

The Death of Cellular Voice

By Chris Piedmonte

There are clear indications that we are beginning to see the slow, certain death of cellular network-based mobile voice services. Across the globe, customers are using their mobile devices to access data networks far more than they are to place mobile voice calls. When they do use their mobile devices for voice, many are turning to VOIP services such as [Skype](#), [Viber](#), and retro-POTS gone global upstart [Rebtel](#) rather than the cellular network. Why is this happening?

With the ready availability of IP connections, the improved voice and connection quality of VOIP and the option to augment calls with multimedia messaging, live two-way video and application sharing, mobile VOIP is becoming the communication paradigm of choice. Indeed, the major North American carriers are reporting almost no growth in the number of minutes consumed even while adding subscribers. They are also embracing WiFi calling as part of their services and concentrating on other data-centric offerings to bolster revenue.

In this article we will explore the factors that are driving customers to abandon cellular voice in favor of VOIP solutions and how the telecommunications industry is and should be responding to this shift in consumer demand.

Declining Usage of Mobile Voice

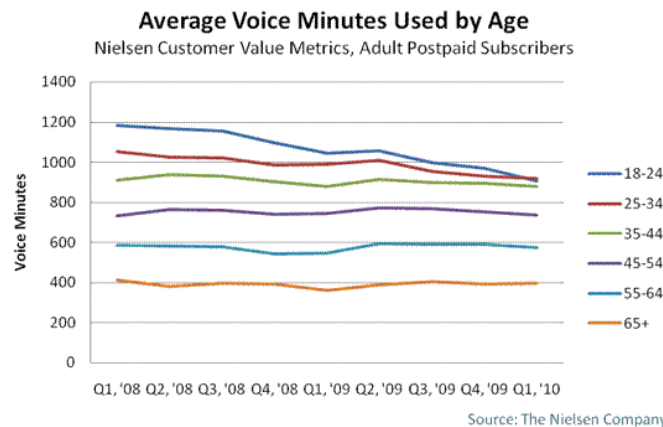
Cultural changes are influencing the abandonment of mobile voice. As we become busier and spend less and less time interacting with our coworkers, friends and family, mobile voice has become less significant. We are becoming a [texting and messaging society](#). A voice call requires that both parties be available and participate in the call simultaneously. Unlike a voice call, text messaging and other forms of non-verbal communication are asynchronous and don't require the immediate and



continuous participation of the communicating parties. The younger, Millennial generation has been quick to pick up on this fact and has been adapting their behaviors accordingly.

As far back as 2010, [The Washington Post](#) reported that only those over 50 years of age continue to place mobile voice calls as their primary means of communicating,

while younger generations are shifting from racking up voice minutes to SMS message counts. The Post also reports that younger generations consider making an unscheduled voice call both rude and intrusive. A phone call is clearly no longer the preferred mode of communications for our busy and over-



committed society.

There are even consumers who have abandoned their cellular network plans entirely and use their smartphones as WiFi-only devices. In 2013, a [CBS News](#) article extolled the virtues of dropping your voice subscription and going exclusively with VoIP over WiFi.

What's Wrong with Cellular Voice?

According to the 2014 [JD Power Wireless Network Quality Performance Study](#), the typical customer reported that about one out of five calls placed through the mobile cellular network experienced some problem during the call. These problems included distortion and

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static, dropped or faded calls or dropping a call entirely. With about an 80% satisfaction rate, this gives the US cellular voice experience a shaky B minus. Having a bad personal call can be annoying and frustrating. Having a bad business call can have significant economic impact. With one out of five calls likely to go badly, why take the risk of conducting business over the cellular network with a unreliable mobile voice call?

From the MNO perspective, mobile voice usage and revenues as a percentage of overall revenue have been declining for many years now in North America. In Europe, Africa and Asia the tipping point occurred in a similar time frame from 2012 to 2014, with the larger portion of revenue shifting from mobile voice to data. Most other global regions are expected to follow as advanced 4G and 5G networks enter new markets and smartphone technology penetrates much of the third world.

A recent report entitled "[The Unbearable Lightness of Mobile Voice](#)," by TECHNECONOMYBLOG clearly shows this trend toward decreasing mobile voice usage. And although the report states that mobile voice is far from dead, it certainly doesn't seem to be moving in the right direction in terms of revenue and customer demand.

According to Cisco Systems, over half of voice traffic in North America will take place over WiFi connections by the end of this decade.

