



GETTING READY FOR RCS PAYMENTS

TOWARDS A NEW ERA FOR
BUSINESS MESSAGING:
INDUSTRY VIEWS, MARKET DATA
AND CASE STUDIES

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Foreword

RCS could put friction-free transactions inside rich messaging sessions. This is a big idea. MEF and its members are leading the conversation.

Excitement around RCS, the multimedia evolution of the SMS message, is growing, particularly when it comes to enterprise communications. Enabling payments is the next natural step to maximise the potential of the channel. Among the MEF community, payments and messaging are merging once again –as they did 20 years ago in the first mobile entertainment services.

The industry is now weighing up the potential of ‘conversational commerce’. It offers the possibility for consumers to talk to brands directly, and for brands to enhance this engagement with relevant buttons, pictures, maps, and AI-assisted questions and answers.

However, there is no commerce without buying. Payments must be included in the user experience if we are to reveal the power of the conversational commerce idea. Any brand that

pursues this concept will position itself as a leader in a very large (potential) market.

As in the early 2000s, there is skepticism. And the truth is that, as of 2019, RCS business messaging campaigns are mostly experimental. There is no agreed payment mechanism as part of the technology’s Universal Profile.

However, we are already seeing creative and practical approaches. KDDI and Vodafone have each launched live RCS services that support payment. Many payment options are available, such as new fintech solutions or device-based systems. The pathway to payment in RCS has started. In an omnichannel world, this may represent the first viable messaging payment model. Learn now, deploy everywhere.

Dario Betti
CEO, MEF



“Among the MEF community, payments and messaging are merging once again – as they did 20 years ago.”

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CEO, MEF



Introduction

Industry stakeholders are advancing the payments part of the RCS environment via proofs of concept and live trials.

What if consumers could make a payment inside a mobile messaging conversation?

No, not by clicking on a link to go to a specialist payment page, and entering their details there. But by touching a 'pay' button and completing a transaction immediately and safely – without going anywhere else.

This is a very attractive idea for both users and brands. It offers a new way to buy products and services, which is highly convenient. No web pages to navigate or apps to download.

It's also very safe. A messaging session is a tightly controlled environment. The mobile operator that curates it can authorise sellers – and mandate a range of security measures.

This, of course, is the promise of payment inside RCS business messaging.

RCS brings rich features to the default messaging app in the next generation of smartphones. It makes the messaging experience feel like an app experience. It can build in images, maps, coupons – and payments.

Making RCS payment work is a key objective for A2P messaging stakeholders. This is particularly the case for direct carrier billing (DCB), which can deliver important new revenues for MNOs.

So is RCS payment possible today? Yes and no. Operators can use existing APIs to process DCB payments in the background – as if an RCS message were an SMS message.

Meanwhile, for card payments, brands can route users outside an RCS message session to a specialist web payment page. There, they can enter their details to make a purchase.

Obviously, these scenarios do not constitute the universal experience described above.

In order to make a purchase quick, safe and contained inside the RCS app, the industry needs to agree technical specifications. It must decide whether to enshrine these specs inside the RCS 'universal profile' or find another route.

Those discussions are under way now. In this paper, we will present the key factors for RCS payments and explore its potential.

Making RCS payment work is a key objective for A2P messaging stakeholders. This is particularly the case for direct carrier billing, which can deliver new revenues for MNOs.



The journey to RCS payments

What is possible now? When will standards be agreed?

Will the industry add a payments standard to the Universal Profile? Not necessarily. The GSMA is currently gathering views on 'what might need to be added to the specification'.

As of mid-2019, the roll out of RCS is accelerating. Stakeholders are broadly pleased with its progress. However, the channel is not mainstream. As such, the industry has yet to codify a payment specification inside the Universal Profile.

Despite this, stakeholders are already experimenting with the concept – and discussing the best strategies for making RCS payment work well. Here are three important considerations.

1. Industry stakeholders are exploring the best way to implement a payment button inside RCS

RCS is not an app. It is not a proprietary alternative to Viber, Signal or Facebook Messenger. Rather, it is a blueprint that a huge number of MNOs, device makers and technical specialists must adhere to.

Hence the desire for a single agreed specification. With one spec, every RCS user can send and receive messages to every other user (and brand) regardless of handset, operator or country. This is the 'Universal Profile'. But agreeing the UP is no simple task. While

SMS comprises 160 characters, RCS supports images, maps, barcodes and more. It is much more complex.

