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VoLTE Comes to Life

By Tim Young

Back in 2009, prior to the first commercial deployment of LTE, discussions surrounding the future of an all-IP 4G wireless network were still sketchy. LTE hadn't fully emerged as the 4G technology of choice, and discussions about standards and best practices for LTE were still largely theoretical or academic. However, in November of that year, a promise of emerging standards appeared to take shape. Industry leaders like AT&T, Orange, Telefonica, Vodafone, Verizon, Telia Sonera, Nokia, Ericsson, and Samsung signed on to a joint technical profile for the development of LTE voice and SMS.

One Voice was built on IMS, and upon adoption by the GSMA in 2010, became known as Voice Over LTE (VoLTE). The interface between the customer and the network remained a primary focus of the standard, though the goals were expanded to also include roaming and interconnect interfaces.

After years of lab tests and consensus-building, VoLTE became an actively deployed technology in early August. Three separate companies on two continents claim to have been the first to deploy the service. MetroPCS in the United States may have just barely edged out South Korean operators SK Telecom and LG Uplus, but the exact who-did-what-when is a secondary concern. What matters is that VoLTE is a deployed technology, a reality that increases the relevance of discussions about the benefits and viability of the technology.

Analysts expect the total number of rollouts by the end of the year will be relatively low in number (8-12 seems to be the consensus), and the total number of subscribers using VoLTE to barely break into six digits (research from Signals and Systems Telecom estimates 100,000 subscribers by the end of the year). Still, these early adopters represent only a small fraction of VoLTE's potential. The technology promises to see a far more significant surge in 2013 and beyond.

But why? What are the benefits of VoLTE?

Higher speeds, for one. SK Telecom promises increases in both the speed of voice connections. The carrier suggested that call connection times with VoLTE could be as low as a quarter of a second, as compared to an average of five seconds to connect a 3G call.

In addition, the new technology helps to facilitate higher levels of call clarity, provided user devices are equipped with hardware capable of handling higher-quality calls. A new audio codec that can handle double the bandwidth is responsible for the increase in call quality.

Furthermore, the VoLTE rollouts have been accompanied by new OSS and BSS rollouts that help to maximize the ROI of the new network technology. "Amdocs has been a strategic partner for MetroPCS, with services that supported our latest milestone of being the first company in the world to launch VoLTE service," said John Olsen, senior vice president and chief information officer of MetroPCS, in a statement. "Amdocs helped us realize maximum revenues from our 4G LTE network investment, while providing a comprehensive solution from setting policy rules to metering and billing."

Ericsson, which was involved in enabling LG Uplus's

VoLTE rollout, also sees clear benefits. "With the new VoLTE technology, LG U+ will be able to offer its subscribers better voice quality and an improved user experience," Johan Wibergh, Head of Ericsson's Networks business unit said in a statement. "The new VoLTE services will sharpen LG U+'s competitive edge considerably and will provide the foundation for further enriching their communication services offering."

Moving forward, a number of other providers are invested in VoLTE. AT&T and Verizon Wireless are both planning 2013 VoLTE rollouts. NTT DOCOMO has taken delivery of VoLTE test kits from vendor Ecrio, signaling an ongoing commitment to at least exploring the opportunities of VoLTE. Huawei, meanwhile, reports that in the first half of 2012, ten operators had conducted trials using that company's VoLTE solution.

However, it bears noting that not everyone is making such an enthusiastic rush towards the technology.

The short-run benefits of adopting VoLTE may not be apparent to all providers. The technology doesn't mean more revenue from voice services, so the additional short-term costs associated with switching to a new voice solution may not be easily justified.

Telia Sonera, the first operator to launch LTE back in 2009, seems to be among the companies reticent about VoLTE adoption. Tommy Ljunggren, VP of System Development at Telia Sonera, told Mikael Ricknas of IDG News Service that the economic drivers for implementing VoLTE still aren't strong. VoLTE isn't, in Ljunggren's analysis, automatically easier than handling raw IP, nor is it cheaper than handling circuit-switched voice.

Instead, Telia Sonera is opting for Circuit-Switched Fallback, in which LTE enabled smartphones use the faster 4G technology for accessing the Internet, but drop down to 3G to handle telephony. This technology, too, has its drawbacks. It's a stop-gap, and it may not make as much sense for providers just jumping aboard the LTE train now, as opposed to players like Telia Sonera that have been active LTE players for the better part of three years now.

Furthermore, earlier this year, Verizon Wireless CTO Tony Melone told the Nomura U.S. Media and Telecom Summit that while his company was optimistic about

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VoLTE, they were in no rush to deploy it. So while MetroPCS, SK Telecom, and LG Uplus clamor to be first past the post, giants like Verizon are content to allow the technology to emerge as a part of a longer-term growth strategy.

However, in talking to representatives from the company, the attitude seems decidedly a simple matter of "not if, but when." "We're focused on our 4G LTE network build, and will introduce VoLTE in due course," Debra Lewis, a spokesperson for Verizon Wireless, told Pipeline. "We don't have any specific timelines or comments on pricing to share."

Nevertheless, Lewis asserts that VoLTE has a number of benefits, and that these benefits have a lot to do with its existence as a common standard. "VoLTE is a global industry standard – and focusing on this standard ensures that equipment providers, OEMs and operators can be assured of interoperability and scale," said Lewis. "Following the industry specification also helps avoid fragmentation and confusion for customers." These statements get into a deeper benefit of VoLTE adoption that may tip carriers in favor of the technology more quickly than any of the single benefits I listed before.

"We expect VoLTE to support all call scenarios available today, so calls to other wireless and wireline carriers will be supported. However, there are other reasons for rollout patience: VoLTE may not work with all existing legacy systems. "Keep in mind," said Lewis, "that while the plan is for VoLTE to operate in our LTE footprint, some of the technology we have chosen (AMR-wideband) is not supported in existing 2G/3G networks preventing backward compatibility or call hand-offs between the networks." Lewis contends that instead of being cause for rejection of VoLTE, it's simply a reason to continue a steady rollout of 4G LTE services.

Therefore, while some may resist the growth of VoLTE, it seems to be gaining considerable weight as a standard. Perhaps, over the long haul, service providers may find themselves singing with one voice.

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