The mobile age gold rush

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New telecommunications service providers are inventing new business models that undercut traditional customer/service provider models. 'Non-wireless companies' are becoming 'Mobile Virtual Network Operators', or MVNOs; they 'rent' capacity from existing networks and rebrand the services (Internet, phone, etc.) as their own. They are capturing a large share of the business, shifting the dynamic of the entire sector, fuelling the extraordinary growth of data usage seen around the world and exacerbating the demand for new RF spectrum to handle the traffic.

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When thinking about the state of the telecom industry, I am reminded of Australia's Gold Rush in the 1850s. Vast numbers of gold-seekers, from virtually every continent, found themselves in a new land that broke traditional rules and offered boundless opportunity. Today, those in the wireless industry are finding themselves in similarly unchartered territory with limitless possibilities, as the rapid evolution of mobile technology is leading to fundamental changes in the telecommunications industry.

Countless new devices and services are being developed and these innovations will combine with faster data speeds to integrate 3G, and soon 4G, bringing mobile broadband even further into our lives. Each new stage of mobile technology has enabled extraordinary capabilities. We have quickly moved from the first generation analogue world in the 1980s, to the second generation (*2G*) digital voice and simple message service (SMS) in the 1990s, to the rich data services of 3G we see now, and soon to the exclusively IP (Internet protocol)-based world of the fourth generation. The mobile technology generations ('G's) - the advances in mobile technology standards, are not, themselves, of great interest to consumers. What is important is what each stage allows us, as users, to do - whether it's accessing Facebook from the train, checking milk vat levels from the other end of the farm, or having our heart monitored in real-time while watching TV.

The most recent evolution to 3G has brought an unprecedented shift in the business models the telecommunications industry is built on. 3G has done more than just allow vendors to sell more devices; it has opened the floodgates for developers, inspired manufacturers, and introduced opportunities for a whole host of vertical industries - changing what it means to be a telecommunications company.

In order to keep pace, mobile operators need to fundamentally rethink the role they want to play in the future of telecommunications. Traditionally, telcos have controlled the relationships with consumers - providing them with devices and billing them for using their services. Nowadays, telecommunications service providers have caught on and have begun to wrestle ownership of the relationship with the end-user away from the telcos by developing end-to-end services - including connectivity packages - as an extension of their product offerings and marketing this offering direct to consumers. In this way, these 'non-wireless companies' are becoming 'Mobile

Virtual Network Operators', or MVNOs, by 'renting' from existing networks and rebranding the services (Internet, phone, etc.) as their own. This new business paradigm provides exciting opportunities for businesses across numerous industries, but has enormous implications for incumbent telecommunications providers.

One of the best examples of an MVNO today is Amazon. With its 3G-enabled eReader, the Kindle, Amazon is able to offer an end-to-end service to its customers. Users can access and browse Amazon's website and, of course, download books. This is all done via 3G network connectivity. What makes this different is that the customer has no idea what mobile network they are actually using. Amazon has created a relationship directly with the customer, effectively marginalising the operator in that value chain - Amazon even issues the bill.

In Japan, there are two examples of the world's largest technology manufacturers entering the data side of the business. Dell directly provides users of its HSPA-enabled laptops with mobile broadband access, via Japan's NTT DocoMo's network, and HP partnered with Japan Communications to rent wireless data spectrum and sells inexpensive netbooks to customers who sign up for prepaid data service. In both cases, the operators have been bypassed with regards to a significant revenue generator - the ownership of the customer relationship.

For years, operators have been competing against each other, based on the value of their brands, for individual customers and businesses. Now they are competing for contracts and chunks of business of an unprecedented size - shifting the dynamic of the entire industry.

