



4G LTE

By Russ McGuire - russ.mcguire@gmail.com

Let's be honest here. The telecom industry isn't exactly the best at marketing. While software companies have product names like Windows and Android, and phone companies have product names like iPhone, Droid, and Galaxy, the telecom carriers come up with cool names like ADSL and 4G LTE. Undoubtedly, carriers stick with those names because they are acronyms for really helpful descriptions of the services – right? Okay, maybe not. ADSL stands for Asynchronous Digital Subscriber Line and 4G LTE stands for Fourth Generation Long Term Evolution.

For an industry that has provided the essential component for the last two technology revolutions that have totally redefined how we interact with our world and how businesses and ministries operate, these guys sure don't do much to inspire their customers or to get due credit for their role in rocking our worlds for the better. (Disclaimer: I should know; I've worked in the telecom industry for over 25 years.)

Of course, even though many of us still use it as our primary connection, ADSL is “so

1990s” (I believe the first ADSL standards were defined in 1998). All the cool kids have moved on to mobile broadband, and in this decade, you aren't really cool unless you have 4G mobile broadband. Sprint was the first nationwide carrier to offer 4G services in 2008 using a technology called WiMax, of which I've written in the past. (WiMax is a pretty effective name. Unfortunately, Sprint marketed their WiMax service as Sprint 4G.) These days, all the carriers (including Sprint) are moving to a more recent technology standard called LTE.

What is 4G LTE?

LTE – long term evolution – is a wireless communications standard defined by the 3GPP (3rd Generation Partnership Project). It is considered a fourth generation wireless technology. First generation wireless services were analog (with data speeds similar to a 9600 baud modem). Second generation wireless moved to digital (with data speeds similar to a 56k modem). Third generation networks used spread spectrum broadband technologies (with speeds similar to early DSL services – up to 1Mbps). Fourth generation networks are architected with IP end-to-end to reduce latency and deliver much higher speeds (currently similar to high end cable modem services, with multi-Mbps downlinks).

As technology agents in ministry, we have plenty to be excited about when it comes to 4G LTE. As carriers broaden their coverage footprints, we can expect to have a full broadband experience wherever we go, supporting video streaming (up and down), rich applications, and speedy Internet access – from our smartphones, tablets, and laptops. Since LTE is being universally adopted as a global standard, it won't face the same battles between CDMA (Sprint, Verizon, and much of Asia) and GSM (AT&T, T-Mobile, and all of Europe) as we experienced through the 2G and 3G eras. That means chipmakers and device manufacturers can quickly get to scale economics driving the benefits of Moore's Law into our mo-



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bile lives (rapidly increasing capabilities with steady or falling prices). 4G networks also cost about one fourth to one fifth as much to operate as 3G networks on a per gigabit basis.

So, what's not to like about 4G LTE?

Many Christians have an automatic negative reaction to the word "Evolution" – but that's no reason to dismiss the technology. Even if you think the idea of a "long term evolution" fails to inspire your mobility enthusiasm, you've got to admit multi-megabit, low-latency, multi-media friendly connectivity wherever you want to go is a pretty cool thing.

The real concern, for now anyway, with 4G LTE is with the structure of pricing plans. As I write this article, Verizon and AT&T both offer 4G LTE services. Neither one of them offer an unlimited price plan. Their plans are capped and when you hit the cap, you start getting charged overage fees and your speed may be throttled to a pretty pitiful experience. Verizon charges \$30 per month for 2GB of data, \$50 for 5GB, and \$80 for 10GB. If you go over your allotment, you pay \$10 per GB. AT&T gives you 3GB for \$30 or 5GB for \$50. AT&T also charges \$10 for each GB over your cap.

MetroPCS also has a 4G LTE network and they have plans starting at \$40 per month with unlimited web browsing (but caps on multi-media). However, MetroPCS only offers 4G LTE for smart-



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phones, not for tablets or laptops. Sprint has [announced](#) that their 4G LTE service will be available starting in the first half of this year, but hasn't yet announced pricing.

So, how quickly can you burn through a few GB of data? When the new iPad launched in March, [the Wall Street Journal](#) reported that one Verizon customer burned through his 2GB by watching two hours of college basketball. That's pretty quick.

So even though 4G costs less to operate per GB than 3G, the faster speeds mean you burn through those GBytes much faster.

So, what can we do?

At least until pricing plans change, moderation will be necessary. Use WiFi whenever it is available. When you are connected via 4G LTE, be aware of the applications you are using – even banner ads in games can use up surprising amounts of bandwidth. Conserve your bandwidth for when you really need it. Watch the non-HD versions of videos if they are available. Shop for the plans that provide the most bandwidth for the least money with good coverage where you're likely to need it. Bottom line – exercise wisdom and discretion.

“Be not among drunkards or among gluttonous eaters of meat, for the drunkard and the glutton will come to poverty, and slumber will clothe them with rags.” (Proverbs 23:20-21 ESV)

It is my hope and prayer that these articles on the power and danger of technology will encourage you in your daily walk with Christ. Whether it is the printing press, personal computers, the Internet, mobility, Wi-Fi, social networks, or 4G LTE, new technologies continue to advance our ability to know God and to serve Him, wherever we go.

Russ McGuire is an executive for a Fortune 100 company and the founder/co-founder of three technology start-ups. His latest entrepreneurial venture is Hschooler.net (<http://hschooler.net>), a social network for Christian families (especially homeschoolers) which is being built and run by six homeschooled students under Russ' direction.



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