

## Wi-Fi Wireless Trends 2015: The New Network

By Paul Mikkelsen

### It's an exciting time in the wireless industry.

Fixed and cable operators are strengthening their positions toward mobile operators in many markets due to the increased demands for broadband capacity. At the same time, all traditional operators are meeting increased competition from over-the-top (OTT) providers that often also introduces alternative revenue models into the equation, including advertising-based concepts.



As if this shouldn't be enough, Wi-Fi technology has taken the telecom landscape by storm, reshaping and impacting strategies for many carriers literally overnight. So how will these trends and the accelerated roll out of Wi-Fi in all forms, both on the device and network side, impact operators in 2015?

Before we go trend-scouting for 2015, let's spend a minute on the relevant question: "What's so great about Wi-Fi?"

In the "good old days", often referred to as "before the iPhone debut in 2007", mobile data usage had just started to become a hot topic. If we take it one step further, and go back to when BlackBerry's iconic 7200 series hit the shelves in 2003, it was already then clear that users wanted a device that integrated phone calls with other mobile data-based applications such as email or web browsing. Did you own one of those blue BlackBerrys? I sure did.



But it was with iPhone's introduction that mobile data usage started its exponential growth curve. Carrier networks were able to handle this traffic increase for quite some time; but today, demand has simply grown far beyond what many of the traditional carrier networks were designed to take on. That's where Wi-Fi comes in.

Wi-Fi has been (and still is) used as a network resource and a vehicle onto which carriers can offload mobile data traffic to ease the constraints on their existing mobile networks. Today everyone is trying to connect to Wi-Fi whenever possible, not least driven by the data caps in the cellular networks that most mobile data plans have implemented over the last two years and, of course, high roaming costs when one is out traveling.

As the need of data capacity continues to increase, some mobile operators have gone beyond their own controlled Wi-Fi networks by doing their best to help users connect to any available public amenity Wi-Fi networks in an automatic way. Surely this will help them to offloading mobile data to Wi-Fi. But they forgotten one important thing: as end-consumers we are paying our bills to receive good services – NOT to be pushed to any "best effort" and "uncontrolled" network.

Mobile operators without their own Wi-Fi network, or well-controlled partner networks, are facing an obvious risk to reduce their relevance among existing customers. So it

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boils down to: less relevant = less customers = less revenues = less profit.

In 2015 and beyond, you'll want to keep an eye open for the following trends:

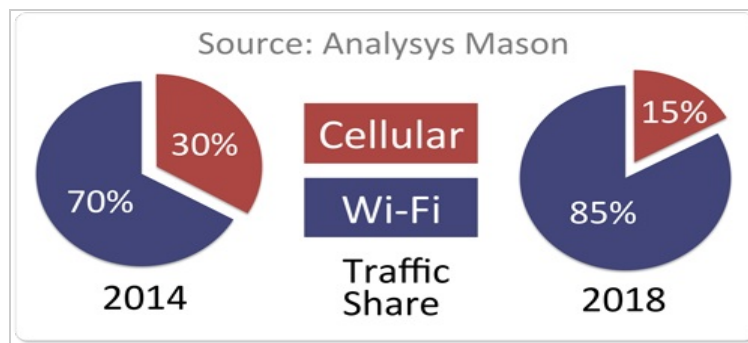
### Trend #1: Carriers lose 85% of mobile data traffic to Wi-Fi by 2018

The need for Wi-Fi offloading will only increase. Mobile data traffic will grow to 15.9 exabytes per month in 2018 (that is a 61 percent CAGR growth 2013-2018), with [video generating over 69 percent of that traffic](#). In fact, according to GSMA, [mobile data revenue will overtake voice revenues by 2018](#).

With the proliferation of Wi-Fi-capable devices, and even Wi-Fi-only devices, it makes sense for carriers to offer Wi-Fi as an alternative to 3G and 4G connections. Once again, according to Cisco, [56 percent of all traffic from 4G mobile devices will go over Wi-Fi in 2018](#).

The predicted shift from cellular traffic to Wi-Fi-based traffic means that only 15 percent of the carriers' subscribers mobile data traffic will go through their cellular networks in 2018 (if we include Wi-Fi-only tablets).

We can see that trend already today, as carriers currently control only 30 percent of that traffic.



If carriers are only relevant for 15 percent of their subscriber's traffic, churn will increase significantly. Many carriers have already started to realize that Wi-Fi is the best insurance policy they can get to protect their core business in a Wi-Fi centric world. The choice for an operator is to either go back to the old business models (unlimited data plans), deploy Wi-Fi, or risk becoming irrelevant to customers. In 2015, most carriers will start to recapture the traffic through controlled Wi-Fi.

### Trend #2: Next-generation Wi-Fi Calling

The capability for Wi-Fi calling has been around for quite some time. Today we're seeing the dawn of [next-generation Wi-Fi Calling](#) where support for Voice-over-Wi-Fi (VoWiFi) is embedded natively in the device, in the same way as for Voice-over-LTE (VoLTE), which enables that calls can be made through any Wi-Fi connection with access to the Internet.

