P2A Discovery for RCS

February 2020

Executive Summary

Organisations pay significant money for services which help people find them. Such 'discovery' takes many forms, including digital marketing, to appear in search results, social media feeds and websites, offline advertising which includes the organisation's contact details, and placing apps in app stores. Discovery may then lead to an interaction, which can in turn deliver a product or service, useful information or customer service, or lead to a purchase and order fulfilment support.

For the RCS Business Messaging (RBM) channel to be successful in Person to Application (P2A), users need to understand how they can establish a chat dialogue with a business or organisation. Questions to be addressed include "What is the organisation's address for RBM chat?" "How do users find it?" "What if a user has a generic intent in mind and not a specific organisation?". This whitepaper outlines various discovery methods which can lead to RBM interactions, and potential monetisation models arising from enabling discovery.

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Introduction

'Discovery' is a billion-dollar business. Web search, app stores, physical advertising, digital marketing, social media marketing, trade directories are all major industry sectors, helping users discover the organisation's products and services.

When a user has a specific need or intent and turns to their mobile phone for help, at that moment, they are highly engaged and potentially highly valuable to any organisation who could fulfil that need. Therefore, organisations pay to be discoverable and discovered, allocating significant marketing budget to reward the owners of any platform which can successfully deliver new leads and help existing customers find them rather than a competitor. The more a discovery platform knows about its users, the more targeted discovery can be and the higher the potential for monetisation.

Messaging is becoming the channel of choice for many users and organisations, with potential to deliver better customer experience, higher customer satisfaction and lower costs than existing channels. This is particularly true in the area of customer service and support, as call centres migrate to contact centres.

RCS Business Messaging (RBM) offers an exciting new messaging channel for mobile users to discover and communicate with businesses, and for businesses to engage mobile users – all via the default messaging client on a phone. RBM combines media-rich content, carousels, quick replies and bot verification to deliver a compelling channel for both outbound (A2P) and inbound (P2A) communications, whether it be for marketing, customer care, service fulfilment or conversational commerce. RBM defines several dedicated discovery capabilities, as well as leveraging established methods such as "Text ABC to 65073" or "Click to chat" to allow users to enter a competition, vote, find out more, access customer service, etc.

This paper outlines some of the major options, by which end-users (consumers, business users, employees, customers) may discover an organisation (businesses, brands, charities, local authorities, etc.) and start an RBM chat dialogue. It is not intended to recommend any particular discovery method but should be of interest to mobile operators, messaging service providers, marketing agencies and organisations considering the RBM commercial opportunity.

The term 'bot' is frequently used throughout this paper; however, 'RBM End Point' is probably a more accurate term. In practice, an organisation may automate message responses using a chatbot or may route messages from users to a customer service agent.

Assumptions for RBM discovery

The following set of assumptions may apply across the various stakeholders involved in RBM.

Organisations

- Want end users to communicate with them via the RBM channel
- Often need to be discovered by end users, as they may not know the user or their MSISDN, or may not have user permission to contact them
- Want to be discovered in multiple ways and via various channels (physical adverts, web sites, email, search, directories etc.), wherever users are present
- Expect discovery of their RBM bot to be simple and intuitive for end-users.

Mobile End Users

- Want to communicate with organisations via the RBM channel
- May (or may not) already know the brand or organisation they want to chat with
- May be open to suggestions for a brand, based on a generic intent
- Expect the discovery and chat initiation to be simple and intuitive
- May (or may not) be comfortable with the organisation knowing their MSISDN
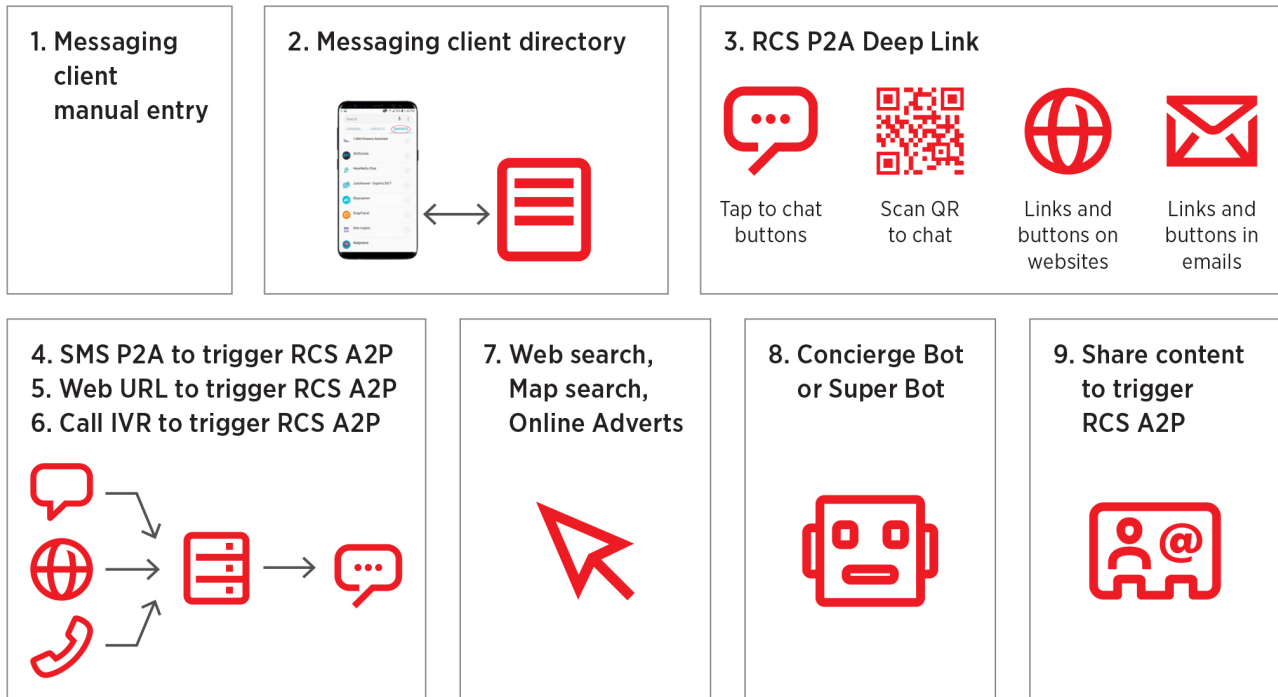
Mobile Network Operators (MNO)

- Want to provide a secure, trusted communication channel between end users and organisations - complying with all legal and regulatory requirements
- Want to monetise the RBM channel through various approaches including P2A discovery

Service Providers (SP)

- Offer platforms and services to organisations which facilitate mobile users to discover organisations who are present on the RBM platform.
- Consist of various parties offering different service enablers including messaging aggregators, MNOs, web service providers, business directory service providers

Discovery Scenarios

Discovery in the RBM context can be achieved in multiple ways depending on the organisation's preference, their messaging service provider, the user's messaging client functionality and the MNO's RBM platform capabilities. Nine discovery options are shown below and further explained in this paper.