Still, progress has been made. The latest version of the UP is 2.3. It codifies rich features such as group chat, file transfer, audio messaging, video share, multi-device, enriched calling, location share, live sketching, chatbot support and verified sender.

So, will the industry will add a payments standard to the UP? Not necessarily. At time of writing, the GSMA was gathering views on 'what might need to be added to the specification'. However, this could be a definition of webviews, the definition of a payment button, or something else. GSMA says it will make any new specifications to the UP in Q1 2020. But it says there is no timeline on a payments feature.

Niko Alexiadis, project manager for RCS at GSMA, says: "We are working on how we can facilitate enabling payments inside RCS. We've been doing qualitative research and looking at where additions to the specification might be required."

2. Payment in RCS is possible now – by migrating to a payments web page

Despite the lack of an industry standard, payment in RCS is possible now. Enterprises can invite customers to press a 'pay' button and then migrate them from the chat session and into a dedicated web-based payment screen. This is how Vodafone handles payments in its partnership with Telecoming and Wegow in Spain (see page 11).

In a similar vein, Japanese MNO KDDI has launched commercial RCS services that feature DCB and other payment options through a payment aggregator.

Enterprises can also experiment with a Google Pay transaction – at least in a test environment. A Google spokesperson told MEF: "Payment through Google Pay is available in beta in RBM at the moment, but not launched in production yet. Brands can develop use cases where customers can call GPay API from the agent and process payments (either through GPay or a third-party processor) outside of the RBM agent."

Some in the industry believe this process of linking to third party payment pages will serve brands perfectly well – especially for DCB-based transactions.

Damien Byrne, business development director at Boku, told MEF: "We're excited about what we might

be able to achieve with RCS. But I don't think we have to wait for industry-wide standards. We can use our existing billing connections, and the customer experience won't really be any different."

Others are keen to see a universally agreed API in the Universal Profile. Greg Hoy, director of product management for RCS Messaging at OpenMarket says: "Yes, it's possible to do payment now by handing off to a web page. But we really need APIs that are built into the UP standard, so the transaction can happen inside the message session seamlessly."

Ramy Riad, director of product management and partner channels at 3C, agrees. He says: "Brands want a plug and play option. They want to give consumers one payment box that's seamless across all carriers and payment types. That requires a universal API that exposes the MaaP platform and invokes a receipt inside the client."

3. Chat bots will be pivotal to the RCS payment experience

Rich messaging brings with it the potential for 'conversational commerce'. Here, the user can 'talk' to a virtual chat bot in conversational language. In most instances, a natural dialogue flow will move the user more quickly to their desired outcome than long menus and lists.

Some in the industry believe the process of linking to third party payment pages will serve brands perfectly well – especially for DCB-based transactions.



Brands seem committed to bots, which are far cheaper to deploy than human agents. And developing a bot is much more economical than building a native app.

For this reason, RCS will need chat bot developers' help to progress. Ian Germer, director of communication services at Orange Group, says: "Chat bots are important to the evolution of business messaging with payments. Users like dialogue as a user interface. But obviously you can't do effective conversational commerce without payment."

It helps that brands seem committed to bots, which are cheaper to deploy than human agents. And bots cost less to build than native apps. Gartner estimates that, by 2020, 30 percent of all B2B companies will use AI-powered agents to augment at least one of their primary sales processes.

The industry is aware of the importance of bots to RCS transactions. It's why the GSMA has a common API spec to make it easy for chatbot developers to connect to MaaP aggregators' RCS systems.

To simplify the integration between MNOs and chat bot platforms, the

GSMA is developing MNO to Partner API specifications. These APIs will reduce the integration and testing time normally required as part of a network to network interface (NNI). Currently, NNI requires extensive telecom knowhow and the timeframe can exceed six months.

For the moment, bot developers can support payments that re-route users outside of the bot. In the long term, the GSMA wants to minimise the work for bot developers by making payment part of the RCS Universal Profile.

Niko Alexiadis told MEF: "There are two options for integrating payments into RCS: either into the chatbot conversation or into the RCS client. The chatbot is easier, but in the long term the RCS client might be better. The question is: what happens when a user clicks on the button? The payment call has to connect to a payment platform, and that information might be stored locally or pulled in from somewhere else."

RCS payments: the options

The ideal payment scenario in RCS will be seamless. Users will see a button, click it and then authenticate (either with biometric or PIN) to complete the transaction. They won't leave the session. And they will be confident that everything is safe and secure.

