

How mobile operators can handle the growing appetite for data

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The 21st century has been declared the era of mobile communications, and appropriately so. In 2014, according to Cisco's Visual Networking Index (VNI) the total number of connected mobile devices (7.4billion) in use overtook the world's population for the first time. In other words, there are more devices than there are humans on this planet.



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Almost half a billion new connections were added in 2015, with smartphones accounting for most of that growth. It's undeniable: voice is dying and a demand for data is rapidly taking its place – evidenced by the fact that mobile data traffic has grown almost 400-million-fold over the past 15 years, while voice has shown hardly any growth for the last decade.

The decline of voice and the surge in data consumption puts the mobile operator under pressure to meet this appetite, by upgrading and optimising network infrastructure while attempting the tricky act of juggling customer experience with capital outlay. This situation is made even trickier by the fact that there is increasing demand on mobile operators to lower the cost of data for consumers, essentially forcing operators to find smarter and more cost-effective ways to upgrade their networks to keep their subscribers satisfied.

Increase in data traffic driven by mobile applications

Cisco's VNI revealed that the average smartphone usage grew by 43% in 2015 with the average amount of traffic generated per smartphone in 2015 being 929 MB per month, up from 648 MB per month in 2014. Furthermore, smartphones represented 97% of total global handset traffic last year, as users turn away from their laptops, choosing instead to browse the internet, engage on social networks, stream videos and music content as well as gaming, through applications on their smartphones.

Such is the rate at which mobile subscribers are consuming data that new technologies alone cannot keep up. Because of the consumer's growing appetite for data there is a bigger demand on network capacity, and operators are discovering that the more capacity they give, the more consumers will use.

In order to keep up with growing demands network operators have been continuously working to improve their infrastructure and we recently saw the introduction of LTE (Long-Term Evolution) networks offering high-speed wireless communication. This offered the user a significant increase in speed and ease of use for mobile applications, which is itself responsible for the resulting increase in data appetite which eventually results in congestion on data networks and slower connections. It's a continuous challenge for operators to deliver a good service to their subscribers without over-capitalising on the network.

Possible solutions for mobile operators

While it's not necessary just yet to develop new networks to handle the consumer's growing appetite for data, it's important to bear in mind that existing networks can be upgraded but only to a certain point. As with all technology each solution has a ceiling because it can only deliver or provide a certain amount of capacity, after which additional or entirely new equipment is required to give the network a new lease on life. Interim measures to optimise network usage includes the off-loading of traffic, which operators are already doing and here, data traffic is off-loaded onto Wi-Fi networks for example.

There is also the option to optimise frequency band usage by reducing the cell size of base stations in order to maintain and deliver higher network capacity, but this network densification increases capital outlay relative to technology improvements. These are short-term solutions at best, and the long-term solution will more than likely require the acquisition of more spectrum.

This is easier said than done, and even though there is already building pressure from network operators on the public regulator to re-allocate or re-farm the frequency spectrum this issue will need to be addressed in order to progress, as the identification of spectrum that is harmonised for use across regions will take considerable coordination between stakeholders.

Further, there is the option of exploring the possibilities of fibre as a complementary network technology. As wireless and wireline technologies meet and the separation between the two becomes blurred, the common denominator in both will be fibre. Future networks are more than likely to include fibre as an essential part of the network infrastructure, making it an attractive means to increase revenue by being able to offer more throughput as a result of investing in fibre.

The other option for mobile network operators is to work smarter, instead of harder. Here, partnering with the right supplier can make all the difference when it comes to maintaining commercial viability in the face of plummeting data prices. The right partner will not only offer mobile network operators their technology to enable the additional capacity while still providing reasonable, affordable prices to the end-user, but will also provide the services to roll out the improvements, upgrades and necessary infrastructure work in order to ease the process of network optimisation.

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