1. Messaging client manual entry	2. Messaging client directory	3. RCS P2A Deep Link
		Tap to chat buttons · Scan QR to chat · Links and buttons on websites · Links and buttons in emails

4. SMS P2A to trigger RCS A2P 5. Web URL to trigger RCS A2P 6. Call IVR to trigger RCS A2P	7. Web search, Map search, Online Adverts	8. Concierge Bot or Super Bot	9. Share content to trigger RCS A2P

Scenarios 1, 2 and 3 provide 'native' RBM P2A discovery and rely on features specified in RCS Implementation Release 2 (IR2).

Scenarios 4, 5, 6 and 9 can be deployed based on RBM A2P Basic IR1[1] features in market today.

Scenarios 7 and 8 rely on 3rd party commercial offerings and could use either IR1 or IR2 capabilities.

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[1] IR1 – Implementation Release 1 (A2P Basic) of UP2 Specification. IR2 – Implementation Release 2 (RCC.73) adds RCS P2A features from UP2.2 Specification, intended for implementation, accreditation and deployment by end 2019.

Scenario #1: Messaging client manual entry

Overview

The mobile end user manually enters a bot address in the 'To' field of their RCS messaging client's chat composer. Matching bots are presented to the user who selects one and starts an RBM chat.
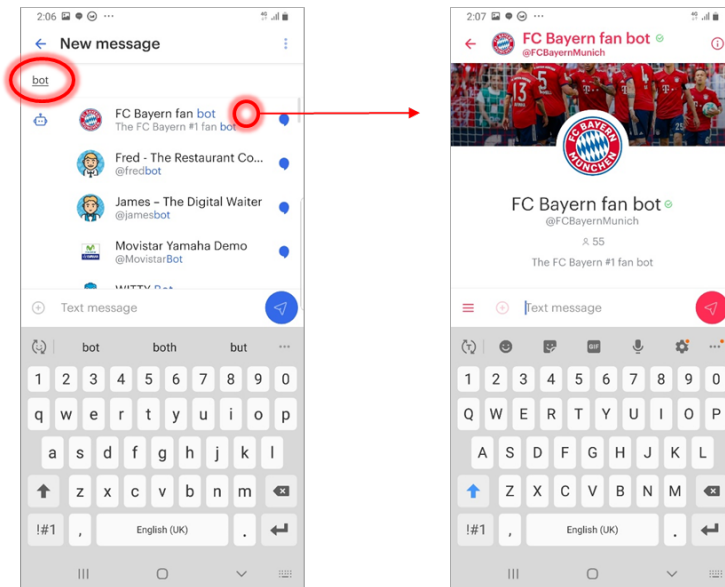
Detail

1. The organisation advertises it's bot address, or the user is aware through word of mouth or guesses. Supported address formats include E.164 phone number, short code, email address, Service ID. Any unique string could potentially be used.
2. The user manually enters the known chatbot address in the message client 'To' field of the chat composer. The bot name and icon are shown to user.
3. If the user enters anything else, a search function may be performed by the RBM platform to identify available chatbots matching the user input.
4. When user selects the bot to start a new conversation, they are shown a bot-specific introduction screen with a button which triggers the first RCS P2A message to the bot
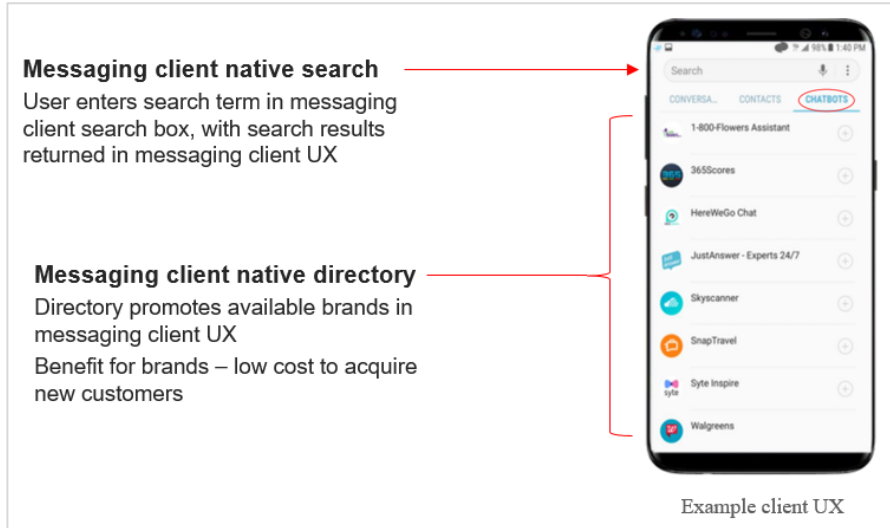5. The bot replies with an RCS A2P message

Specification and Implementation

- Specified in UP 2.3 (RCC.71 v2.3 R15-4-13, R15-4-13-1, R15-4-15)
- Required in IR2 for Q4 2019 implementation.
- Not supported by all client vendors, some appear reluctant to implement. E.164 phone number-based discovery of an RCS bot is not even supported by all messaging clients. MNOs are recommended to request support from their messaging client vendors.
- Refer to Appendix for a note on Anonymisation.

Scenario #2: Messaging client directory

Overview

Bots are displayed to the mobile end user from in their RCS messaging client. The list of available bots may be further refined by the user entering a search term. The user selects the desired bot to start an RBM chat.