However, this is not quite possible yet. So for now, users who click on a payment button must migrate away from the session. Many believe this is an acceptable process. Aggregators can use their experience to make it smooth. And customers might well be reassured by the extra steps needed.

Card payment

- A user pays with a debit or credit card
- The user is migrated to a dedicated web payment screen to enter details
- If the user is an existing customer with stored card details, she might be able to use a log in to pay without inputting all credentials.

Stored in-device card payment

- The user wishes to pay with a dematerialised card inside the device (ie Google Pay or Samsung Pay)
- He is migrated to a dedicated web payment screen that has integrated the Google Pay or Samsung Pay APIs
- He completes with a biometric authentication

Direct carrier billing

- The user is offered a 'pay by phone bill' option.
- She is migrated to a dedicated web payment screen that has integrated the operator's DCB APIs
- The billing system recognises the user and process the payment

For now, users who click on a payment button in a message must migrate away from the session to complete the transaction. Many believe this is an acceptable process. Aggregators can use their experience to make it smooth. And customers might well be reassured by the extra steps.

The potential of RCS payments

Faster user journeys, customer acquisition, richer engagement. There are many reasons why mobile insiders and brands are excited by in-message payments.

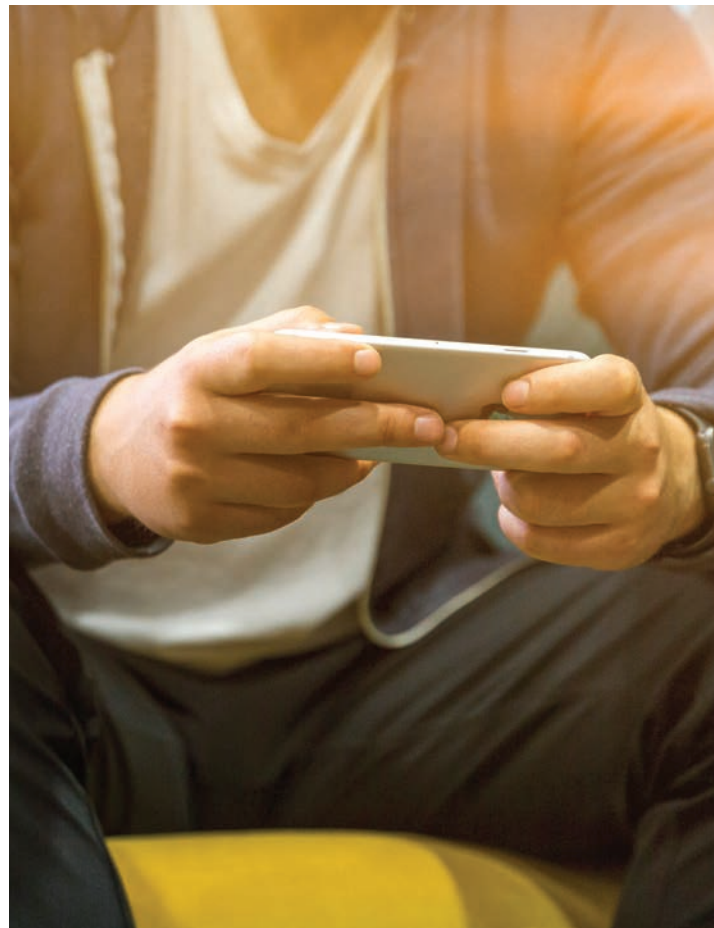
If executed well, RCS payments will undoubtedly deliver more revenues to aggregators, MNOs and brands.

But this is not merely a question of adding a new payments button inside a messaging session. The challenge is to make payment part of a wider experience that consumers find delightful.

To make this happen, the industry must combine payments with complementary services. A good example is the identity project, Mobile Connect.

Mobile Connect is a universal log-in solution agreed by most of the world's operators. It allows a user on a website or app to auto-fill personal details merely by disclosing their phone number. These details are held securely by the operator. No personal information is shared without permission.

Mathias Höllerl, MD of DIMOCO Messaging, believes integrating Mobile Connect inside an RCS session will enhance the payment process. He says: "Mobile Connect can guarantee the user's identity and therefore remove the need for otherwise mandatory payment fields."



The challenge is to make payment part of a wider experience that consumers find delightful. To make this happen, the industry must combine payments with complementary services.

