What Is Real Time Communications?

By ROLAND SELMER

Real time communications is the near simultaneous exchange of information over any type of telecommunications service from the sender to the receiver in a connection with negligible latency, according to SearchUnified Communications. Examples of real time communications include:

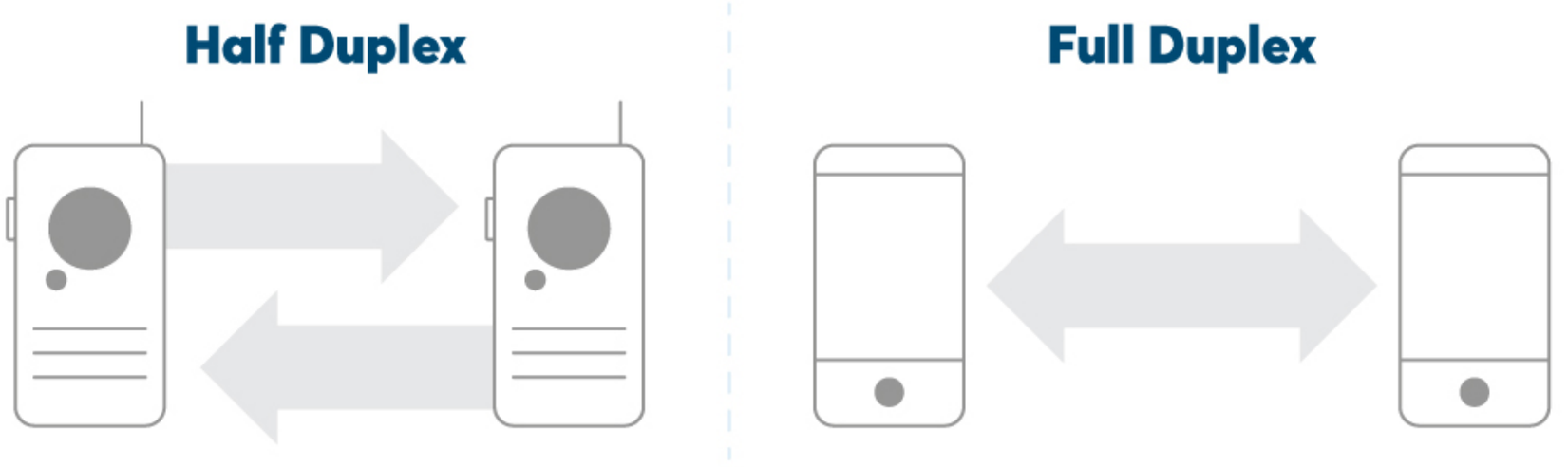
- Voice over landlines and mobile phones
- VoIP
- Instant messaging (e.g., WhatsApp, WeChat),
- Video and teleconferencing
- Robotic telepresence

However, real time communications does not include email, bulletin boards, blogs or other forms of internet communication where users read content without regard to the time the sender posts it, which can create a significant delay between data transmission and reception.

In addition, real time communications is never stored in an interim state anywhere between the transmitter and the receiver, as defined by Techopedia. Within that context, think of “real time communications” as a synonym for “live communications.”

In a communication of this type, there is a return path where the receiver can also communicate with the sender in real time. Real time communications can take place in half duplex or full duplex:

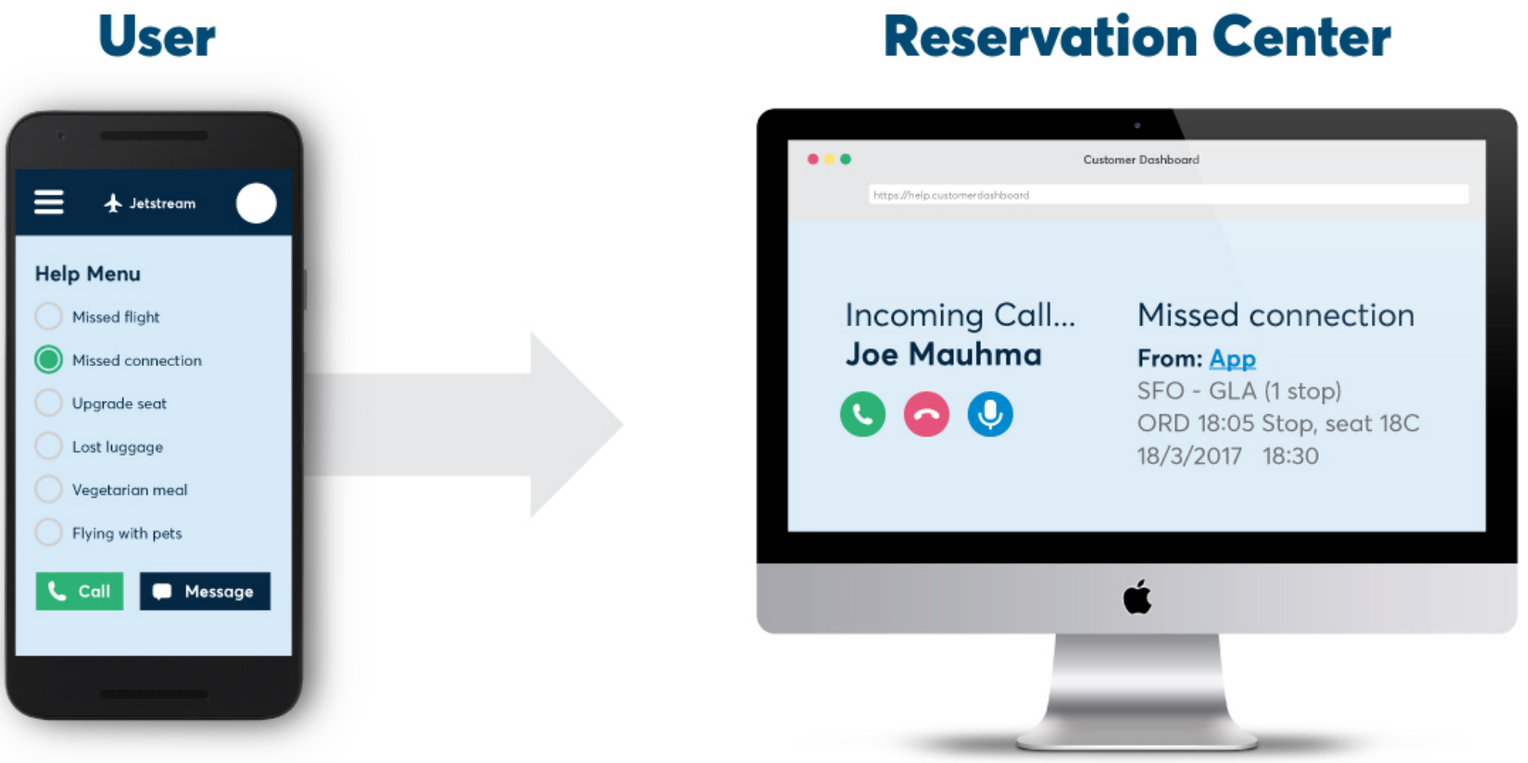
- Half duplex—communications in one channel in one direction at a time. Sender or receiver can send but not receive at the same time (think of an old-style walkie-talkie where the user has to say "over" to tell the person on the other end that she can speak)
- Full duplex—sender and receiver can send and receive messages simultaneously in two parallel communication pathways



Why is Real Time Communications Important?

Real time communications is important to consumers and business customers because in the wake of widespread adoption of smartphones they have come to expect immediacy in customer service and information exchange. For example, a passenger who has missed a connecting flight may contact the reservations center via the airline's app while stranded at the intervening hub.

In this use case posed in *No Jitter*, the customer will get the best service if the reservations center understands the context of the passenger's problem at the *exact time* of the contact. Its agents should have already received the relevant flight update. Saving the passenger from having to detail the situation one or more times will decrease time to resolution as well as improve the customer experience.