Messaging client native search

User enters search term in messaging client search box, with search results returned in messaging client UX

Messaging client native directory

Directory promotes available brands in messaging client UX

Benefit for brands – low cost to acquire new customers

Example client UX

Detail

1. The MNO configures the RBM directory service provider used by the messaging client at the initial RCS client provisioning (the ACS configuration document includes the URL of the RBM directory server). The directory service may be the MNO's, or one provided by a 3rd party. The MNO may also configure a bot search provider.
2. The RBM directory is populated with bots registered with the RBM Service Provider / MaaP Platform.
3. End user navigates to the bot directory in their messaging client UI and is presented with a list of available bots ordered by the directory back end logic.
4. The list of available bots may be further refined by the user entering a search term, which is sent to the RBM directory/search/address resolution capability and new results are returned to the messaging client for display to user.
5. When user selects a bot from the list to request to start a new conversation, they are shown a bot specific introduction screen (the Info card) and a button which opens the conversation with the bot (and can trigger the first RCS P2A message to the bot, depending on OEM implementation).
6. The bot directory server and Info server produce transaction logs allowing the MNO and bot owner to understand the volumes of search results and Info card retrievals.

Messaging client screens showing UX from Bot directory, Bot Info card to RCS dialogue.

| Message threads | Bot directory | Bot Info card | RCS dialogue |
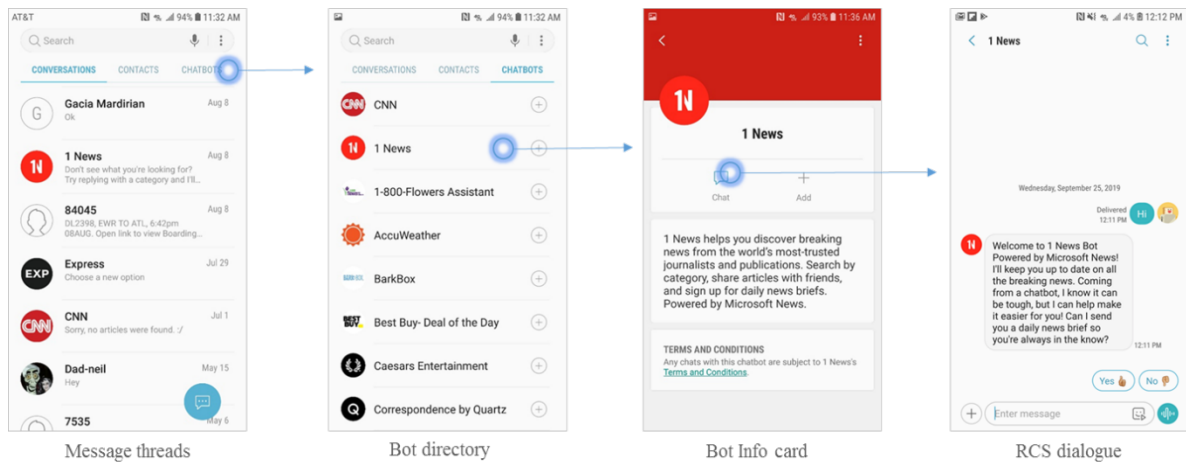
Specification and Implementation

- Specified in UP2.3 (RCC.71 v2.3 R15-4-1 to R15-4-10. RCC.07 v9 3.6.3.1, 3.6.3.2)
- Required in IR2 for Q4 2019 implementation.
- Supported by some client vendors in specific markets already (e.g. AT&T, S Korea, Japan)
- Some client vendors appear reluctant to implement
- Potential UP2 spec enhancements; enable the display of structured lists, categories and promoted bots to be presented in messaging client directory UI.
- Refer to Appendix for a note on Anonymization.

Demo

See shorturl.at/zNWY6 for a video from Tatango showing Samsung's Messaging Client directory implementation with the AT&T RCS directory, and how users can add chatbots to their contacts.

Scenario #3: RCS P2A Deep Link

Overview

An organisation wants to provide users a "click to chat", "tap to chat" or "scan to chat" from their digital media (website, email) or physical media (advert with QR code) to allow mobile end users to initiate an RBM dialogue. The organisation is provided with a deep link by a Service Provider (e.g. an aggregator or MNO), which when invoked by a user with an RCS enabled device, opens the messaging client, shows the bot information and allows user to seamlessly start an RBM chat to the bot (using an RCS P2A message from the user's messaging client).

- Link or button on brand's website, in emails, adverts
- The brand owns its content and specifies visual design and link invoked
- The link opens up messaging client and initiates RCS chat with brand

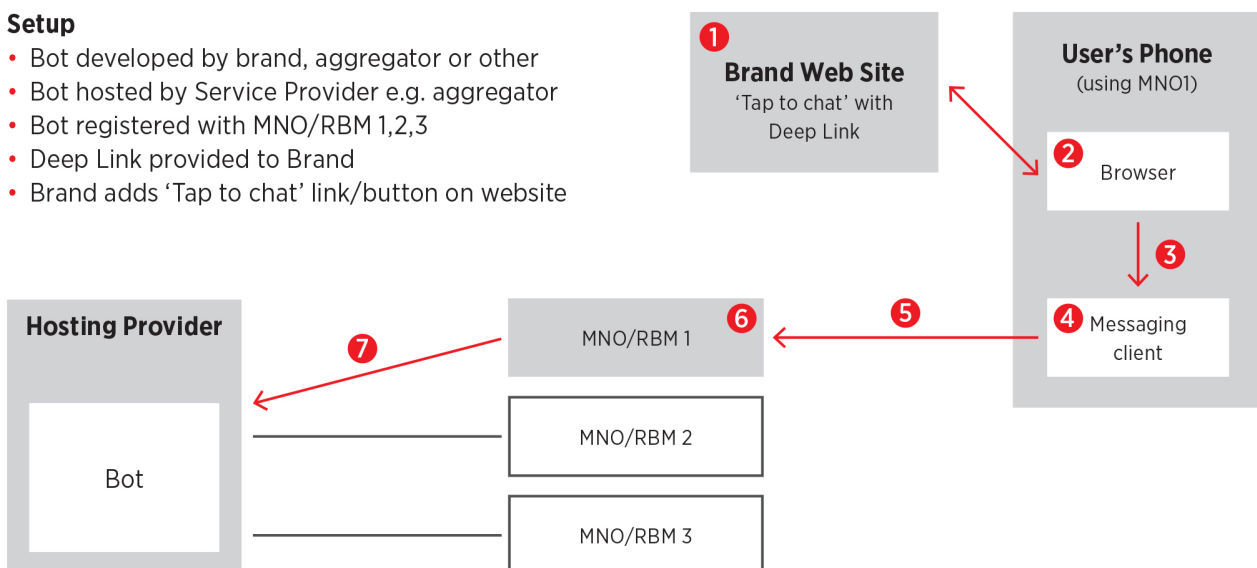| Tap to chat buttons | Scan QR to chat | Links and buttons on websites | Links and buttons in emails |