Stakeholders believe an RCS payment can be the start point for a rewarding long term relationship with a customer. This is far harder to achieve in a series of 'plain' SMS texts.

"The combination of Mobile Connect, RCS and DCB into one product can be a powerful proposition for MNOs. It has the potential to turn an operator into a payment processor that can offer universal coverage for small payments. After all, not everyone has a credit card."

Other stakeholders believe an RCS payment can be the start point for a rewarding long term relationship with a customer. This is far harder to achieve in a series of 'plain' SMS texts.

Pascal Dufour, VP for MENA & Turkey at Digital Virgo, says traditional VAS businesses could benefit most. "We see a lot of projects based on PSMS (voting, sending greetings, etc) that could be much more attractive for users when implemented in RCS," he says. "Brands will be able to deliver more information and present it in an attractive and customised way."

"In voting for instance, instead of the usual SMS 'ping-pong', the user could be offered a more immersive conversation, updated with voting results. It's a chance to stay in contact with the audience, offer value added services and build loyalty."

The same is true for charity campaigns. With SMS, it's hard to start conversations. But by sending RCS rich cards, a charity can keep donors involved. Nick Millward, VP Europe at mGage, says: "It's hard to get people to download an app. But with RCS, charities

could use images and videos to improve donations, which they could offer by carrier billing inside the message." For the moment, the above scenarios are mostly hypothetical. However, some brands are already experimenting, and we have highlighted three such case studies on the following pages. >>>



Case study: RCS payments for ticketing

Vodafone Spain, Telecoming and Wegal joined forces to launch the world's first live RCS payment service.

Vodafone was (probably) the first MNO to launch a live service incorporating DCB payments inside an RCS session. The project is a partnership with Telecoming and live music specialist Wegow.

Users can scan a barcode to start an RCS conversation with the Wegow chat bot. The bot then asks them a series of questions about their taste in music, their location and the dates they are interested in. At the end of this process, the user can choose to book a ticket.

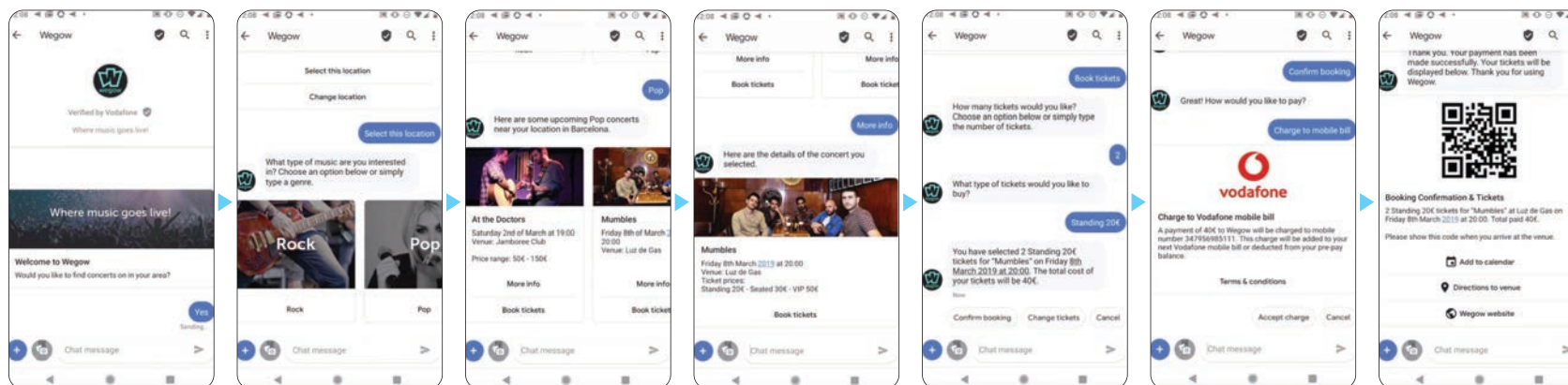
She is then presented with the option to pay by phone bill. A click migrates the user to a specialist Vodafone payment screen to complete the transaction.

No further authentication is necessary. This is possible because Vodafone had authorised Wegal as a sender. As such, messages contain the Wegal logo and corporate colours.

In this service, only a DCB payment option is available. This is because Vodafone has a security concern over card payments. It says the credit card number and CCV remain visible in the message session – and will therefore stay on the phone unless deleted.

Vodafone has proposed the masking of these details. It believes they should be blurred out after being typed. It wants this feature to be included in the RCS Universal Profile.

