RCS as a Channel in Bot Platforms

RCS as a Channel in Bot Platforms: The Need for an RCS Connector

Even if the specifications of the RCS MaaP layer are fundamentally designed for chatbot interaction, they do not provide a definition of what a chatbot development system or framework needs to do. In fact, a MaaP implementation does not even need to include chatbot creation capabilities.

The intention is to promote an open ecosystem where any chatbot platform can connect to the RCS MaaP to offer services to RCS subscribers, thus eliminating any limitations to service adoption. Businesses have different expectations, budgets, and resources and will choose a chatbot framework based on their own needs. Some businesses will want a simple script-driven bot to answer FAQs based on an open-source solution deployed within their own web hosting, whereas others will want an artificial intelligence-driven bot that integrates with their back-office ticketing and order processing system to provide conversational commerce capabilities.

The goal of RCS is to accommodate all the use cases, but this openness has created a gap. Today, a company investing in resources to enable a chatbot use case wants to maximize its reach. However, when considering the option to reach users via RCS, brands are forced to choose from a limited number of messaging companies that have integrated their chatbot creation environment with RCS. Alternatively, they need to hire a developer or firm that can build chatbots using a chosen framework —such as IBM Watson or Microsoft Bot Framework and then integrate it with RCS by building a connector web service, usually cloud-hosted, that mediates between the framework and the RCS MaaP. Such an endeavor is costly since it represents an extra step in the process to connect brands to their customers.

However, RCS provides a standardized MaaP Northbound interface for chatbot platforms, so why not have a single standards-compliant connector offered by the chatbot platforms that facilitates the enablement of RCS connectivity for their bots?

Most bot platforms already provide connectors for multiple channels. For example, Microsoft's Bot Framework provides channels to connect bots to Cortana, Skype, Skype for Business, Direct Line, Microsoft Teams, email, GroupMe, Facebook, Kik, Slack, and Telegram, among others.

To include RCS as a channel, a connector needs to be built to provide the following functionality:

- Authentication and registration of the bot in the RCS MaaP
- Bot search and discovery relay mechanisms
- Adaptation and conversion of media objects (rich cards, carousels, etc.) as well as events (delivery, read, and is-typing notifications)

RCS provides a standard REST-based interface and JSON-based objects (rich cards and carousels). Building such a connector should not be a difficult task, and because all mobile devices use RCS standard clients, this work could be done once and reused massively. So why is RCS not an option already?

The answer lies in the nature of the channels. Services such as Skype, Facebook, Slack, or Telegram represent global networks, which means that building a connector for those networks allows the bot to reach any user within them, worldwide. The bot platform provider can build the connector once and make it available to the entire developer community as a value-add for their bot service.

With RCS, however, there is not a single channel. Each mobile network operator (MNO) will usually have their own MaaP or run a dedicated instance within a multi-tenant MaaP service. This means there are as many RCS connectors as MNO networks, and these may be in different levels of standards compliance. For example, MNO1 can be on Universal Profile 2.2 while MNO2 is still on UP 1.0. These discrepancies introduce complexity with the handling of media types, events, and notifications.

At Mavenir, we are convinced it does not have to be this way. We believe it is still possible to minimize the integration efforts and leverage a common RCS connector to the leading chatbot platforms by choosing the right RCS Business Messaging partner.

Connecting the Bots: Mavenir's RCS Business Messaging Solution

Mavenir can help MNOs and bot platform providers to eliminate the complexity of enabling the RCS channel.

Mavenir's RCS Business Messaging Solution is a cloud-hosted RCS MaaP solution that allows MNOs to rapidly offer RCS services to brands, developers, and aggregators in their markets.