Detail

The following steps occur:

1. Organisation puts a UP2 formatted SMS: link in their digital media (web pages/email/QR)
2. End-user opens link from mobile phone (browser, email client etc)
3. OS passes link to Messaging client
4. Messaging client parses the link to get Service ID
5. Messaging client sends request to RBM platform
   a. If client can connect to RBM platform, OK
   b. If client cannot connect to RBM platform, NOK, request fails or falls back to SMS
6. RBM platform looks for registered bot in its chat bot directory to resolve the bot host
7. User is shown a bot-specific introduction screen with a button which triggers the first RCS P2A message to the bot
8. Bot replies with an RCS A2P message

Setup
- Bot developed by brand, aggregator or other
- Bot hosted by Service Provider e.g. aggregator
- Bot registered with MNO/RBM 1,2,3
- Deep Link provided to Brand
- Brand adds 'Tap to chat' link/button on website

❶ **Brand Web Site**
'Tap to chat' with Deep Link

User's Phone
(using MNO1)

❷ Browser

❸

Hosting Provider

Bot

❼

MNO/RBM 1 ❻

❺

❹ Messaging client

MNO/RBM 2

MNO/RBM 3

Specification and Implementation

- Specified in UP2.3 (RCC.71 v2.3 R15-4-11, R15-4-12, R15-4-15. RCC.07 v9 3.6.3.4)
- Required in IR2 for Q4 2019 implementation.
- Client Vendor support: partial, not committed by all client vendors
- Refer to Appendix for a note on Anonymization.

UP2 deep links use the SMS: URI. It requires the default messenger app to be invoked and process the body parameter as per the spec. The link contains a phone number (for legacy device/SMS), the body contains an RCS Service ID (envisaged to include an RBM platform in its address). The optional suggestions parameter in the link can be used to display a suggested chip list to the user, providing context and easy interaction.

*example link (elements supported by SMS in red): sms: *+15012011657*?body= *tell%20me%20about%20checking%20accounts*&service_id=*bot%40botplatform.example.com*&suggestions=*InN1Z2dlc3Rpb25zIjogW3 sKICAgICJyZXBseSI6IHsKICAgICAgImRpc3BsYXlUZXh0IjogIk9ZW4gYSBjaGVja2luZyBhY2NvdW50IiwKICAgICAgInBvc3RiYWNrIjo

Messaging client support for UP2 Deep links is a key dependency for this discovery model. For example, Android Messages is widely used in some markets and supports the basic SMS URI, but not the body parameter and processing its values, at the time of writing. MNOs are recommended to the request support of IR2 from their messaging client vendors.

Demo

See shorturl.at/rABF5 for a video from WIT showing a QR encoded with a P2A Deep link to a Visilab RCS chatbot, being decoded and launching the WIT Messaging Client which takes the user to the Visilab RCS chatbot information file. The user accepts T&Cs and taps 'start' to initiate an RCS P2A message to the Visilab bot.

Scenario #4: Basic SMS to trigger RCS A2P

Overview

An organisation publishes a number, to which users send an SMS. Using traditional SMS P2A discovery mechanisms, the SMS is routed to a 'Trigger Server', which initiates an RBM dialogue by sending an RCS A2P message from the bot to the user.

- Brand advertisement with a call to action
  - Text "abcd" to advertised number
  - Scan QR to chat

- User responds to call to action, initiating an SMS from messaging client

- SMS routed to a Trigger Server

- Trigger Server maps to the brand's RCS bot and prompts bot to send an RCS A2P message to user, inviting dialogue

Text "Park" to 903335 or scan Ezy-Park code & pay by phone!

(QR encoded SMS:903335:Park)

Example courtesy of Orange

Detail

A Trigger Server is operated by a Service Provider, e.g. an Aggregator or MNO. The Trigger Server can receive SMS from any user. SMS messages sent to a number (N) are processed by the Trigger Server and the Trigger Server is connected to the organisation's RCS Bot. A unique number N could be assigned per bot, or N could be shared and a keyword (K) assigned to route to the specific bot (as per common SMS P2A practises today). Following steps apply:

1. The organisation is given a number N (Short Code or E.164 number) and potentially keyword K.
2. The organisation advertises with a call to action, e.g. "Text K to N", "Scan QR" or "Click to chat"
3. SMS is composed in messaging client and user taps "send" to initiate a P2A SMS. Methods to compose the message include -
4. User manually composes SMS to N with message body K
5. The user scans QR code (QR code format SMS:N: K). QR reader decodes, informing user it is a message to N with body text K. User confirms and an SMS to N is pre-populated with body text K which can be a keyword and/or a contextual message for user's benefit
6. The user taps a link on a web page/email/app from their phone (link format SMS:N?body=K). An SMS to N is pre-populated with body text K which can be a keyword and/or a contextual message for user's benefit
7. SMS is routed to Trigger Server
8. Trigger Server knows user MSISDN from the received SMS, looks up N/K
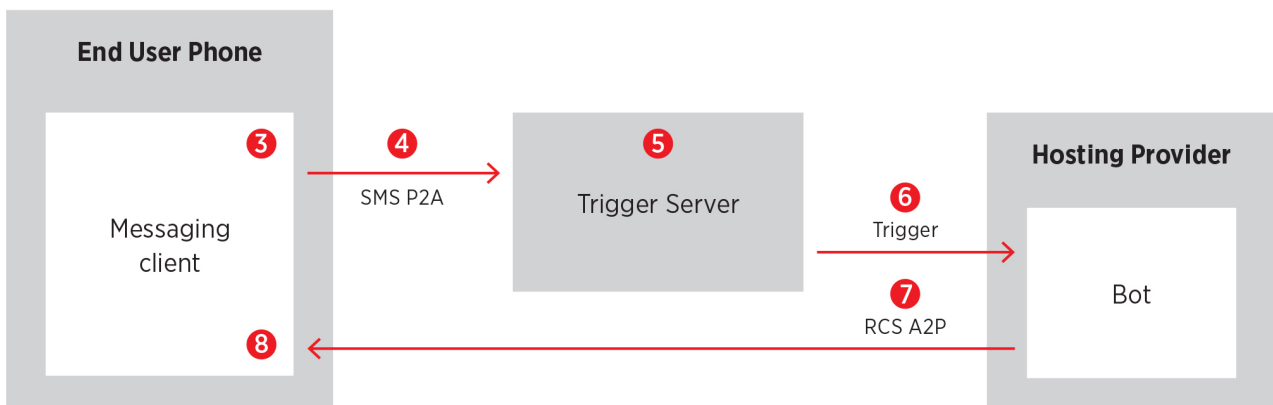
Fall-back to an SMS flow could also be implemented at step 5, if the end user does not have RCS capabilities.

