THE MOBILITY REVOLUTION: Beyond the Phone

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In previous columns, I've talked about the "normal" ways in which we experience mobility in our lives – using a cellphone, and using mobile broadband (3G or 4G). We can think of these uses as simple substitutes for the old way of doing things.

Wireless is Disruptive

In the book *The Innovator's Dilemma*, Clayton Christenson introduced the concept of disruptive technologies. "Disruptive technologies bring to a market a very different value proposition than had been available previously. Generally, disruptive technologies underperform established products in mainstream markets. But they have other features that a few fringe (and generally new) customers value. "

Cellphones generally don't provide as good of sound as their wireline grandfathers. This is simply a matter of physics – the need to compress the audio signal to consume less available bandwidth, and then operating all of that in a dynamic, somewhat unpredictable environment. Wireless voice service also generally costs more than landline voice service. When initially introduced, the new value proposition of mobility only appealed to a very limited audience. However, as prices have fallen, call quality and reliability have improved, and as we have become a much more mobile and connected society, increasing numbers of us are cutting the cord and taking all of our voice traffic wireless.

The same phenomenon holds absolutely true for mobile data. Wireless data provides less bandwidth at a higher price than the existing wired solutions, initially addressing the needs of a very limited market. But technology advances and increasing scale have improved performance and reduced costs, which, combined with our increasing mobility, results in very broad adoption of wireless for data. Today, the wired Ethernet market is suffering at the hands of various flavors of WiFi. Meanwhile, mobile broadband choices (especially the now emerging 4G offers) are making it viable to cut the cord on data as well.

In Christensen's terminology, the traditional telecom industry has been disrupted by new wireless technologies.

Wireless Connectivity Built In

However, I think there's a larger (but hidden) revolution happening.

I believe that, just as microprocessors have been built into virtually every type of product that has a power source, over the next several years, wireless connectivity will be built into virtually every type of product that has a microprocessor. For the past few years I've been tracking this trend with a monthly post at my blog called "Beyond the Phone." I see this trend increasing, and becoming increasingly strategic to the definition of competition across industries.

What does this look like? There are a couple of examples that are easy to understand.

Personal Navigation

The first example is GPS-based personal navigation devices (PND). You probably know these products by their manufacturers, with the industry leaders being Garmin and Tom Tom. This sector has come under tremendous pressure from cellphone-based navigation software in a typical Christensen-like disruptive play.

Early cellphone GPS solutions cost just $10/month, putting price pressure on standalone GPS devices which typically cost (at the time) nearly $1000. To make matters worse, in 2008 Sprint started bundling free navigation service in their Simply Everything price plans, further pressuring PND companies. More recently, Google has started providing a free version of their Google Maps web-based service with turn-by-turn directions. While these cellphone-based solutions don't perform as well as standalone units in terms of satellite acquisition, battery life, and in-car integration, they do offer hard to beat prices plus real-time information including construction detours and traffic delays.

Garmin, Tom Tom, and others in the PND business have responded with reduced pricing, but have also had to respond by integrating wireless connectivity into their devices in order to match the real-time information provided by cellphone-based solutions. (For example, see Garmin's nuLink services.)

Electronic Book Readers

The second example is the electronic book reader market. eReaders have been available for years, with Sony being the most aggressive of consumer electronics companies in pursuing the opportunity. However, the market has been very limited.

Just over two years ago, Amazon introduced the Kindle, an eReader with one very powerful differentiator – Amazon had worked with Sprint to integrate wireless connectivity into the device. This enabled Amazon to make it very easy for consumers to search Amazon's large (and rapidly growing) catalog of electronic titles, purchase, download, and within about a minute, start reading a new title. The Kindle was an immediate phenomenon, and this most recent Christmas, Amazon (one of the world's largest booksellers) sold more eBooks than physical books!

The company went on to launch two more versions of the Kindle with Sprint, including a version intended to replace your daily newspaper (in partnership with the New York Times and other publishers) and intended to lighten the load of textbooks carried by college students (in partnership with Princeton and four other universities). In the past few months, a number of competitors have launched eReader products with features similar to the Kindle, and Amazon has launched a new version of the Kindle with AT&T connectivity to expand globally.

More important than the actual devices, these eReader products are redefining the business model for publishers. Some believe eReaders can save the publishing industry, while others believe it will eliminate the need for publishers. In any case, the entire industry will be changed.

So What?

Other than the fact that we readers of *Christian Computing* love new gadgets, what impact does any of this have on our ministries?

On one hand, this phenomenon will have almost no direct impact on our ministries. It likely will have no fundamental impact on how pastors prepare and deliver their sermons (although they may use an eReader with multiple Bible translations, commentaries, and reference materials all conveniently integrated into one highly portable device). It likely will have no fundamental impact on how we worship (although display monitors and projectors likely will follow microphones into the wireless realm). It likely will have no fundamental impact on how we serve those around us who are in need (although we likely will have better, more relevant information at our fingertips as we serve them).

On the other hand, wireless connectivity being built into all kinds of products will change everything about how we interact with our world, and that means that it will fundamentally alter every aspect of how we minister to those around us.

Let's go figure out how to use these God-given advances for His Kingdom and to His glory!

Russ McGuire is an executive for a large wireless provider. He has over 20 years experience in technology industries. He also serves churches and ministries through Living Stones Ministry (http://lstones.com) and has recently launched Hschooler.net (http://hschooler.net), an online social network for Christian homeschooling families. He is the author of The Power of Mobility *(Wiley, 2007) and his observations on the mobile industry can be read at his personal blog at http://mcguireslaw.com.*