These screenshots reveal how the user is guided seamlessly from discovery to payment.



Case study: RCS with Mobile Connect

Orange's 'Shopbot' demo shows how an e-commerce site might build an RCS payments user journey. The process incorporates Mobile Connect identity services.

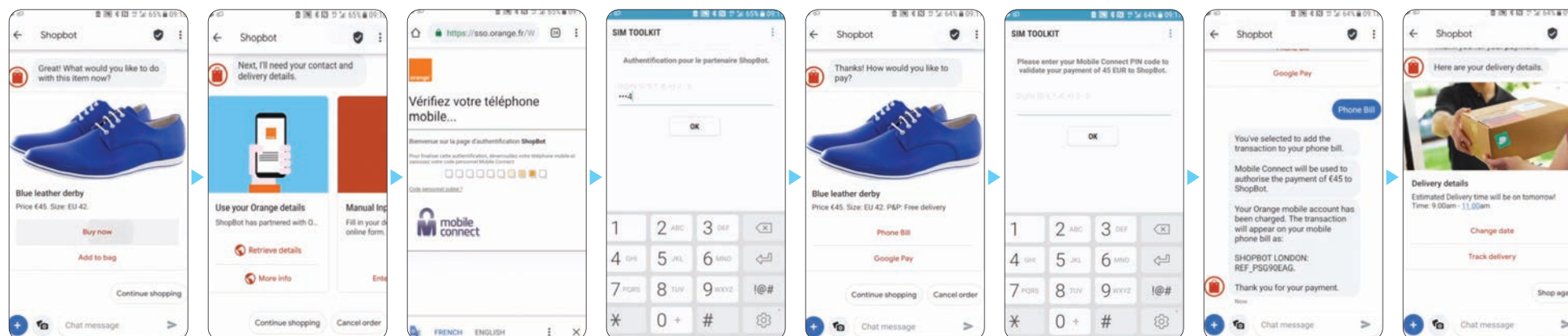
Orange's 'shopbot' is a hypothetical product. It shows a user shopping for shoes inside an RCS chatbot. The bot asks questions and displays images and carousels so that the user can get to his item quickly.

At the delivery stage, the bot asks for address details. It then offers two options: 'manual input' or 'use your Orange details'. Choosing the latter displays a PIN entry box. Here the user enters his Mobile Connect PIN. The Mobile Connect functionality is already pre-installed on the SIM.

On entering the PIN all the user's personal details are displayed. Orange will share these details with the vendor only when he confirms. On doing this, he is re-routed back to the bot.

Now, he can pay. In the demo, he chooses 'pay by bill' and the same Mobile Connect PIN process completes the payment securely. Finally, the bot displays all the order details and give the option to change date or track delivery.

These screenshots reveal how the addition of Mobile Connect can increase security and speed the customer journey.



Case study: Streaming subscriptions

Netflix is experimenting with RCS aggregators on payment proofs of concept, which could simplify new sign-ups.

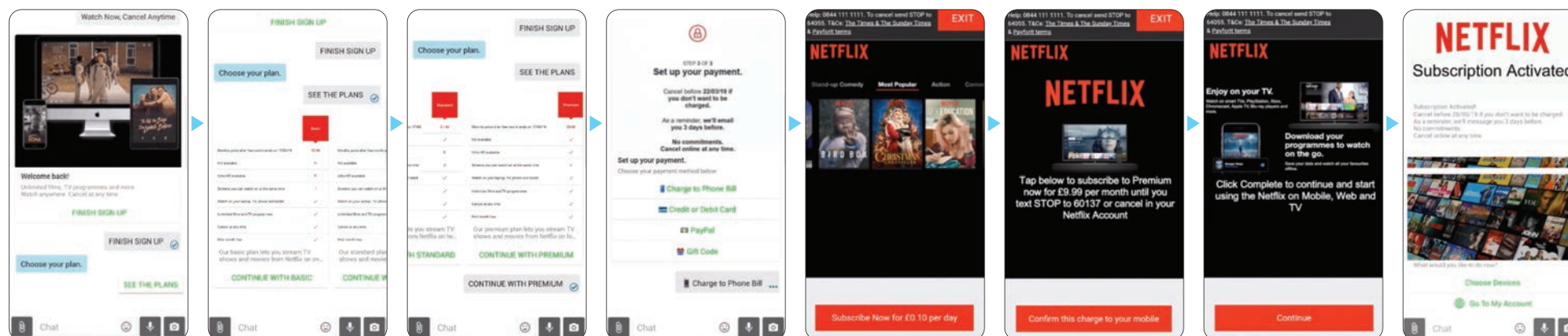
The world's major streaming services already work with operators to create subscription bundles that can be paid for using operator billing.