Specification and Implementation

- The necessary SMS capabilities are widely supported on phones.
- For QR codes, most Android phones support QR reading in the native camera app from Android OS 8.0 onward (user may need to enable), or 3rd party applications reading QR codes are widely available.
- Basic RCS Capabilities are specified in UP 2.2 and required in IR1/A2P Basic
- UP 2.1 / IR1/A2P Basic has R15-7-2: SMS may be available in a conversation with an RCS Chatbot in both directions. MNOs are recommended to confirm support with client vendors.
- UP 2.3 (RCC.71 v2.3 R15-8-2 and R15-2-5-5) / IR2 has additional requirements to ensure an A2P SMS message is shown in the same thread as an RCS P2A message - if the Chatbot Information includes the SMS number. MNOs are recommended to confirm support with client vendors.

Scenario #5: Web URL to trigger RCS A2P

Overview

An organisation wants to provide users with a "click to chat", "tap to chat" or "scan to chat" from their digital media (website, email) or physical media (advert with QR code) to allow mobile end-users to initiate an RBM dialogue. A web URL is used in conjunction with a Trigger Server to send an RCS A2P message from the organisation's bot to the user. This solution could be deployed today as a pragmatic alternative to RCS P2A Deep Links. It could also be used for discovery from tablets or PCs, sending an RCS A2P to a registered mobile device supporting RCS to initiate dialogue.

- Link or button on brand's website, in emails, adverts
- The brand owns its content and specifies visual design and link invoked
- The link invokes a Trigger Server which initiates an RCS A2P message to user

| Tap to chat buttons | Scan QR to chat | Links and buttons on websites | Links and buttons in emails |

Detail

A Trigger Server reachable via a web URL, is operated by a Service Provider e.g. an Aggregator, MNO or 3rd party directory service provider. The server is connected to the organisation's RCS Bot, and the following steps apply -

1. Service Provider (SP) gives the organisation a unique URL which points to SP Trigger Server. URL includes chatbot ID (could be in any format; propriety ID, URI, E.164 number etc.)
2. The organisation puts URL link in their digital media
3. End-user opens link from mobile phone browser or email client (invokes browser)
4. HTTP/HTTPS request and end-user identification
   a. End-user identity may be added into the http request by MNO (e.g. MSISDN, or other known ID).
   b. If the user's MSISDN is not provided in http request, it can be discovered either because the user is 'logged in' to an account which knows their MSISDN or the Trigger Server may request the user manually enters their MSISDN.
5. Trigger Server looks up chatbot ID in its bot directory database and maps to the web address of the bot hosting provider and specific organisation's bot
6. Trigger Server sends a trigger to bot to send an RCS A2P message
7. Bot sends RCS A2P message to user, inviting dialogue
8. User receives RCS message from bot in their messaging client, and dialogue starts
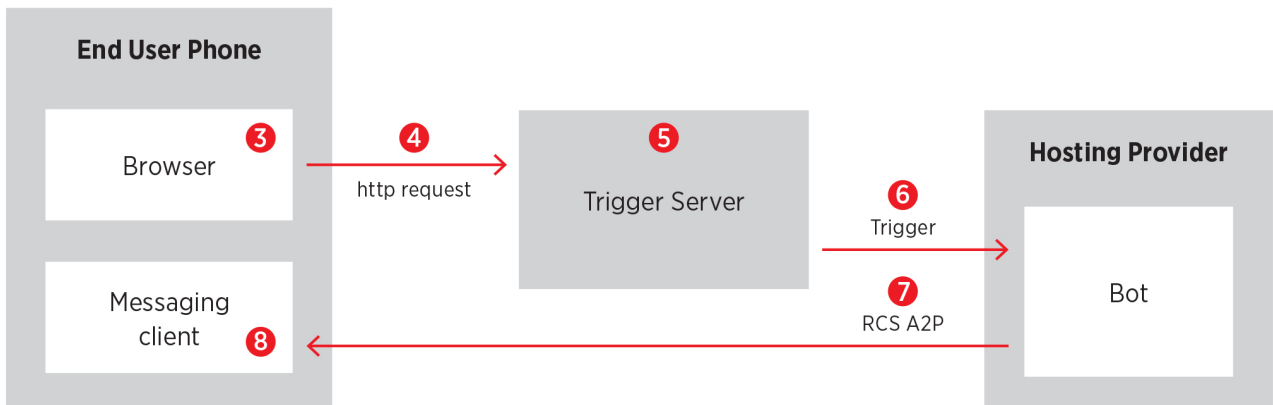
Notes

- The organisation may want to define the URL/URI address of its chatbot, and anyone bot could have multiple Web URLs pointing to it.
- Providing a seamless UX for end-user identification is potentially the most complex or proprietary part of the solution but is preferable to offering a compromised user experience which prompts the user to enter their MSISDN manually. Header Enrichment or OpenID Connect could be used to provide automatic user identification.
- If Header Enrichment is being used to determine MSISDN, the Trigger Server could present a different UX depending if the visiting user is a mobile browser with Header Enrichment (display a link), or not (do not display any link or a link prompts for manual MSISDN entry).
- Fall-back to an SMS flow could be implemented at step 7, if the bot discovers the end-user does not have RCS capabilities.

Specification and Implementation

- The necessary capabilities are widely supported on phones.
- RCS Capabilities are specified in UP 2.2 and required in IR1/A2P Basic. No dependency on IR2
- Legal & Regulatory compliance (EU GDPR/ePD/ePR, US TCPA/FCC, as applicable per region) requiring clear user consent must be considered prior to sending the RCS A2P message. Clicking/tapping a button "Chat with me" may be enough if the user understands a message will be sent to their MSISDN. However, explicit user consent would be required to provide the user's MSISDN to the Service Provider or organisation if the MSISDN is being obtained automatically, e.g. via Header Enrichment.

Scenario #6: Call IVR to trigger RCS A2P

Overview

The mobile user calls an organisation and is routed to their IVR system. The IVR informs the user over the phone call that they can wait, call back later or handle the enquiry via chat direct to their phone. If the user selects chat, an RCS A2P message is sent to the user.

