despite this, there were still many service challenges. For example, it could take up to six weeks to resolve a basic message delivery issue. During this time, it effectively sent no messages at all.

The Bank switched to CPaaS. This allowed it to program its own message deliveries as software. The result? The ability to track all 2FA transactions, no more message delivery issues, consistent network quality and affordable knowable pricing.

Conclusion

The mass migration towards digital journeys – both at work and for leisure – appears irreversible. Millions of people have switched over, and they are not going back.

As a result, they have raised their expectations of the brands they interact with. They want two-way conversations on their terms and on the channels they like best.

Meeting these expectations need not be difficult. Every kind of enterprise can use communications platform as a service (CPaaS) to do it. CPaaS turns voice, messaging and video into software. Every campaign or customer care conversation can be managed from a simple dashboard.

And because CPaaS is handled by specialist platform providers, it is affordable. Enterprises pay a knowable fee for the whole service. There's no installation or on-going maintenance.

Tata Communications is one of the world's leading CPaaS providers. We have helped many of the world's biggest brands to deliver great digital journeys for millions of customers. Tata Communications supports a Cloud Communications Platform also powering other leading CPaaS providers, so it can be thought of as a Cloud Communication Provider of Cloud Communication Providers.

Key areas of focus for Tata Communications include:

- **Outside-In / Bespoke Offers:** No one-size-fits-all approach, with more of a partnering model, to help our customers enable their digital ecosystems, to drive business outcomes.
- **Owned Infrastructure:** Because we own the underlying infrastructure & have people managing it, that means we can go to the most granular details to resolve any issues, quickly and locally.
- **Regulatory Impact:** Over the years a wide range of regulations have been implemented, designed to protect both consumers and the communications service providers themselves. This protective wall has tended to reinforce the entrenched position of incumbent operators while providing governments with policing mechanisms. Companies working with CPaaS can be relative newcomers to the telecommunications world. We can help them to navigate regulatory protocols.
- **Data Lake:** We connect 4 out of every 5 of the world's mobile subscribers and carry 30+ billion minutes of wholesale voice traffic annually. More than 300 of the Fortune 500 companies use Tata Communications' state-of-the-art cloud, mobility, network and unified communications services. This means we gather a lot of data, which together with our data centric culture feeds our innovative service, including our Fraud Prevention as a Service and Managed Cyber Security services – protecting our customers 24 hours a day.

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