



MOVING BEYOND SMS: HOW CPAAS WILL EVOLVE IN 2023

Whitepaper



1.1 CPaaS: Future Market Outlook

Mobile channels are becoming increasingly important for brands and enterprises to connect with customers, with service providers emerging that look to offer a comprehensive platform that enables the management of this communication: these are CPaaS platforms.

Juniper Research defines a CPaaS platform as:

'A service or solution that enables brands and advertisers to communicate to clients via multiple outbound online and mobile channels via a singular centralised platform.'

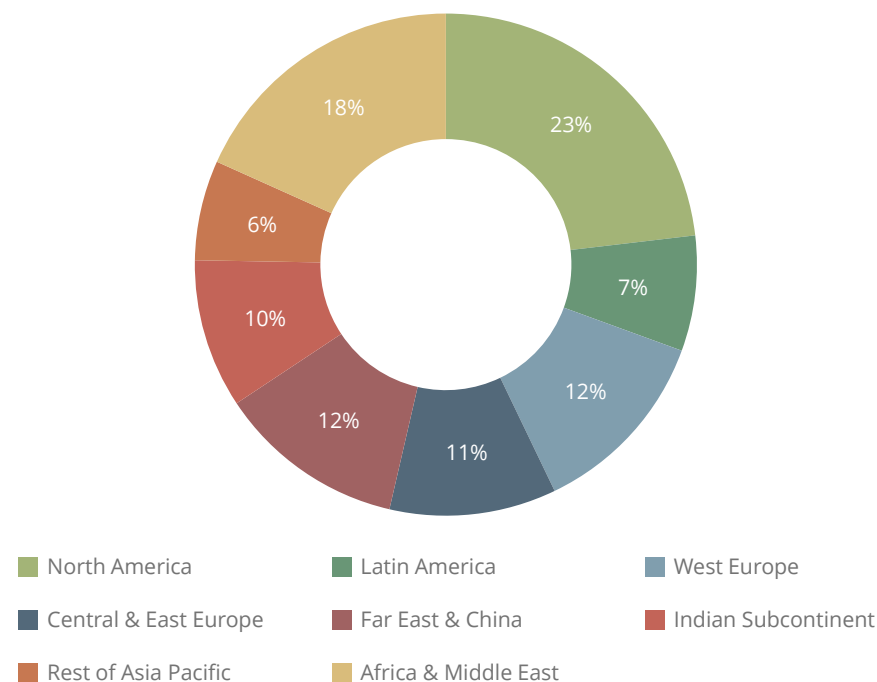
There are a number of services that can be considered part of CPaaS platforms, including messaging technologies such as SMS, RCS (Rich Communication Services) and OTT messaging applications. Also offered are push notifications, voice services and email.

Juniper Research believes the key to success for CPaaS platforms should not be measured by traffic, but by the number of communication platforms it can offer, as well as the extent of managed services that it provides.

Indeed, in the future, Juniper Research believes that the introduction of chatbots, financial services, payment services and expansion into CPaaS platforms will be key for service providers maximising their revenue. However, Juniper Research has identified the introduction of CDPs (Customer Data Platforms) and CCaaS (Contact Centres-as-a-Service) as key elements that leading CPaaS platforms must look to introducing, either through acquisition or in-house development, in the near future.

As can be seen from figure 1, Juniper Research believes that North America and Far East & China will represent considerable revenue opportunity in 2022. Whilst Far East & China houses a significant number of mobile subscribers, CPaaS spend in North America is substantial.

Figure 1: Total CPaaS Market Value in 2022, Split by 8 Key Regions: \$18.3 Billion



Source: Juniper Research

It is important for CPaaS players to ensure that they are able to deliver traffic across the largest variety of technologies in order to attract the largest clients; however, as these channels become increasingly complex, the provision of managed services is likely to have a big factor in an enterprise's decision on which CPaaS vendor to use.