They see the arrangement as a good channel through which to reach new customers outside the app stores – and a chance to reach customers without credit cards. RCS has the potential to boost the effectiveness of this outreach still further.

The streaming giants can create rich A2P messages with carousels that display multiple subscription offers (week, month, three months for example).

One aggregator has already built demo proof of concept campaigns for Netflix. The screenshots here reveal how an RCS session might offer users a simple mechanic for signing up.

Streaming service providers see rich messaging as a promising direct to consumer channel. These screenshots show one possible consumer journey.



Weighing up the competition

The OTT messaging players are well aware of the promise of conversational commerce. Here's an overview of their experiments in the payments space.

Given the sensitivity around advertising in such a private medium, there is a sense that commerce and payments could be the best way for OTT players to monetise their apps.

Enterprise messaging in 'over the top' (OTT) chat apps is relatively immature. SMS still dominates the business messaging space in western markets.

The market for payments inside chat apps is even less developed. That said, the OTT players are now stepping up their ambitions. Given the sensitivity around advertising in such a private medium, there is a sense that commerce and payments could be the best way for OTT players to monetise their apps.

So RCS is entering a highly competitive field. Here is a summary of the activity of the OTT players.



WeChat

In China, payment in messaging is highly evolved. Chinese consumers do most of their shopping inside apps such as WeChat. Last year alone, the country's customers made 60.5 billion mobile payment transactions worth \$41.3 trillion. The country's total mobile payment

transaction volume for 2018 stands at RMB 277.4 trillion (US\$41.3 trillion), up 36.7 per cent from the previous year.



iMessage

Apple launched Business Chat feature in 2018 in iOS 11.3. It gives iMessage users the option to talk to businesses inside the chat app. In parallel, Apple has been slowly rolling out payment services for person-to-person usage. In 2017 it announced a function that lets users send and request money from contacts with one tap. Once a peer-to-peer payment is sent, the cash balance is stored in the Apple Pay virtual card in the Wallet App. Users can then transfer it to their bank account. This service is currently available only to US users.

Although Apple has also made it possible to use Apple Pay as part of Business Chat in iMessage, the feature would appear to be scarcely used.



WhatsApp

WhatsApp launched its WhatsApp Business app in January 2018. It lets firms provide useful information and serve up quick replies to customers. WhatsApp

claims to have more than five million business users. It does not yet offer shopping and payments.

WhatsApp began piloting a version with payments in India in 2018. However, the launch has been repeatedly pushed back due to regulatory questions.



Instagram

Instagram announced shopping features in March 2019. It's 'Checkout' feature ensures that users no longer have to navigate to the browser when they want to buy.

Users can pay with Visa, Mastercard, American Express, Discover and PayPal.



Facebook Messenger

Facebook's messaging payment strategy has been unpredictable. There have been persistent rumours yet little demonstrable progress.

For example, the company launched a P2P payments option inside Facebook Messenger in 2017. However, it deactivated this feature in the UK and France in April 2019.

That said, Facebook's recent focus on privacy appears to have put payments back in the spotlight.

At Facebook's F8 developer conference, CEO Mark Zuckerberg outlined plans to launch mobile payments on its WhatsApp platform across several countries in 2019.

He stated: "I want to make it as easy to send money to someone as it is to send a photo... Overall payments and private commerce is one of the areas we're really excited about."

In June 2019, Facebook revealed details of a digital payments system based on cryptocurrency (known as Libra). The company wants to launch the service by the end of this year, though regulatory issues might prevent this.

Facebook's recent focus on privacy appears to have put payments back in the spotlight. At Facebook's F8 developer conference, CEO Mark Zuckerberg outlined plans to launch mobile payments on its WhatsApp platform across several countries in 2019.



REFERENCES

About RCS

A brief statistical overview of the state of the RCS market.

Market projections

The A2P messaging market was valued at \$17.0bn in 2018 (Mobilesquared). This could rise to \$26.61bn by 2022. At present, the RCS-specific A2P market is negligible. However, Mobilesquared says it will hit \$500m in 2020 and reach US\$11.4bn by 2023*.