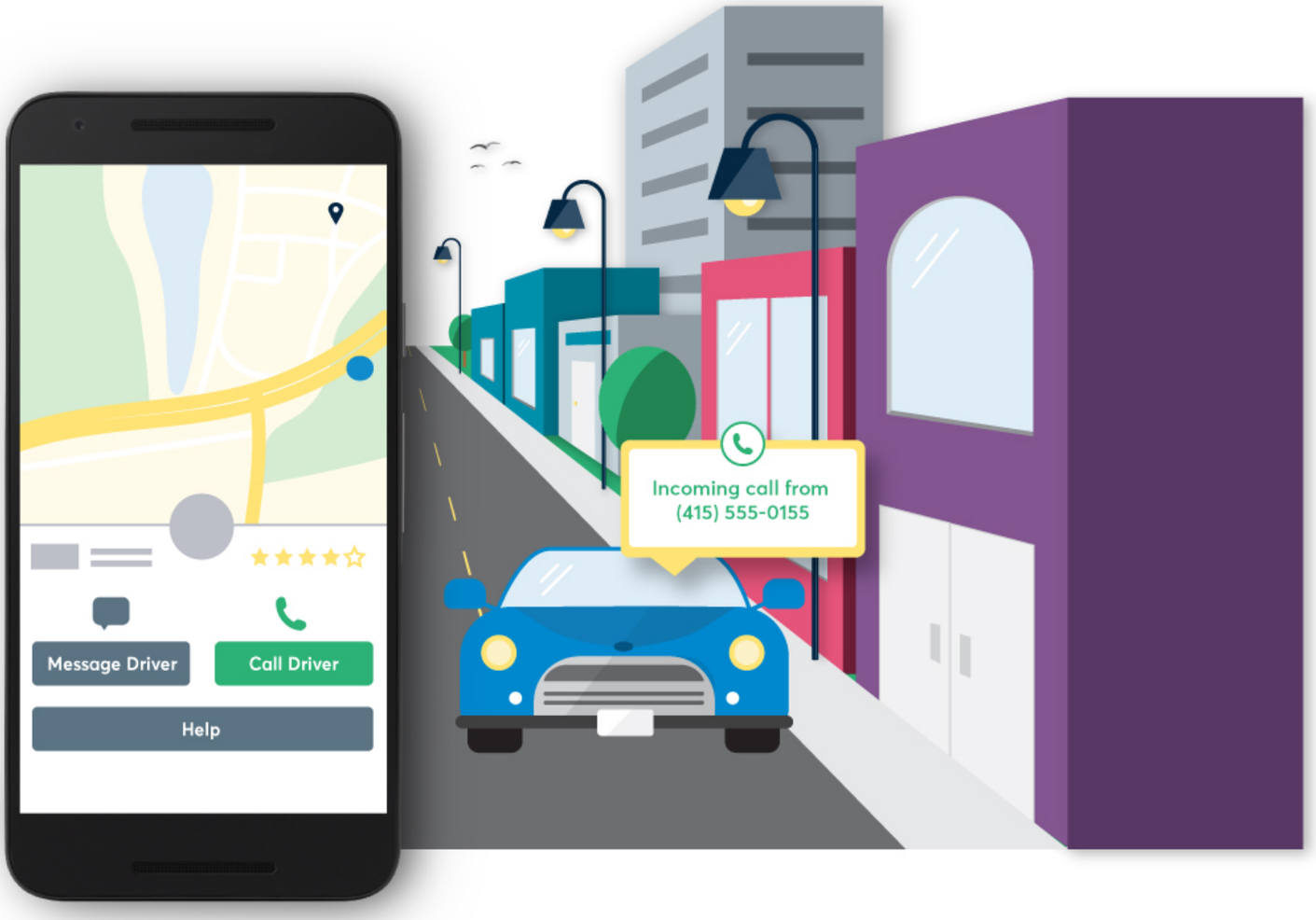
"That agent should have that and other passenger profile information at his or her disposal, as well as where exactly in the world that traveler might be, down to the terminal and gate, and to where he wants to get," said Dean Bubley, founder of Disruptive Analysis, a tech/telecom analyst firm, to *No Jitter*. "In other words, when time is of the essence, the traveler needn't waste any of it providing the context for his call."

Real Time Communications for Business

While real time communications may seem relatively new to consumers, businesses have used the functionality for somewhat longer. For example, real time communications has been available for years to companies in cloud communications messaging applications like HipChat, Skype, Slack and others for enterprise collaboration, according to SearchUnified Communications.

"Web-based flexibility is part of the appeal of messaging platforms," said Jon Arnold, principal, J Arnold & Associates, an independent technology research and analyst firm, in SearchUnified Communications. "So users can have both real-time and near-real-time options. Slack and other similar providers can provide both modes of collaboration."