Wi-Fi Calling is a game changer for mobile operators, especially those that have poor in-door coverage. As more and more people are giving up their landlines and use their mobile phone as the primary contact to the world, they will be more open to switching to another operator if the connection is poor. But, with Wi-Fi now more or less in every home and other indoor environments, Wi-Fi Calling will offer a much better user experience in many situations and thus reduce churn.

Wi-Fi Calling will also work when the user is abroad and there will be no roaming cost for the operator. T-Mobile, a pioneer in next-generation Wi-Fi Calling, let this benefit pass transparently to the subscriber, and a call through Wi-Fi Calling abroad is, therefore, charged at the same rate as at home. This type of business plan will, of course, be even more attractive for business people and others with extensive traveling.

### Trend #3: VoLTE continues to take off

There are several reasons why operators are moving toward VoLTE. During a number of years, most operators have focused on deploying 4G/LTE data services which means that, as soon as someone makes a call, it has been routed through the traditional 2G/3G circuit switched network. VoLTE now offers operators the opportunity to take the next step toward that, and all voice calls will be IP-based.

Other reason for introducing VoLTE is that LTE is more spectrum efficient than 2G/3G and also that operators can start to re-farm valuable spectrum from existing 2G/3G networks to be used for future LTE and upcoming 5G services.

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#### **Trend #4: Cable MSOs go all-in on Wi-Fi**

Competition from mobile operators has forced cable operators (MSOs) to provide more nomadic Internet access by deploying Wi-Fi. By creating a separate virtual network (SSID) in the cable box in a subscriber's home, a so-called Homespot, MSOs can use that excess data capacity to offer Wi-Fi services to their existing customers.

Wi-Fi services are especially attractive for cable MSOs that also are offering MVNO-based cellular services over a third-party network, as offloading as much data as possible onto their own Wi-Fi network will reduce their third-party costs significantly. This trend will most surely accelerate in 2015 with the introduction of Wi-Fi Calling.

#### **Trend #5: Venue Wi-Fi**

The 2014 FIFA World Cup was one of the first, big demonstrations of large scale Venue Wi-Fi. By having the privilege of supporting customers such as TIM Brasil and Oi with their carrier Wi-Fi and offloading solutions, we have good insight in this success story; and I can say with some confidence that we are at the tip of the iceberg with regard to Venue Wi-Fi. Next year we'll see venues taking this to a whole new level: offering branded Wi-Fi that uses location-based information to offer users a personalized service. When heading toward the snack stand, the Wi-Fi network throughout the stadium will recognize where you are and send you a coupon for a free soda the same time it updates you with real-time game stats. At the end of the event, your smartphone guides you to the closest exit.



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#### **Trend #6: Venue Wi-Fi for footprint**

Carriers are also using Venue Wi-Fi to gain footprint. They are looking to bridge the gap between Carrier Wi-Fi and Venue Wi-Fi. This is all about a secure, automatic user login while still offering user interaction for branding and advertising at specific venues.

#### **Trend #7: Monetizing “free” Wi-Fi**

All this free Wi-Fi needs to be monetized. In 2015 we'll see a much stronger push from carriers leveraging opportunities to sell Wi-Fi to brands, or venues, to generate revenue with Wi-Fi.

#### **Trend #8: Integrating social media**

You will also see more integration with social media, and location-based technology to personalize the Wi-Fi experience. Learning more about users provides carriers with a wealth of data for different marketing activities.

#### **Trend #9: Small Cells and Wi-Fi coexist**

Small cells will be yet another driver of Wi-Fi simply because the majority of small cells will include Wi-Fi capabilities. It's up to the operators to decide which radio technologies and spectrums to be activated, but as small cells predominately will be deployed indoors at the same time the operators are in need of all the spectrum they can get, together with the fact that many of today's devices love Wi-Fi, leads to a natural conclusion that we will see an increase in Wi-Fi availability with the small cell deployments to come.

From a pure technical point of view, small cells can be considered a head-to-head competition to Wi-Fi; that's, however, a shortsighted way to look at it as Wi-Fi adoption mainly is driven by device capability and end-user preferences. Wi-Fi and small cells will, therefore, coexist and become part of each other's framework.

#### **Trend #10: Smarter Wi-Fi offload**

Wi-Fi offloading will become more sophisticated in 2015, with traffic steering allowing the devices to connect to Wi-Fi only when conditions are optimal.

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It will be policies and not the device's unconditional love for Wi-Fi that will determine whether or not the device will connect to Wi-Fi. In its simplest forms, there can be policies per location and time-of-day (rush hour traffic) but there will also be more dynamic policies measuring the status in the 3G/4G and Wi-Fi networks in real-time and make policy decisions based on this.

Wi-Fi will simply become one equal network in the heterogeneous network concept, where the main focus stays on providing the best possible service experience and performance to the end-user, regardless of network.

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