▪ Devices

Today, RCS is live on Google-branded devices such as Pixel and Samsung handsets such as Galaxy S8, Note 8, Note 9, S7 and S7 Edge. Some Motorola and LG devices also support RCS. Apple is rumoured to be in discussions with the GSMA about supporting the platform.

▪ Operators

The GSMA says 76 operators have launched RCS. It forecasts an additional 59 operator launches over the next 12 months.

▪ Users

User numbers are modest. Mobilesquared says, as of the end of 2018, there were 203m. That's just 0.3 per cent of all smartphone users. However, it projects one million users by 2020.

RCS for enterprise users

To make RCS work as a business-to-consumer channel, brands need to try it out. That's why the market's various enablers have launched

RCS business messaging (RBM) programmes. These schemes provide the following benefits to enterprises, aggregators and developers:

- A single point of integration into MNO's MaaP platforms
- Training and technical support
- Access to APIs, pre-production customer demos, use cases and proofs of concept

RCS: Messaging as a Platform (MaaP)

The rich features inside RCS make it different from previous telephony-based services such as voice and text. Thus, if a brand wants to launch an RCS campaign, it needs to create and execute a project using a SaaS (software as a service) type set-up.

This process is called Messaging as a Platform (MaaP). Typically, a brand will connect into a MaaP solution through a specialist aggregator. It can then build its own RCS campaigns, which it can launch via a self-service web dashboard.

MaaP APIs reduce the integration and testing time normally required as part of a network to network interface (NNI). No telecom knowhow is needed.

* <https://mobilesquared.co.uk/global-rcs-business-messaging-forecasts-by-operator-country-region-os-2018-2023-databook-final/>



Table of acronyms and technical terms

| | |
|--------------------------------------|---|
| A2P, Application-to-Person | Messages sent from an application to a device for a person to read. |
| Chatbot | An application designed to manage a conversation with a user using natural language interaction and interactive options. |
| Hub/Messaging Hub | Hubs provide national and international connectivity for RCS services. |
| IP | Internet Protocol. |
| MaaP, Messaging as a Platform | The term is often used to refer to: <ul style="list-style-type: none">▪ A paradigm shift in business messaging from a simple exchange of text messages exchange to new forms of interactive multimedia conversations deeply integrated in commerce, payment, service fruition.▪ (By extension) the service platforms that support MaaP services. |
| MNO | Mobile Network Operator. |
| NNI | Network-to-Network Interface. |
| OTT | Internet messaging solutions providing an 'over the top' service on mobile devices without going through the MNO billing system. |
| P2A, Person-to-Application | Messages sent from a person to interact with an application interface. Also known as conversational messaging. |
| P2P | Messages sent 'peer to peer' between users for personal communication. |
| RBM | RCS or Rich Business Messaging is the implementation of communication services by businesses using RCS. Also known as RCS Enterprise Messaging or Rich Business Messaging (RBM). |
| SMS | Short Message Service. |
| Short Code | Short digit sequences that are used to address messages in the Multimedia Messaging System and SMS systems of mobile network operators. |
| Universal Profile 2.0 | The GSMA's Universal Profile is a single, industry-agreed set of features and technical enablers developed to simplify the product development and global operator deployment of RCS. It contains core features such as capability discovery, chat, group chat, file transfer, audio messaging, video share, multi-device, enriched calling, location share, live sketching and rich cards. |

About MEF

Established in 2000, the Mobile Ecosystem Forum is a global trade body that acts as an impartial and authoritative champion for addressing issues affecting the broadening mobile ecosystem. As the voice of the mobile ecosystem it provides its members with a global and cross-sector platform for networking, collaboration and advancing industry solutions. The goal is to accelerate the growth of a sustainable mobile ecosystem that delivers trusted services that enrich the lives of consumers worldwide.



About MEF's Future of Messaging Programme

Launched in 2015, MEF's Future of Messaging Programme is a dedicated industry programme that promotes a competitive, fair and innovative market for mobile communication between businesses and consumers. Programme participants represent different regions and stakeholder groups working collaboratively to:

- Produce and publish best practice frameworks, papers and tools to accelerate market clean-up and limit revenue leakage
- Educate buyers of messaging solutions
- Promote business messaging as a premium and trusted channel
- Drive knowledge across the ecosystem of new platforms, technologies and procedures to address the evolving landscape
- Develop the value-chain to support new use cases





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