To fight demotion to commodity status, operators must re-evaluate their strategy. So many operators today continue to market their business based on price, not value; this is simply not feasible for much longer. Operators need to ask themselves, what do they want their relationship with customers to be? Who would they want their customer to be? Do they want to be an operator that trades on the value of their brand, using branded devices and services to build up a loyal customer base? Do they collaborate with MVNOs and rent out their networks to these businesses and new vertical players and allow them to introduce the possibilities of 3G to their customer base? These strategic questions are relevant to an operator's long-term survivability.

New and evolving business models can provide exciting opportunities for both businesses and consumers in a number of different industries. For example, we are seeing manufacturers of SLR cameras putting 3G mobile chips into their products. This means you can upload photos from wherever you are straight onto Flicker or Facebook, or email them to friends or family direct from the 'traditional' camera. Imagine being out with your kids and being able to upload a photo of them straight to grandma's 3G-enabled digital picture frame sitting on her mantelpiece. And some vehicle manufacturers are already building 3G chips into cars as a way in which to track vehicle performance, notifying the owner if there is something wrong, or as a way in which information and entertainment can be downloaded. In the same way, medical devices can track our body's performance and alert medical staff in real-time if a problem is encountered.

3G-enabled healthcare is an area that promises tremendous benefit to all members of society. With a focus on preventative rather than reactive healthcare, 3G wireless technology provides patients and caregivers with greater freedom, gives physicians access to improved, timely information enabling better diagnosis, and helps society lower healthcare costs. Today, wireless biosensors (smart band-aids) and connected glucose meters, give people a more personal, effective and real-time healthcare experience. In the near future, innovations such as 'smart pills' or 'ingestible event markers' will report when a pill is taken - using tiny, embedded RFID chips - helping to better manage medication usage. Imagine the commercial opportunities presented through wireless healthcare for operators as they partner with medical institutions and vendors to offer a differentiated, premium service for those who need it.

Before the telecommunications industry can even catch its breath, we find ourselves teetering amidst industry hype on the edge of a 4G world. LTE Advanced is being developed as we speak. The move to 4G will bring higher bandwidth, increased data rates and multi-carrier transmission; consumers will get better audio and video streaming, higher quality data and voice transmission.

While the mobile technology opportunities are limitless, there are still many challenges and perhaps the most significant is to ensure sufficient spectrum is allocated for these services in the future. By the end of 2014 we expect to see as many as 2.8 billion 3G wireless subscriptions (source: Wireless Intelligence, April 2010). Around the world, 3G operators already see explosive growth in wireless data usage. According to ABI Research, the amount of data consumed by subscribers worldwide in one month in 2014 is likely to exceed the total amount of data consumed in all of 2008. With this 12-fold increase in data usage, operators, and of course regulators, are now scrambling to look for ways to make more spectrum available to carry the expected increase in data traffic.

As we all know, spectrum is a finite resource and while advances in technology continue to extract as much as possible from available spectrum, our insatiable desire for data access while we are on the move means we need to look at ways to make more spectrum available. Indeed, we should see some relief in many markets around the region as governments mandate closure of analogue TV broadcast in favour of more efficient digital broadcast, thereby allowing the use of freed-up spectrum for mobile wireless networks (i.e. the 'Digital Dividend'). However, that relief will only become available for most of us after 2015. As such, we continue to look at how to use whatever spectrum we now have more effectively with today's wireless technology.

The increase in data usage will put added pressure on government ministries and regulators to ensure they allocate the spectrum responsibly. There are significant amounts of TDD (*time division duplex*) spectrum either available or underutilized, especially in the Asia Pacific region, that could be better used for more widely industry supported 3G family of wireless technologies.

3G wireless technology is unearthing numerous exciting opportunities. The new business models emerging in the wireless world will affect all mobile operators, vendors, developers and vertical industries. The 'wireless-ification' of virtually every aspect of our daily lives will present enormous opportunities and challenges to governments in addition to the industry. The 3G ecosystem is more dynamic than ever before and players will need to adapt to the changes made by the others. All this is good news for consumers, of course; the wireless future will deliver us the rich experiences we have longed for - limited only by the extent of our imagination. ●