Juniper Research has identified the management of chatbot workflows as a key service that CPaaS vendors will need to expand in the future. Many smaller enterprises, which have less need for AI-based chatbots, will be able to use flow builders to create simple chatbots. However, larger enterprises, will demand chatbots that require AI to create more complex user experiences.

1.2 Key Trends Impacting the Growth of CPaaS

Juniper Research has identified four key trends that are impacting the growth of the CPaaS market. These include:

1.2.1 The Security of CPaaS Traffic

A continuing debate in the CPaaS market is 'build vs buy'. Whilst Juniper Research believes that these decisions must be made on a case-by-case basis, the ability to add in APIs to platforms efficiently has now become a necessity for CPaaS platforms. As an increasing number of SMEs adopt CPaaS services, it is becoming more likely that CPaaS users do not have in-house developers that can create customer APIs; thus, the onus is on the CPaaS platforms to develop them and integrate within their own solutions.

A key component of this movement is the impact upon security. The level of focus on security varies by industry but is certainly increasing. CPaaS platforms are experiencing greater demand for 2FA and MFA traffic. Over the next five years, Juniper Research expects a greater integration with KYC (Know Your Customer) checks in the banking industry to enhance security.

Cybersecurity is becoming an increasingly important matter for enterprises, as messaging is often used for OTPs (One-time Passwords) and verification purposes, as well as the transfer of sensitive information. Juniper Research notes that the most successful conversational commerce vendors will offer their own, in-house cybersecurity solutions.

Whilst messaging platforms can implement advanced fraud detection methods which accurately detect, block and prevent spam messages from reaching customers, this method is not efficient, as service providers would have to wait for

malicious players to act. Instead, Juniper Research believes that service providers must implement advanced anti-fraud detection systems upon development which can then be modified through the use of AI.

Customer expectations are also a driver. Simplification of identity services and identity-driven transactions are likely to be the catalyst for success in terms of which identity solution wins out. However, there is a high probability that a more pragmatic approach utilising best-of-breed options incorporated into a fuller ID Network or ecosystem will offer the requirement for many use cases.

Multiple driving forces are coming together to develop the requirements of identity use cases. Platforms such as CIAM (Customer Identity and Access Management) are morphing into powerful, API-enabled ecosystems, sometimes called 'ID Networks.' These so-called ID Networks are designed to have a more fluid approach to sharing identity data – some offering 'decoupled,' transaction-led ID interactions for enhanced flexibility and use models.

ID Networks are based on the idea of 'connecting the dots' around use cases. Being API based, the networks draw in the functionality of many of the identity technologies mentioned in the report. A typical system will be based on a controlling component, an IdOE (Identity [Data] Orchestration Engine) which is a multi-functional API. This acts as a central piece to manage the requirements of a service. The service will be based on rules of engagement. These rules reflect the needs at specific junctures in a user journey. For example:

- The user may be required to have identity attributes verified – the IdOE will call a verification service to perform this function.
- The user may be required to choose an existing identity account to federate login – the IdOE will offer a set of optional identity providers. The IdOE will handle protocol translations to allow for a wide choice of federated IDPs.
- The user may be required to add attributes to a new or existing identity account or during a transaction (eg banking details) – the IdOE will handle this and verify these additional attributes if requested. This may include checks that cover AML, sanction lists and behavioural monitoring.



- The user may be required to provide consent across various parts of the user journey pipeline – the IdOE would handle the collection of consents; sharing consent event data (eg log file) with a consent manager.

1.2.2 Competing Mobile Authentication Protocols

Whilst there is significant room for disruption from flash calling services on the established A2P market, it is of note that this disruption is limited to 2FA services. With continued investment into rich media services, such as RCS, Juniper Research expects operators to continue to be open to new methods of 2FA.

However, given how established A2P SMS is for 2FA services, Juniper Research anticipates brands and enterprises to cause a slow migration, as there is a continued reliance on A2P SMS for 2FA use cases. Additionally, the process for A2P SMS is already simple, and further benefits from flash calling for the end user are only attainable for Android devices at this point.