Detail

The IVR can reach a Trigger Server operated by a Service Provider e.g. an IVR cloud vendor, Aggregator, MNO or 3rd party. The Trigger Server is connected to the organisation's RCS Bot and the following steps apply:

1. The IVR is configured to point to SP Trigger Server and chatbot
2. Organisation advertises their business phone number
3. End-user calls business phone number from their mobile phone, and selects 'chat' from IVR menu
4. End-user MSISDN is available to IVR as incoming call ID
5. IVR requests Trigger Server to look up chatbot ID in its bot directory

database and map to the web address of the bot hosting provider and specific organisation's bot, passing the user MSISDN.
6. Trigger Server sends a trigger to bot to send an RCS A2P message
7. Bot sends RCS A2P message to user, inviting dialogue
8. User receives RCS message from bot in their messaging client, and dialogue starts
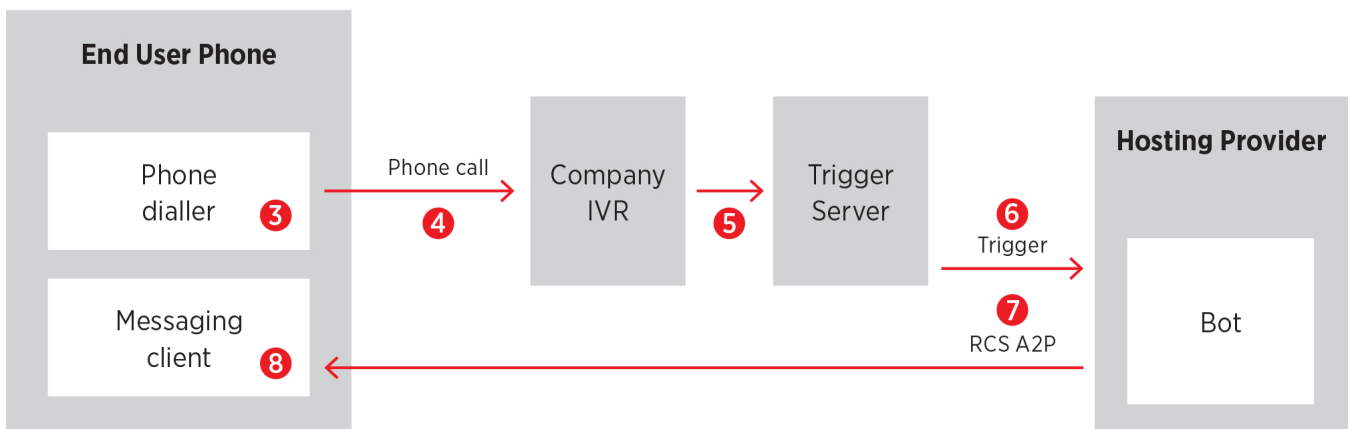
Notes

- Legal & Regulatory compliance (EU GDPR/ePD/ePR, US TCPA/FCC, as applicable per region) requiring clear user consent must be considered prior to sending the RCS A2P message. This could be obtained via user response to the IVR.
- Fall-back to an SMS flow could be implemented at step 7 if the bot discovers the end-user does not have RCS capabilities.

Specification and Implementation

- The necessary capabilities are widely supported on phones, specified in UP 2.2 and required in IR1/A2P Basic, with no dependency on IR2.

## Scenario #7: Web search, Maps search, Online adverts

Overview

A Service Provider offers Web search, Maps search, or Online adverts as commercial discovery products. The user searches for an organisation or a generic need, using a familiar web search service or maps search from the Service Provider, which returns search results (organic and/or paid) to the user. The search results contain buttons or links to allow the end-user to initiate a chat with the organisation. If the user "clicks to chat" or "taps to chat" an RBM dialogue is started.

Alternatively, a visited web page or mobile application may contain an advert served by a Service Provider. The advert includes buttons or links to initiate a chat with the organisation.

This discovery option differs from discovery options 3 and 5 in that it is designed and controlled by a commercial discovery Service Provider. An organisation may enter an agreement with the Service Provider to be discoverable. Whereas 3 and 5 are implemented by organisations themselves placing links on their own branded media.

- Users search via an existing search service or views an online advert
- Search provider or advert provider surfaces a chat button in search results or web advert, and configures the link invoked when tapped
- User taps the chat button to initiate an RCS chat with brand
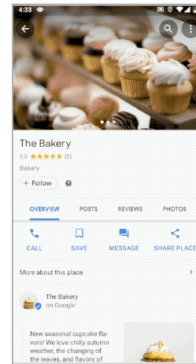
Detail

When the user "clicks to chat" or "taps to chat" the RCS dialogue is started which could be achieved in one of two ways depending on the Service Provider implementation, either:

a) RCS A2P[2] (similar technical solution as in Scenario 5) - the Service Provider may already know the user's MSISDN (through a logged-in user account) and so can determine if the user is RCS capable and could either message the user on behalf of the bot, or pass the MSISDN to the bot and trigger the bot to message the user.

b) RCS P2A (similar technical solution as in Scenario 3) – the Service Provide may use an RCS Deep Link to invoke the client to initiate an RCS P2A message which could include some suggested message to provide relevant context for the bot.

Specification and Implementation

- The Service Provider's Web Search, Maps Search, Ad Serving are proprietary services
- For (a) RCS A2P capabilities are specified in UP 2.2 and required in IR1/A2P Basic. No dependency on IR2
- For (b) refer to Scenario 3 for RCS P2A capabilities and constraints

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[2]Legal & Regulatory compliance (EU GDPR/ePD/ePR, US TCPA/FCC, as applicable per region) requiring clear user consent must be considered prior to sending the RCS A2P message. Clicking/tapping a button "Chat with me" may be sufficient if the user understands a message will be sent to their MSISDN. However the user must be aware and grant consent if their MSISDN is released to 3rd parties and grant consent to receive RCS A2P messages for defined purposes and from defined businesses.

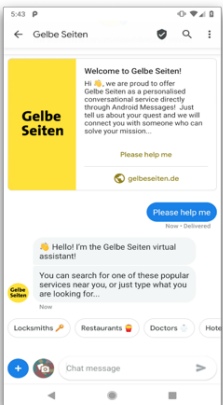# Scenario #8: Concierge Bot / Super Bot

Overview

The user discovers or is presented with an RCS Concierge Bot / Super Bot. This Bot may be offered by a trusted branded Service Provider, or by an MNO as a bot discovery service. The role of the Bot is to help users discover and connect to 3rd party bots. This could be achieved through:

- Keyword search or AI/NLP to identify user's intent and offer relevant bots
- Categorised directories of available bots
- Promoted Bots based on user profiling

The user is presented with a selection of bot options or recommendations, potentially making use of RCS rich cards, and the user selects a 3rd party bot belonging to an organisation. The Concierge Bot either redirects the user to start a new RCS chat thread with the 3rd party RCS Bot or integrates the 3rd party Bot and presents within the Concierge Bot's own RCS thread. The whole experience is handled within the RCS Messaging Client.