And now voice communications have come into more common usage in real time communications apps, bypassing traditional telephony providers. For example, in Southeast Asia real-time ride-hailing app and platform Grab goes over the top of unreliable local carrier infrastructure to communicate directly with customers through voice messages delivered via Voice API through a worldwide, low latency cloud communications network. Communicating in a unified communications app with this enhanced capability can save businesses and their workers time and money.



Furthermore, business use cases for real time communications have now expanded into other commercial fields. For example, in workplaces without an office proper (e.g., restaurants, retail stores) where the job description of the employees includes being “on their feet” and “on the go” constantly, they can now use real time communications for task coordination, employee scheduling, work news and more.

In one use case, real-time messaging on an app can replace blanket emails to employees about internal announcements, which increases engagement and elicits questions from employees in a way that asynchronous email never could, as one manager related in a recent *Forbes* article. This kind of real time communications can optimally benefit personnel who generally work in shifts for groups as diverse as nurses, landscapers, emergency first responders, waiters, sales associates and even baggage handlers.

Effort to Make Real Time Communications a Reality

Since the early ARPANET, every effort has been made to make the internet faster and faster. This led independent developers and research labs to innovate better and better technology. But because not everyone knew what others in the field were doing, incompatible solutions resulted. For real time communications, they have sought to avoid conflicting technologies through standardization.

In 2011, a joint effort got underway by the the Internet Engineering Task Force (IETF) and the World Wide Web Consortium (W3C) to standardize real time communications across the internet, according to *IEEE Standards Communications Magazine*. This effort includes

support for protocols, API requirements, interworking with legacy VoIP and advancements in congestion and flow control as well as the overall communications infrastructure.

This standardization drive intends to enable all interested parties to reach consensus on a well-defined set of protocols and APIs for widespread deployment of the real time communications experience, in the words of IEEE. That way web developers, browser vendors and application and telecommunications providers can leverage the market in order to offer end users interoperable, media-rich, web-enabled products.

Future of Real Time Communications

With Gartner predicting more than 20.8 billion connected things (e.g., phones, tablets, PCs, remote sensors, routers) by 2020, the internet of everything must become a real time communications network. A glimmer of this future can already be seen in the utility and disruption in the case of the Uber car-sharing app/service. A customer needs a ride *now* and a driver is available for hire *now*. While a simple transactional relationship of money for transportation that has occurred for thousands of years, the real revolution enabled by real time communications happens on the back-end systems, notes *Telecoms.com*.

The industry news site reports that APIs and communications platform as a service have enabled the "online consumption model" by connecting devices, machines and humans for mass exchange of data, information and ideas. In this model, APIs serve as a kind of "digital currency." And by integrating real time communications directly into their applications and business processes, companies can leverage them for efficient, reliable and secure transactions, according to *Telecoms.com*.

Furthermore, IDC forecasts that by embedding voice, video and messaging via APIs, real time communications will ease solution creation. And the potential for real time communications remains strong with a forecasted compounded annual growth rate of 50.9 percent from 2015 to 2020 with a total projected market value of $4.45 billion by 2020, as a *MarketWatch* research report states.

In addition, service integration into mobile apps, web sites and business processes will become simpler. As IDC sees it, API-powered real time communications will enable underpricing and outperformance of traditional communication solutions.

'Blue Ocean' Opportunity for Real Time Communications Developers

Overall, real-time communications has strong appeal among developers, entrepreneurs, product managers and IT managers, in the opinions of some communication industry experts. That could be because they consider the real time communications market to be a "blue ocean" opportunity, which means it's uncontested and holds tremendous potential for even the smaller enterprises, as forecast by some market researchers. As an example, they envisage real time communications providing an easy way for SMBs to shift from traditional communication solutions to user-centric business communication, enabling attraction of new customers through click-to-call services, in one use case.

Whatever the future holds, real time communications will only grow in importance as enterprises consider it more vital for day-to-day operations with each sunrise. Because instant and secure communications are a basic requirement for enterprises today, whether its real-time voice, video or instant messaging, as one senior communications sector executive writes in *ITProPortal*.

Please fill out the form and we will be in touch with you shortly.

1.844.324.0340

First Name

Last Name

Email Address

Phone Number

Are you a Developer?

Company Name

Select Country

Product of Interest

Existing traffic to switch?

Traffic Volume Monthly (Optional)

Message (optional)