With traffic over operator-run channels, such as SMS and MMS, increasingly threatened by OTT messaging apps and flash calling, Juniper Research believes that network CPaaS platforms must focus on consolidating and improving customer experiences through the provision of a well-maintained solution.

One of the most immediate actions that need to be taken by market stakeholders is the amendment of existing agreements to cover the migration to flash calling channels. Many players, including CPaaS vendors and messaging platforms, have agreements in place with operators that guarantee a certain level of messaging traffic. However, if flash calling is to have an impact on the market, Juniper Research suggests safeguarding against any early movements which may impact their ability to meet contractual requirements. Additionally, given the long times to renegotiate these contracts, we suggest starting immediately to further guard themselves against this emerging technology.

1.2.3 The Unification of CPaaS and CCaaS

Juniper Research defines CCaaS as:

'A service that merges cloud-based contact centre infrastructure with contact centre processes. CCaaS provides a cloud-based customer experience business model that refines, integrates and streamlines customer interaction platforms.'

It allows enterprises to utilise contact centre software by purchasing only the technology they need, thus reducing the need for internal IT support.

CCaaS is closely coupled to the CPaaS market. However, they serve very different markets. Juniper Research's differentiations are given below:

- CPaaS: All traffic over CPaaS platforms is outbound from the enterprise to the user.
- CCaaS: All traffic over CCaaS platform is inbound to the enterprise from the user.

The lines between these two markets are becoming increasingly blurred; this is to be expected, as this sole differentiation of inbound and outbound communication can be managed together. Indeed, the benefits of doing so are considerable in the view of enterprises as it will enable more efficient customer service.

The omnichannel experience is imperative to customer experience, as it allows enterprises to offer the same quality of service across a variety of channels and ensure that all customers are served equally. In order to measure KPIs (Key Performance Indicators) across a range of communications channels, enterprises will have to learn to identify and track the clients across these digital channels in order to gather data and analyse the customer journey in order to provide insights into customer queries.

Most modern CCaaS solutions have omnichannel capabilities that can be applied to customer service. Customer service agents can use web or app-based software to



view customer interactions across a wealth of communications channels, including phone calls, messaging, live chat and social media. CCaaS revenue can supplement revenue from the more established CPaaS market. Indeed, there are similarities in the potential clients that use these services.

1.2.4 Growing Rich Media Traffic

There is also a greater demand for rich media technologies; this leads to further development for CPaaS providers on enabling their own clients to manage their content over these channels. This is most evident across the various CPaaS video channels that are offered; CPaaS platforms must ensure that the wide variety of services, including video transmission, streaming and personalisation can all be managed centrally over their platform. This trend is exacerbated when you consider the multiple media campaigns that can be running concurrently. Therefore, the need to manage these services in the simplest way will be a future differentiation point for CPaaS providers.

Rich media messaging will support the continuing growth of omnichannel strategies. A failure to support management apps into a CPaaS platform will lead to diminished interest from potential clients, especially as platforms target the onboarding of SMEs, as these companies are unlikely to have the in-house expertise to manage multiple channels.

This also highlights the need for CPaaS platforms' adoption of CDPs. Juniper Research believes that the level of personalisation over these new channels will be significantly improved by CDPs and their ability to create 'buckets' of users that have similar interests. As a result, this enables a greater level of personalisation on these buckets. However, for future growth of personalised CPaaS traffic, we expect CPaaS platforms to create a holistic view of each individual user, likely to be identified by the MSISDN (Mobile Station Integrated Services Digital Network), to create content automatically that is unique to users. This content must leverage AI to automate the

process and enable the creation of content for a substantial number of users in a short space of time.

i. In-messaging Payments

RCS, and subsequently RBM (RCS Business Messaging), provide notable benefits to the mobile payments market. RCS offers significant improvements over the established SMS standards, such as vendor authentication and the growing trend of conversational commerce.

