

Telco Innovation in the World of 5G

Seth Newberry, General Manager, Open Mobile Alliance



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Seth Newberry is the General Manager of the Open Mobile Alliance (OMA) where he directs the operations for the organization. The Open Mobile Alliance delivers open specifications for creating interoperable services that work across all geographical boundaries, on any bearer network. Its membership includes all key elements of the wireless value chain, and contributes to the timely and efficient introduction of services and applications to the market. Mr. Newberry brings more than 25 years of experience in the global telecommunications industry with successful Operational, Technical, Team Management and Business Development roles. He holds a B.A. and M.B.A. from the University of Arizona.

Mr. Newberry served as event chairman for day 1 of Services Innovation World held September 27-28, 2016 in London. The following article discusses points made during the conference about fostering innovation as the mobile industry transitions to 5G.

Wireless Innovation is Everywhere

Wireless Operators and their suppliers are consumed by the prospect of a virtualized network, the promise of 5G speeds and capacity, the rising volume of IoT deployments, and the associated application of wireless technology into automobiles, healthcare, public utilities, municipal

governments and homes. The speed of innovation and the forces that are driving innovation into the wireless ecosystem begs the question, "Who is driving the path of innovation?"

It is worth looking backward to establish the arc of innovation as we look forward. At the inception of both the Internet and of the cellular wireless networks, innovation preceded standardization. Different transport systems rose, networks were established, and standards followed that allowed for interoperability and efficient operation. Winners arose, losers perished, network technologies converged, and adoption grew. As the network layer standardized, the service layer flourished. Standards Development Organizations (SDOs), such as 3GPP, ITU and OMA, were formed to as platforms to enable the development and evolution of wireless technology and to achieve the goal of global interoperability. Members of these organizations, the mobile operators and their suppliers, were at the top of the value chain and acted as the drivers of innovation.

Wireless operators live in the shadow of "Internet speed innovation" expectations. Given the complexity and constraints of wireless networking, they have made credible progress in keeping up with that challenge. The future of wireless will employ a process likely to be dominated by agile development of technology and platform prototypes in collaborative projects which put a premium on "code first" using open source tools and community based solutions. Creative individuals and companies operating not only in the traditional telco space, but also in automotive and healthcare, retail, utilities, municipal and national infrastructure, will drive the demand for innovation in wireless. The challenge is creating usable standards from this naturally chaotic form of innovation.

The Evolution of Value Vectors

Over the past 30 years in the computer industry, we have watched the center of innovation migrate from big iron computing to the PC to software platforms and operating systems to application platforms such as browsers, social media, and e-commerce platforms.

A similar shift is happening in wireless but the value

centers are more complicated to identify. On one hand, a wireless network is a complex and expensive thing to create and maintain. Wireless networks are increasingly important to daily life, just as power distribution, water, and transportation systems are. This implies the traditional wireless operators will play a central role for years to come. On the other hand, because wireless transport has become so common, its presence is now a significant assumption in every product. That implies a demand for change and innovation at the Services layer that no single industry can manage. Just to contemplate a single example: it is no great stretch of the imagination to assume that in a few years, every new automobile will require a network connection before it can even start. It is equally hard to imagine that the Operator community alone can adapt to that reality. Add health-care, retail, smart cities, and so on to the examples and you can see the scale of the challenge. So an important question to ask is, "Where is the industry-scale conversation happening to make that level of innovation plausible and efficient?"

The challenges to the incumbent wireless operators are profound. Data growth is nearly infinite while spectrum and capacity is not. Network infrastructure is moving toward virtualization. Customers are changing and becoming more diverse with the emergence of powerful vertical industry consumers. Government agencies and vertical industries are creating new demands on the network and retail consumers are more sophisticated in their expectations of the wireless network. The talent pool available to the Operators is moving away from the craft-oriented telecom model to the Dev-Ops oriented compute model. The application developer talent pool no longer fits a top down engineering model, but instead is a geographically diverse pool of contributors, managing code builds with Github and Slack and increasingly deploying publicly available code in the process.

Throughout all of this change, the commitment to reliability and quality of service is immutable. In fact, as more industries come to depend upon wireless networks to deliver their own products and services, the demands on reliability and security become even higher. In this scenario, the wireless operator has moved from the top of the value chain, to a role as a supplier to the industries that will use wireless transport as a component of their products or services.

Managing Innovation in a New Paradigm

Given all of these conditions, how can telco operators hope to successfully inspire and manage innovation?

One area where operators do have an opportunity to innovate is in their ability to embrace the needs of their new customers. The wireless industry and emerging industry verticals have yet to come together. Individual Operators are making some great inroads with individual automotive or healthcare or retail, or manufacturing companies. But the industry-to-industry connections are not yet obvious. Automotive standards bodies live apart from Telco standards bodies, healthcare standards bodies and so on.

At Services Innovation World, we heard reports of operators fostering innovation by creating digital-only business units to experiment and thrive inside or beside the

parent operator. These groups are intentionally kept small to ensure they do not create large initiatives that cannot be integrated into the parent company. This also seems to be a nod to the fact that innovation is important but lives in tension with the increasingly mission critical role of the wireless industry. It seems like a sensible way of finding a path forward and appears to be an experiment many of the leading operators are willing to make.

We did not hear much discussion of the revenue impact of these digital initiatives although they seem to be recognized as the price of remaining competitive and relevant. During day one of Services Innovation World, Orange made the comment that fast iteration is the key to innovation and that the ultimate expression of success is not forcing a new initiative to be adopted but rather creating internal demand for the new service. These innovation business units often create services that cater to the sophisticated consumer or enterprise looking for service on demand, personalization, a multi-device continuum and a streamlined customer experience.

Another point we heard is that successful innovation is often geo-specific. Turkcell pointed out that, given a demographic where 35% of their potential business customers do not have Internet, many of their new business customers do not understand terms like "cut/paste". Building services for these customers may mean a new user-interface that simplifies business applications and eliminates jargon created by the digital revolution. This point was further exemplified by a moving presentation by Safaricom (Kenya) and Telenor Pakistan, moderated by Analysis Mason, about the M-PESA application that allows in-app billing by subscribers for goods and services. 30% of the GDP in Kenya is transacted using this service. As an example, a small vendor, by virtue of her credit rating and relationship with the operator can purchase goods through her mobile, sell the goods, and pay it back at the end of the day, pocketing a small profit. Here is a case where our industry contributes to a significant public good in some emerging markets, allowing micro transactions that give an entire segment of the population the means to prosper. One of the interesting conclusions we drew from the presenters is that some of the real winners of the digital network may turn out to be based in emerging economies that skip the false starts of early adopters while innovating around practical services for businesses and consumers.

The Likely Path to 5G

The (utopian) promise of 5G is a locally sourced, globally interoperable, relatively homogenous, collection of all digital networks seamlessly servicing business, government and consumer needs while innovating at the speed of the Internet. That will probably occur some day. In the real world however, operators will pick and choose how to innovate based on the needs of local conditions, economies and regulations moderated by their imperatives to maintain a robust network for today's consumers.

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