Mavenir's RCS Cloud connects to the operator's core network, integrating with their IMS, SMS, and MMS components, as well as the provisioning, OSS, lawful interception, and billing systems. It provides standards-based Northbound and Southbound interfaces to connect to chatbots and other MaaP providers and complies with the latest Universal Profile specifications. It also provides connectivity with other MNOs by means of industry-leading RCS hubs as well as IMS-compliant network-to-network interconnection (NNI).
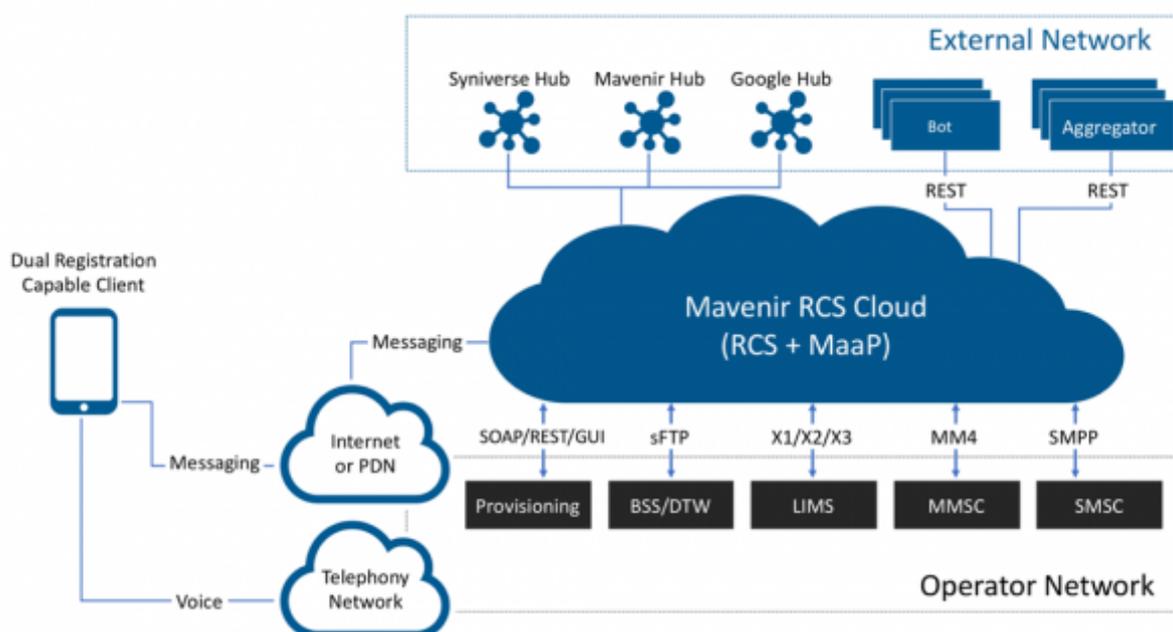

Figure 8 – Example of Mavenir MaaP integrating into an MNO network

Mavenir's RCS Business Messaging solution provides the following benefits to the MNOs:

- Fast time to market

- Low initial investment
- MNO control of the user-brand relationship
- MNO control of E2E security
- Brand-Consumer clear channel
- Fast availability of new features and compliance with the latest Universal Profile specifications
- MNO customizations and differentiation
- Regulatory compliance
- An open ecosystem of partners (aggregators, developers, and applications) pre-integrated with the MaaP
- Free P2P messaging

Because it is a multitenant cloud solution, each MNO perceives the solution as their own, but all MNOs hosted in the solution have the same level of UP compliance, capabilities, and functionality. Additionally, subscribers of the MNO's tenants can exchange P2P RCS messages for free.

Mavenir's MaaP also provides global reach with data centers being added in different continents and can facilitate the simultaneous launch of RCS Business Messaging within a country by multiple MNOs, providing the consumer reach that brands are demanding and dramatically increasing the revenue potential for the MNO.