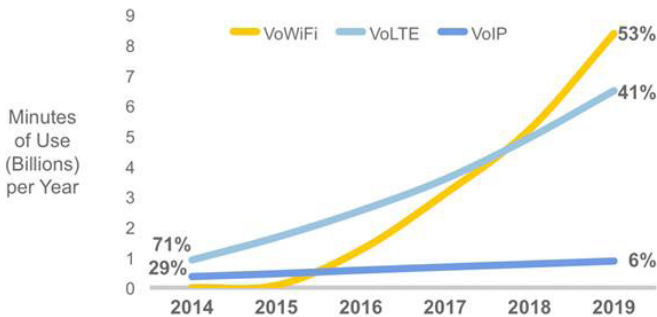
In India, a report by Credit Suisse forecasts that half of the revenue from voice and messaging could be eliminated by VoIP apps such as WhatsApp and Skype. This is a major threat to network operators in India where 80 per cent of their revenue still comes from voice. The Credit Suisse report goes on to say that the impact of VOIP will cause the providers to increase their data tariffs, slowing the adoption of broadband. Similar stories out of South Africa, Malaysia and other parts of the world indicate that this is a global trend.

Clearly, the combined issues of reported poor service quality and revenue shifting away from mobile voice to data and other services will continue to drive the telecom industry towards new means of monetizing data and application services. With no foreseeable increase

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in future revenue from mobile voice, investment in cellular networks to support mobile voice will decline in favor of investment in data infrastructures, paving the way for wide-spread adoption of mobile VOIP.

Faced with these changes in customer behavior and network usage, operators, carriers and major service providers are responding by offering WiFi calling services, adjusting their revenue models and planning for the eventual shift toward data-only networks as part of their 5G strategy.



Network Operator WiFi Calling

AT&T has responded by introducing automatic [WiFi Calling by AT&T](#). The service will automatically place a VOIP call if the cellular network is either weak or completely unavailable. So far, the service is only available within the United States,

and U.S. territories of Puerto Rico and the Virgin Islands. It also only works if you use an iPhone 6.

Verizon has also announced the availability of [WiFi Calling by Verizon](#), but only for Android-based Samsung Galaxy S6 phones for now with other devices, including iPhones, sometime later in 2016.

Sprint has WiFi calling for both Android and iOS devices, but only the Android devices will support SMS when a cellular connection isn't available.

Of course if you've been following WiFi calling from the major U.S. carriers, you'd already be aware that CNET reported that [Sprint and T-Mobile](#) introduced their services years ago, with T-Mobile first introducing their Wifi calling service way back in 2007.

Google has also been dabbling in the WiFi-cellular voice integration space with Project Fi. A recent [article by Nicholas Armstrong](#) covers the pros and cons of Google's service. Although a good start, the unidirectional hand-off from Wifi to cellular and the delays encountered during transitions will likely not be acceptable to most customers.

Revenue Models

Two revenue models are emerging to support the future of a data-only network to support application IP traffic as well as VOIP. These are a flat-rate service with unlimited usage and a pay-as-you-go model. The best example of the flat-rate model is Swisscom. With a [customer-friendly web application](#) to recommend service levels, Swisscom offers unlimited calling, messaging and data access within Switzerland, as well as limited roaming in the EU and Western Europe. With unlimited data, moving to mobile VOIP becomes easier, allowing Swisscom to begin a phase-out of mobile voice as consumer demand shifts from voice to data.


An example of a pay-as-you-go model is PTeI Mobile's PAYGO service. This model offers voice calls at 5 cents per minute, 2 cents per text message, and 10 cents per megabyte of data. Using their [web-based cost estimator](#), purchasing 300 voice minutes, 1,000 text messages and 50 megabytes of data results in a charge of 30 dollars. With this model, PTeI revenue is directly based on customer usage, allowing consumers to choose between paying for mobile voice or VOIP on demand.

The appropriate model for each service provider is likely based on how they pay for their infrastructure usage, the target demographic of their customer base, how quickly their region is likely to move to a data-only network infrastructure and other factors.

Data-Only Networks

Finally, getting to data-only networks has a significant future advantage for network infrastructure operators. Unifying protocols will allow for better management of network traffic across cellular, small cell, WiFi and other emerging wireless network technologies, as well as backbone and long-haul services. It will also allow for better interoperability between providers of all three major delivery technologies: fiber, cable and wireless.

For this to occur, legacy infrastructure needs to be retired and upgraded in the US, Europe, Southeast Asia and other areas where cellular service was established primarily as a voice network. The eventual roll-out of 5G technology in the early 2020s may see the first deployment of data-only networks. The deployment



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of such a network will certainly signal the accelerated death of cellular-based mobile voice.