However, if payments over RBM are to be successful, RCS will need to adhere to payments legislation, such as PSD2 (Payments Services Directive). This EU directive ensures the provision of Open APIs to enable account details to be shared, and third-party vendors to initiate payments via these details. Critically, it also requires all payments to be subject to SCA (Strong Customer Authentication), a 2FA process that includes possession (such as OTPs), knowledge, and inherence.

FIs (Financial Institutions) carry a high level of accountability for the prevention of financial crime. The implementation of comprehensive KYC and AML (Anti-money Laundering) policies is a crucial part of this. A key requirement of KYC is the identity verification of potential and existing clients to assess their potential risk in line with market specifics and global regulations. This ensures that all transactions are legitimate, within the law, and that the potential involvement in identity theft, fraud, money laundering and terrorist financing is minimised.

However, there are a multitude of payment solutions that could be implemented over RCS clients to fulfil the payment requirement. These include:

- Card Payments
- OEM Pay Solutions
- DCB (Direct Carrier Billing)
- Mobile Wallets (including OEM Pays)

However, not all of these services can be directly integrated into the RCS client itself. Whilst RCS standards allow for the viewing of third-party content in the app, a failure



of these services will have an overall impact on how users continue to use RCS payment services.

1.3 CPaaS Messaging Outlook

1.3.1 SMS

SMS is a well-established technology that will continue to provide CPaaS vendors with the majority of revenue over the next five years. Although ubiquitous, there is little room for innovation within the technology. Indeed, A2P SMS traffic can be migrated to other channels that provide operators and CPaaS vendors with greater revenue potential, such as RCS or flash calling for OTPs.

All regions will experience a decrease in average monthly handset traffic, owing to the growing popularity of OTT messaging apps such as Messenger, WeChat, and WhatsApp. As P2P traffic has continued to migrate to these channels, Juniper Research believes that operators have fundamentally lost this traffic to these providers and must seek to expand existing messaging portfolios in order to compete.

SMS remains popular as it has an open rate of over 99%; thus making it easier for enterprises to reach their own customers on their mobile devices. At present, SMS is most commonly used in a business messaging context for the issuing of notifications, reminders and OTPs.

Despite the limited innovation that has occurred over this technology, Juniper Research still anticipates that revenue from CPaaS SMS traffic will grow nearly 200% between 2022 and 2027. We have identified the following reasons for this growth:

- The migration of A2P SMS traffic from other messaging platforms and directly from operators. This owes to the low pricing of A2P SMS combined with the greater

capabilities and access to other channels provided by CPaaS platforms. When considering the future of A2P messaging, it is important to note that operator profit margins from SMS messaging remain tight. Rich media messaging services, such as RCS, offer a much larger profit margin, and therefore, there is motivation for operators to transition SMS use cases over to RCS. However, given the low cost of SMS, enterprises themselves will not be willing to migrate simple use cases to a more expensive channel.

- CPaaS strategies to onboard SMEs that have previously not leveraged SMS for B2C communication. This has been achieved through the offering of integrated APIs that enable the in-house management of marketing campaigns and traffic.

1.3.2 RCS

There is significant uptake in North America and Far East & China in terms of RCS penetration. There has clearly been a staggered development of RCS across multiple countries, owing to the uptake of smartphones and operators' support of the technology. Juniper Research expects this phase to continue over the next five years, as many operators prioritise other technologies, such as IoT or 5G networks, over RCS messaging standards. Additionally, the level of virtualisation over a network will continue to play a crucial role in the number of operator RCS launches.

A key hindrance to the growth of RCS-capable subscribers is the lack of support for RCS over iOS smartphones. Android has been a key proponent of the growth of RCS subscribers. However, there are other vendors, most notably Apple, that, if they fail to support the service, have the potential to severely impact the reach of the service. In the future, Juniper Research anticipates that Apple will continue to rely on its proprietary messaging service, iMessage, however, will support the service as the value of RCS as a communication channel becomes increasingly evident.

