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# V.VoIP Adds Value To Next-Generation Applications

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Thu, 2013-11-21 14:07

Video and voice over Internet protocol (V.VoIP) as a standalone function has become pervasive in business, residential, and small-office/home-office markets. It also is becoming one of the most widely adopted features on mobile platforms, particularly for business travelers.

Standalone V.VoIP applications are available from Google Play and iTunes. But a new trend has recently emerged—integrating V.VoIP with a wide range of next-generation applications and products, from social networking, gaming engines, and Web browsers to devices such as smart TVs, Internet-enabled music players, and wearables. Even mobile operators are starting to embrace V.VoIP in their applications, with the emergence of Voice over LTE (VoLTE) and Rich Communications Suite (RCS) technologies.

## V.VoIP Combo Apps

Many social networking, music, and gaming platforms that top the charts of the Android and iOS app stores are ideal candidates for combining with V.VoIP to provide an even more robust user experience, making the incremental infrastructure investment a no-brainer.

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Facebook already sees the value and is enabling its large U.S. user base to make free voice calls with other Facebook friends within the United States. Multi-player online gaming also is using V.VoIP, letting users engage in voice and video chat in real-time with their fellow gamers. Web browsers such as Google Chrome and Firefox have launched video conferencing solutions on mobile platforms, enabling real-time V.VoIP directly from the browser without the need to download the application from Google/Apple stores.

## V.VoIP Proliferates Across Devices

Through standalone and combo apps, real-time V.VoIP is gaining significant traction on mobile devices and tablets. Now, it is making its way into other connected devices. Smart TVs that support built-in cameras or use external USB cameras are ideal candidates. V.VoIP also is starting to appear on wearables such as smart watches that support a full operating system (OS), providing an opportunity to run real-time applications.

In addition, car infotainment demands an improved user experience with high-resolution touchscreens, multi-display outputs, and connectivity with access to cloud services. V.VoIP will enrich the overall in-car experience, letting drivers

leverage HD voice in their calls and passengers use video features.

Apple's FaceTime has been available for several years, and Amazon has announced its Mayday customer support voice/video calling service with its latest Kindle tablets. We will see a continued trend of OEMs bundling V.VoIP applications and services with their devices.

Operators, who seemed hesitant to adopt V.VoIP applications until now, also are launching IP communications based on RCS, which enables them to provide a wide range of features on top of V.VoIP. Some operators are even promising to switch over to services based purely on IP communications, eliminating the traditional circuit-switched network.

### **V.VoIP Requirements**

Platforms, devices, and networks must support certain underlying hardware and software requirements to support real-time V.VoIP applications. In most of these platforms, there usually already is support for audio and video decoding functionality for streaming. However, real-time V.VoIP applications need both encode and decode for two-way (full-duplex) communications.

Hardware also needs to be upgraded to include a microphone for audio capture and a camera for video capture, which is otherwise absent in a streaming device. Echo cancellation, another important requirement, dramatically improves the subjective voice quality when a user is on a speakerphone or using a hands-free car phone system.

High-speed, low-latency, and lossless connectivity is essential to enable real-time HD V.VoIP communications. While Wi-Fi can be used to connect devices within the local-area network (LAN), and Bluetooth for audio routing, there must be a mechanism to get access to the Internet cloud. Some platforms already support Internet connectivity for browsing and audio/video streaming that can be used for V.VoIP communications apps.

Consumers require seamless handoff between access networks supported via software. As users enter the driveway of their home or office, the voice call should switch seamlessly without being dropped. Public switched telephone network (PSTN) calling (mobile/landline), multi-party conferencing, presence information, instant messaging, video/image share, file transfer, and other features also can provide a richer V.VoIP experience.

Since most platforms already have the infrastructure in place to support their native functionality, providers should consider upgrading their existing infrastructure to support V.VoIP functionality and further enrich the experience for their users.

### **Conclusion**

There is a huge opportunity to enhance the customer experience by combining popular platforms, devices, and applications with V.VoIP, but it must be properly optimized. Quality of service is essential for real-time communications. The dedicated channel is always preferred for real-time communications, instead of sharing the bandwidth with other non-real-time applications.

However, multiple channel impairments such as packet losses and latency and bandwidth limitations abound particularly in wireless environments. Imagination Technologies, for instance, offers Enhanced Voice Quality Management (EVQM) and Dynamic Video Quality Management (DVQM) in our VoIP solutions to mitigate these limitations. Engaging with a proven provider of high-quality VoIP solutions can help providers achieve V.VoIP combo success.

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