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Three Steps to Clear the Mobile Backhaul Bottleneck

The web-scale world means massive mobile consumption. What happens when demand for a product or service continues to grow exponentially year over year? Many Mobile Network Operators (MNOs) around the world face that very situation, with all the opportunity and challenges it entails.

The opportunity comes in the form of more and more subscribers joining MNO networks. There are 3.649 billion mobile phone users today, which means more than half the world's population now has a mobile device. These smartphone users are willing to pay for more expensive subscriptions than they were when using their legacy mobile phone counterparts.

But this growth is also a challenge, because almost all of those smartphone owners use their devices to access and upload content to social media sites[1] and stream content from Over-The-Top (OTT) content providers. For many users, smartphones are fast becoming their go-to devices for accessing the Internet. In 2015, the number of Web searches performed on mobile devices will surpass for the first time the number of Web searches performed on desktops or laptops.[2] This shift is creating a steadily increasing deluge of traffic within mobile networks; reports suggest that by 2019, 292 exabytes of data will traverse mobile networks every year, up from 30 exabytes in 2014.[3]

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For the mobile user, network congestion leads to lower-quality OTT service, resulting in a poor end-user Quality of Experience (QoE) and subscriber dissatisfaction. Because mobile subscribers increasingly consume streaming video content, investing in a network that delivers a superior QoE can decrease mobile subscriber churn.

Pump up the Bandwidth

Supplying all these mobile devices with enough bandwidth is the primary challenge facing MNOs. There are two facets to this challenge:

- Coverage – making sure the footprint of the service area provides adequate access to subscribers
- Capacity – ensuring the network is able to supply all the bandwidth demanded by mobile subscribers and their applications

Traditionally, MNOs have rolled out more large macro cell towers to increase the coverage and capacity of their networks. This approach is costly, however, and it is becoming increasingly difficult to find suitable locations from regulatory and environmental perspectives, as few consumers want large cell towers in their neighborhoods.

An increasingly adopted approach is to use small cells: smaller, low-power radios that are less expensive, cover smaller strategic areas, take up smaller footprints, consume less power, and are very rapid to deploy. Small cells can be deployed outdoors, to address concrete canyon not-spots and underserved rural areas,

1 TNW, January 21, 2015: "2015 Worldwide Internet, Mobile, and Social Media Trends", http://thenextweb.com/socialmedia/2015/01/21/2015-worldwide-internet-mobile-social-media-trends-get-376-pages-data/
2 eMarketer, December 5, 2014: "Mobile Search Will Surpass Desktop in 2015", http://www.emarketer.com/Article/Mobile-Search-Will-Surpass-Desktop-2015/1011657
2 PCC Mobile Broadband, February 25, 2015: "Six Mobile Data Trends that Will Influence Mobile Operators' Monetization, Network Monetization, and Service Delivery Strategy", http://www.policychargingcontrol.com/mobile-data-services-trends/4035-six-mobile-data-trends-that-will-influence-mobile-operators-monetization-network-management-and-service-delivery-strategy