1.3.3 OTT Messaging

Historically, Juniper Research considered OTT business messaging as a rich media communication channel for use cases in which RCS was unsuitable. However, through the support from CPaaS platforms, it has since developed into an independent channel for business messaging.



As can be seen from figure 3.8, we expect the largest single sector to be Retail & eCommerce. The heaviest users of OTT messaging apps are in China, with WeChat being considered a 'first port of call' by users for many different services. However, the early development of the ecosystem in China has resulted in a closed ecosystem that has developed its own APIs for business messaging. In turn, this has led to very limited opportunities for CPaaS platforms entering the region.

We anticipate that the majority of conversational commerce revenue generated through OTT will be driven by the growth of omnichannel communications. Therefore, it is becoming increasingly important for CPaaS platforms and CSPs (Communication Service Providers) to support a wide range of messaging technologies. As the trend towards omnichannel communication continues, brands and enterprises will require the ability to reach their customers on their preferred channel(s), whatever those may be.

To support this growth, Juniper Research urges industry stakeholders to ensure that regulations between OTT messaging platforms are closely aligned, as a failure to do so will lead to enterprise frustration. This is due to many brands not having a dedicated developer team that is able to manage the specific regulations in each region for each OTT messaging application.

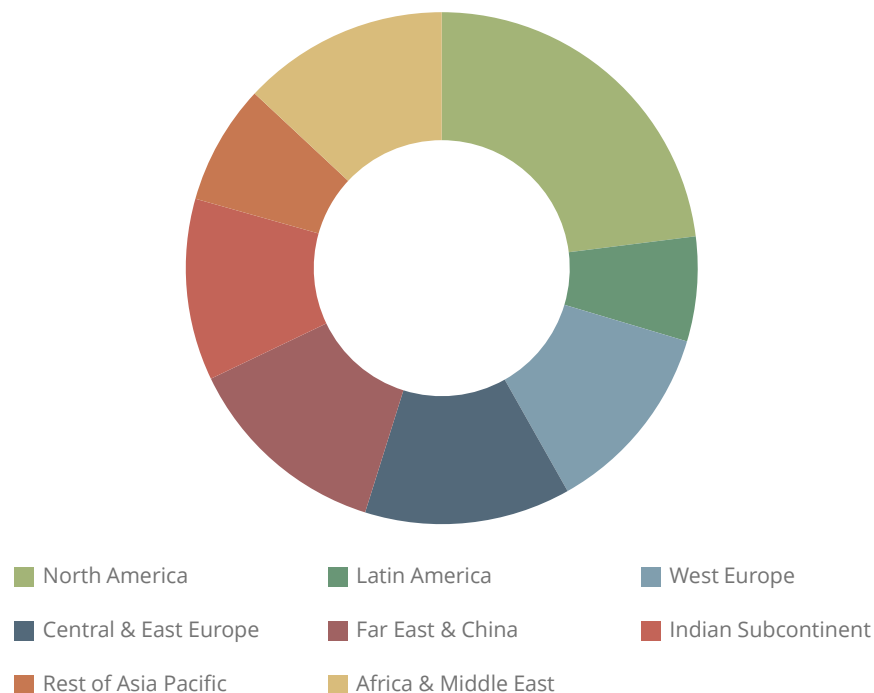
However, supporting a sufficient number of communication channels is no longer enough to ensure the success of omnichannel experiences. Vendors must look to include additional value-added services into their business model to create depth within existing communication channels. These value-added services include chatbot support, CDP integration, conversational commerce and the development of strong security measures. To integrate these value-added services, however, CPaaS platform providers must educate clients on the best practices to maximise return on investment.



1.4 Market Summary: Total CPaaS Market Revenue in 2025

The value of the CPaaS (Communications Platform-as-a-Service) market will reach \$29 billion globally by 2025, rising from \$16 billion in 2022. To capitalise on this substantial growth of 80% over the next three years, CPaaS vendors must focus on the development of managed services over their platforms. These services must enable the creation and management of rich media content over channels such as OTT business messaging, email and social media.