Detail

The choice and mechanism used by the RCS Concierge Bot to redirect/handover the user to a 3rd party RCS bot, or to integrate a 3rd party bot into its own RCS thread are determined by the Service Provider, who is also responsible for complying with data privacy, legal and regulatory matters.

In the case of redirection to another RCS bot, this could be achieved using either -

a) RCS A2P (similar technical solution as in discovery option 5) - the Service Provider already knows the user's MSISDN and could either send* a message to the user on behalf of the bot, or pass[3] the MSISDN to the bot and trigger the bot to send* its own message to the user.

b) RCS P2A (similar technical solution as in discovery option 3) – the Service Provider may use an RCS Deep Link to invoke the user's messaging client to initiate an RCS P2A

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[3] Close attention to legal and regulatory compliance (EU GDPR/ePD/ePR, US TCPA/FCC, as applicable per region) will be required. The user must be aware and grant consent if their MSISDN is released to 3rd parties and grant consent to receive RCS A2P messages for defined purposes and from defined businesses.

message which could include some suggested message to provide relevant context for the bot.

If the RCS Concierge bot integrates 3rd party bots into its own thread, it is in effect acting as a trusted aggregator of bots. The Concierge bot would be the RCS Verified Sender for all interactions within the thread, requiring higher levels of user trust. The Concierge Bot may also be converting/proxying non RCS chat protocols used by 3rd party bots, allowing rapid on-boarding of existing non RCS bots to the RCS platform.

Specification and Implementation

- The Service Provider's Concierge Bot and integration with 3rd party Bots is proprietary
- For (a) RCS A2P capabilities are specified in UP 2.2 and required in IR1. No dependency on IR2
- For (b) refer to Option 3 for RCS P2A capabilities and constraints

Scenario #9: Share a Contact to trigger RCS A2P

Overview

During an RCS chat dialogue, an RCS bot may invite the end user to share one of their contacts to also engage directly with the RCS bot. User A shares a contact (User B) with the RCS bot, and the bot then initiates a dialogue with User B by sending an RCS A2P message direct to User B, providing context and inviting engagement.

Detail

User A can share the contact in one of two ways

1) User A manually enters an MSISDN in the message text entry field and sends it as an RCS message to the bot
2) User A selects a contact from their address book which is sent as a vCard in an RCS message to the bot

The bot then sends an RCS A2P message to User B. Best practice would require the bot's first message to User B to explain that User A has suggested or referred them.

Notes

- User A is sharing another person's private data, and the bot should confirm they have the permission of User B to do so.
- If User A shares a vCard with the bot, there is a risk that too much personal data is shared e.g. User B's name and address when only their MSISDN is strictly needed or may be intended by User A.
- Careful consideration of Legal & Regulatory compliance (EU GDPR/ePD/ePR, US TCPA/FCC, as applicable per region) would be required to send unsolicited RCS A2P messages to User B.
- Organisations wishing to offer bots with such functionality must decide if such a use case can be designed within permitted regulations and that they are not unwittingly encouraging or enabling their customers to break data privacy laws in the countries they operate.

P2A Monetisation

With the assumption that an organisation (business, utility, charity, local authority, etc.) is willing to pay to be discoverable and or pay to be discovered by users (who may be existing customers, potential new customers, members, charitable givers etc.), ecosystem players could monetise P2A in a number of ways, either by directly charging the organisation bot owner or indirectly through revenue share agreements with partners. Many monetisation models will no doubt emerge as the RBM market develops; however, a few are considered below.

Monetisation of Access

An organisation may be charged to be on-boarded to the RBM channel. On-boarding enables their organisation to become reachable by mobile RCS users. Any single organisation may have multiple campaigns and bots (for customer service enquiries, operational service delivery updates, marketing promotions, customer engagement, FAQs etc. and potentially from multiple divisions of large companies). Each RBM endpoint may require its unique address, on-boarding, verification and MNO approvals.

Where traditional P2A discovery methods (SMS, URL, QR code, etc.) are the initial step leading to an RBM dialogue, the organisation may be charged for a service which maps the discovery method to the RBM platform and triggers the relevant bot. Service providers may charge organisations for an end point address, configuration, verification, triggering an RCS A2P message (or SMS fall-back) to the user, channel analytics, etc.

Monetisation of Search and User Intent

The RCS UP2 specification defines a bot search capability within the messaging client which can be served from the RBM platform operated by an MNO. Additionally, traditional web search and map search services could include a link to an organisation's RBM bot in their search results in addition to the organisation's website, phone number, map location etc. Search services may implement algorithms to surface bots based on -

1) User search term – using string match or AI/NLP to determine user intent
2) Bot profile - quality, users, user ratings or other value assessment, and
3) User profile - segmentation, location, interests, history, etc.

Search services which attract many views (number of unique users and repeat visits) will be in a favourable position to monetise. Organisations may be willing to pay for the position in search results to increase the likelihood of being found. Search providers may implement well-established digital marketing charging models such as bid-based Pay Per Impression (PPM) or Pay Per Click (PPC).

Monetisation of Bot Directories and Stores

The RCS UP2 specification defines a bot directory within the messaging client which is served from the RBM platform operated by an MNO. Additionally, bot directories could also be presented to users in other mobile apps, web sites and RCS bots. As the bot catalogue increases, directory services which categorise, curate and promote bots may assist mobile users in finding bots and providing monetisation opportunities. Directory services may also implement algorithms to surface bots based on:

1) Bot profile - quality, users, user ratings or other value assessment
2) User profile - segmentation, location, interests, history, etc.

Gathering such data may support monetisation of directory services.

Directories which attract many views (number of unique users and repeat visits) will be in a favourable position to monetise their services. Organisations may be willing to pay for position and visibility within the directory, to increase the likelihood of being found by mobile users. Directories may implement models which require organisations to bid for position to increase the likelihood they are found more efficiently than competitors. Directories could also implement well-established digital marketing charging models such as Pay Per Impression (PPM) or Pay Per Click (PPC).