Mavenir's cloud solution consolidates the multiple RCS networks into an RCS Communications Platform-as-a-Service (CPaaS), offering a single point of entry for chatbot developers. By leveraging the Mavenir MaaP SDK, which reduces the complexity of using the GSMA Northbound API, developers can create a common RCS channel connector to connect each specific bot platform to Mavenir's RCS Business Messaging MaaP. This connector can then be reused by all enterprise bots that will be connected to the RCS subscribers hosted in Mavenir's infrastructure, providing a unified RCS inventory.
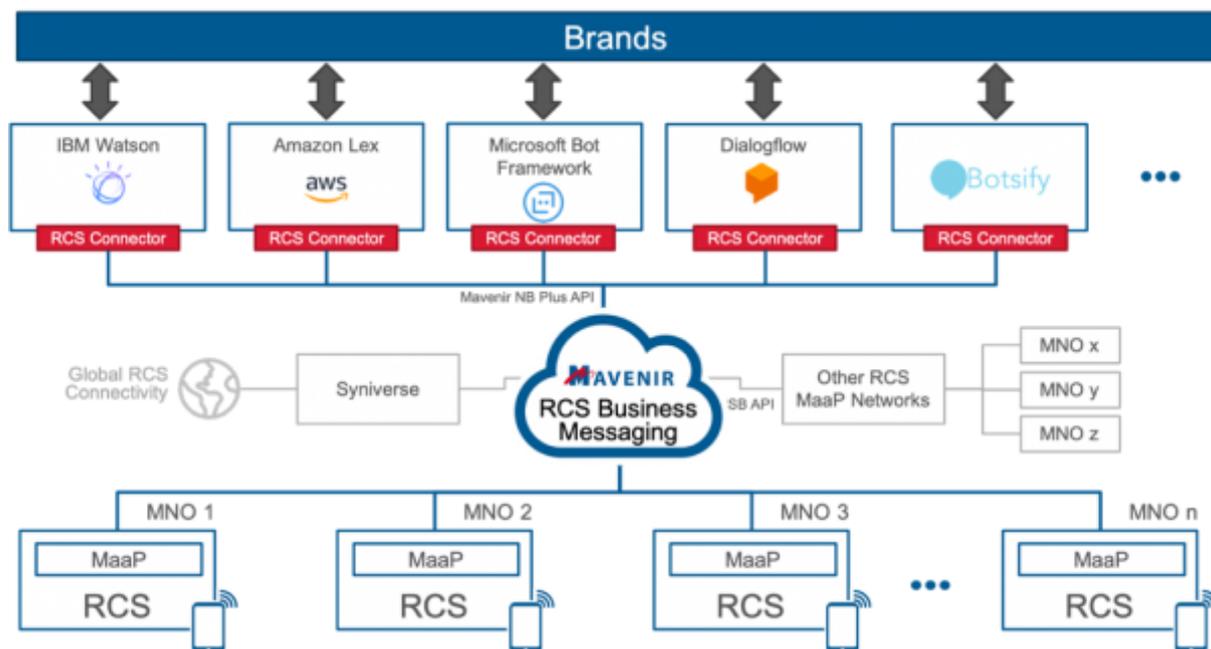

Figure 9 – Common RCS Connector to access a unified RCS inventory

Mavenir's RCS Business Messaging solution also uses the GSMA Southbound API to connect with other MaaP platforms, making their chatbots visible to the RCS users of MNOs that are not hosted in Mavenir's solution. And it is more than a MaaP layer; Mavenir's solution includes a full ecosystem that includes partners that provide

additional messaging enablers by means of their own APIs. Some partners, such as Syniverse, provide global interconnectivity services and ENUM capabilities to allow the chatbots to reach any RCS subscriber in the world.

Mavenir's RCS Business Messaging provides the following benefits for brands and developers:

- Translation of the telecom complexities into easy to use REST APIs that IT can understand and implement
- A unified marketplace within our multitenant cloud solution with a single RCS inventory that minimizes the brand's effort to access mobile consumers
- The standards compliance and adherence to the latest Universal Profile specifications which allows leading native and over-the-top RCS clients (such as Samsung Messages and Android Messages) to work with our solution
- White label RCS clients and Client SDKs (in addition to our MaaP SDK) to allow mobile network operators to offer RCS services on devices that are still not natively enabled (such as iPhones and older Android devices)
- A sandbox to allow developers to securely test their bots and validate the user experience
- Mavenir's partner ecosystem, which provides access to 3rd party enablers to further enhance the user experience and enables conversational commerce
- Our strategic partnership with Syniverse, which delivers access to global interconnectivity, financial clearing and settlement functionality, brand and chatbot vetting mechanisms, ENUM resolution, and aggregation capabilities
- Our focus on security, with the integration of our SpamShield revenue assurance solution, which minimizes messaging fraud and facilitates the path to a clear and secure channel—a private digital billboard for the brand to interact with the consumer

Download the Connecting the Bots white paper for more information on RCS Business Messaging and how RCS can become another standard messaging channel available in the leading chatbot platforms to facilitate the relationship between brands and consumers.