Figure 2: Global CPaaS Market Value in 2025: \$29.7 billion



Source: Juniper Research

- As markets become increasingly saturated with CPaaS service provision, CPaaS vendors must expand deeper into the SME (Small-to-Medium Enterprise) sector. In addition, CPaaS vendors will further focus on the provision of value-added features that enable platform users to fully maximise the benefits of rich media channels though the inclusion of tools, such as workflow builders and AI-based chatbot solutions.
- CPaaS vendors now compete on the capabilities of managed services to attract SMEs. As many of these smaller enterprises lack in-house development facilities, they will choose the CPaaS platform that provides the most comprehensive managed services for rich media channels.
- SMS has historically been the cornerstone of CPaaS revenue; SMS traffic revenue will still account for over 50% of all CPaaS revenue by 2025, owing to its established reliability in termination for services such as MFA (Multi-factor Authentication).
- However, rich media channels, such as email and social media will continue to expand, and account for over \$10 billion of revenue by 2025, representing over 40% of CPaaS market value. As a result, platforms that fail to include managed services for rich media services in three-year plans risk missing out on the substantial growth predicted for the CPaaS market.



Order the Full Research

Discover an extensive assessment of the growing CPaaS market in this latest report. Featuring regional analysis and evaluation of each of the channels that comprise CPaaS offerings, the research focuses on strategic recommendations for CPaaS providers, plus comprehensive 5-year forecasts for CPaaS traffic and revenue for each channel. Data is split across 60 countries and 6 key market verticals: banking, government & public services, healthcare, ticketing, travel & tourism, and retail & eCommerce.

Key Features

- **Market Outlook:** Assessment of key market trends, drivers and pain points anticipated to impact the growth of the CPaaS market, including:
 - Competing Mobile Authentication Solutions
 - CPaaS Security
 - Fluctuations in CPaaS Pricing
 - Growth of Rich Media & Managed Services
 - In-messaging Payments
 - Unification of CPaaS and CCaaS (Contact Centre-as-a-Service) solutions
- **CPaaS Channel Analysis:** Evaluation of the market outlook for 10 key CPaaS communication channels, including:
 - Email
 - In-app Push Notifications
 - Social Media
 - SMS

- Voice Services

- **Juniper Research Competitor Leaderboard:** Key player capability and capacity assessment of 18 leading CPaaS vendors, including:
 - CM.com
 - Infobip
 - Nexmo
 - Syniverse
 - Twilio
 - Zenvia
- **Regional CPaaS Market Analysis:** A regional assessment of the potential for CPaaS adoption across 8 key global regions.

What's in this Research?

1. **Market Trends & Opportunities:** Detailed analysis and strategic recommendations for the CPaaS market, looking into the future market outlook for CPaaS services and channels, across 8 key regions. This is aligned with extensive market forecasts and interviews with leading CPaaS platforms.
2. **Strategic Analysis:** Assessment of future prospects and developments of CPaaS; focusing on key trends and market challenges. The report also includes an evaluation of 18 leading CPaaS vendors via a Juniper Research Competitor Leaderboard.
3. **Interactive Forecast Excel:** Highly granular dataset comprising over 173,000 data points; allied to regional and sector analysis tools. Includes regional and key



country-level analysis, together with 5-year forecasts for CPaaS traffic and revenue.

4. **harvest Digital Markets Intelligence Centre:** Visualises all the data in easy to use and exportable graphs, tables and charts, and features continuous data updates for 12 months.

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Author: Sam Barker

Contact: For more information contact info@juniperresearch.com

Juniper Research Ltd, 9 Cedarwood, Chineham Park, Basingstoke, Hampshire, RG24 8WD UK

Tel: UK: +44 (0)1256 830002/475656 USA: +1 408 716 5483 (International answering service)

<http://www.juniperresearch.com>