Finally, where a bot is delivering valuable services or premium content, the user may be willing to pay to gain access to the bot. Well established app store charging models such as one-time access fee, recurring charges, or advert-supported models could all be brokered by the directory service provider.

Monetisation of messaging traffic

Scheduled outbound brand campaigns, alerts and service messages will generate brand-initiated RCS A2P traffic and revenues. Also, P2A discovery will lead to user-initiated requests for dialogue with an organisation, which will generate messaging traffic sent from the organisation to end-users, as they respond to the user. This traffic can be monetised in various ways including per message, per session or user action. Mobilesquared estimates that within three years, the traffic resulting from P2A user discovery of brands/bots will be of greater value than brand initiated A2P traffic.
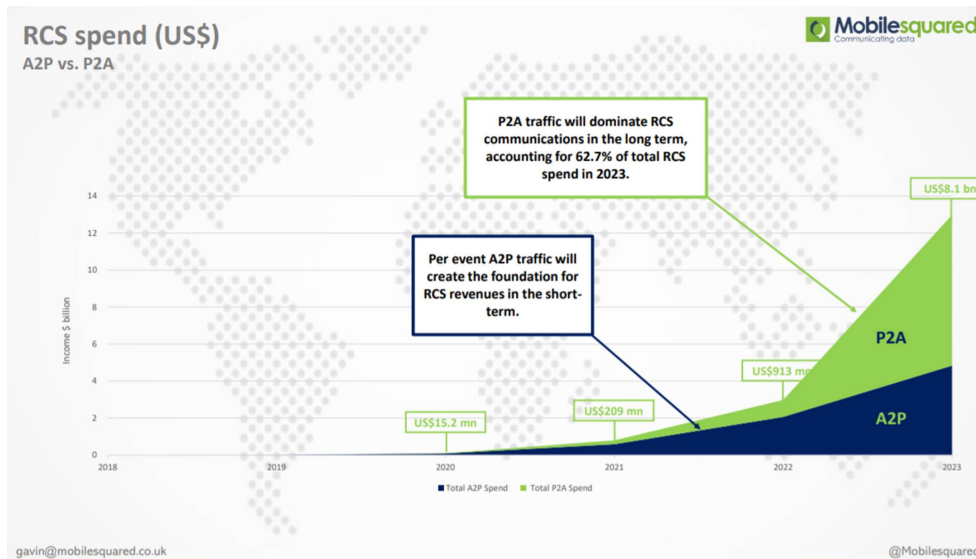
Discovery leading to commercial transactions

Where discovery results in an RBM dialogue which in turn leads to a commercial transaction such as paying for physical goods, subscriptions, services and content, additional opportunities to monetise the RBM Channel may exist. These can be enabled by payment fulfilment methods (Direct Carrier Billing, digital wallets, card schemes, 'Pays' etc.) and could include charging for services delivered, finder fees, transaction fees, revenue share, etc. Note in such cases, brands

and service providers must ensure legal and regulatory compliance, maintaining transaction logs and gaining user acceptance of the appropriate T&Cs for the relevant channel.

Conclusion

Opportunities exist for RCS Business Messaging in both outbound (brand initiated) engagement and inbound (user-initiated) engagement. There are compelling uses cases for both, and the relative focus and commercial value in each market will depend on the ambitions and goals of the various RBM ecosystem players and the capabilities deployed.

There are multiple options to enable user-initiated discovery of RCS Business Messaging bots. Some build on existing methods already widely deployed and used in SMS Business Messaging. In addition, RCS specifications define new 'native' discovery models which deliver enhanced user experiences and potential new monetisation opportunities. These require messaging client support, which is not yet fully available in all markets. So mobile operators will need to discuss feature support with their messaging client and RBM platform vendors.

In addition to brand-initiated RCS campaigns, there are various commercial opportunities to monetise user-initiated engagement of the RBM channel. This includes monetising the discovery process itself, the traffic it generates, and user activity such as the call to actions and commercial transactions. If the RCS ecosystem consisting of mobile operators, messaging service providers and others can successfully capitalise on the market opportunity, RBM is set to become a valuable channel for all involved.

Appendix: Terminology

RBM - RCS Business Messaging specified in RCS Universal Profile 2 (RCC.71) enabling sending and receiving of RCS messages between end users and businesses.

Service Providers – Those offering services and enablers to facilitate user discovery which leads to an RCS Business Messaging dialogue. A Service Provider may include mobile operators, platform providers, messaging aggregators and other parties, depending on their chosen roles.

A2P / P2A – Usage in this document specifically refers to the direction of a message, rather than indicating the initiator of the communication. An A2P message is one sent from an Application (organisation/bot) to a Person. A P2A message is one sent from a Person to an Application (organisation/bot).

RBM End Point – The 'A' in RCS A2P/P2A which could be an organisation's chatbot, live agent, or combination of both.

Bot - loosely used through this document as shorthand for a chatbot and instead of RBM End Point (for simplicity). In addition to scheduled or fully automated message replies, a business may send messages from a live customer service agent.

IR2 – Implementation Release 2 (RCC.73) adds RCS P2A features from UP2.2 Specification, intended for implementation, accreditation and deployment by end 2019.

GDPR – The General Data Protection Regulation (GDPR) is a regulation in EU law on data protection and privacy for all individual citizens of the European Union (EU) and the European Economic Area (EEA). It also addresses the export of personal data outside the EU and EEA areas. Wikipedia

ePD - Privacy and Electronic Communications Directive 2002/58/EC on Privacy and Electronic Communications, otherwise known as ePrivacy Directive (ePD)

ePR - The ePrivacy Regulation (ePR) is a proposal for a Regulation on Privacy and Electronic Communications. Its full name is "Regulation of the European Parliament and of the Council concerning the respect for private life and the protection of personal data in electronic communications and repealing Directive 2002/58/EC (Regulation on Privacy and Electronic Communications). Wikipedia

Anonymisation – RCS Anonymisation is specified in UP2.3 (RCC.71 v2.3 R15-2) but is out of scope of IR2/IR3 and not expected to be implemented in the near term. Functionally, it replaces a user's MSISDN with a unique anonymous 'token' to the organisation for P2A/A2P messages. Anonymization is a chatbot platform function remotely enabled / disabled by the UI on the handset (or operator / chatbot platform policies). The end user can select an anonymous dialogue for individual RBM conversations. The feature was specified to satisfy potential future legislation requirements in certain markets, but some MNOs believe it is neither in the interest of bot owners or mobile operators.