Wi-Fi Offload, There’s Nothing to Fear!

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Presentation Overview

• Wi-Fi Offload — What is it? Why is it happening? What is in it for me?
• Trends driving this business
• Market opportunities available
• Effects on traditional communications infrastructure
• Adding Wi-Fi Offload to existing communications infrastructure

What is Wi-Fi Offload?

• Whether you call it;
  – mobile data offloading
  – 3G data offloading
  – Wi-Fi offloading
  – or just offloading
• Wi-Fi Offloading is the use of wireless networking technologies to deliver data originally meant for cellular networks
Why is Wi-Fi Offload Happening?

• "We must find a cheap way of dealing with capacity demand."
  — Dr. Matthias Siebert, of Deutsche Telekom

- Retain control?
- Reduce churn?
- Get visibility?
- Improve performance?
- Improve network reach?
- Improve network coverage?
- Increase network capacity?
- Give customers the best network?
- Seamless connectivity?
- Postpone capital investments?
- Give Customer extra benefits?
What is in it for me?

• Reduce Churn
• Monetization Opportunities
• ROI

Trends Driving this Business

Wi-Fi Market Drivers

Terrestrial Service Providers:
- Declining phone penetration
- Internet customers moving to residential Wi-Fi
- Customer retention/customer acquisition
- New revenue source through up sell, CC buy, analytics, OTT video options
- Municipal sales opportunity in meter reading (parking, water, gas, electric) and Public Safety
- Build on existing wireless Service Provider relationships
- Hospitality, MDU and SMB sales opportunity
- Need to defend service territory (land grab)
**Wi-Fi Market Drivers**

**Wireless Service Providers**
- Declining ARPU and declining contract customers
- Mobile devices are data hogs (T-Mobile, Sprint - Voice)
- New revenue opportunities (OTT video services)
- Lack of Spectrum (government delays sale) T-Mobile and Sprint opt out
- Macro Network cost (1 million per tower) ROI
- Rural challenge (population and income)
- Challenge to provide Nationwide Service Territories
- Convergence of technology (Hot Spot 2.0)

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**Wi-Fi Trends**

- Passpoint (Hotspot 2.0)
- Wi-Fi calling MNO
- Growth of Wi-Fi Calling Mobile Virtual Network Operators (MVNO)
- Cable Wi-Fi Consortium
- Mobile Carries Wi-Fi Offerings
  - Mobile and Wi-Fi Bundling
  - Prepaid Services
- Wi-Fi MVNO
- Neutral Hosts and Real Estate Investment Trusts (REIT)
  - American Tower, Crown Castle
  - Boingo, Smart City, iBahn

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**Mobile Data Users Mobidia Studies**

- LTE subscribers much prefer Wi-Fi to 4G
- US iPhone users consume most LTE and Wi-Fi data
Mobile Application Market Trends

American Adult Technology Users (as of January 2014)

Tablet: 47%
E-Reader: 12%
Smart Phones: 50%
Cell Phones: 80%

Source: Mobile Technology Fact Sheet - http://www.pewinternet.org/fact-sheets/mobile-technology-fact-sheet/

Mobile Application Market Trends

American Adult Cell Phone Internet Usage (as of May 2013)

Use cell phone to go online: 43%
Use cell phone to listen to music: 34%

Passpoint (Hotspot 2.0)

IEEE 802.11u Specification
- Allows for users to connect seamlessly on a secure wireless network—very much like a cell phone
- Only one-time user interaction needed
- Allows for roaming between different carriers

December 17, 2014: Time Warner and Boingo announce first Passpoint Roaming agreement free to Time Warner standard and business customers
### Wi-Fi Calling MNO

**Voice and Text Communications over Wi-Fi Networks**

- **Sprint**
  - Wi-Fi calling: Android devices
  - International Wi-Fi calling: August 28, 2014
- **T Mobile**
  - Wi-Fi calling: Android and Apple iPhone devices
  - Free texting with [Gogo Inflight Services](https://gogo.com)

### Wi-Fi Calling MVNO

- **Republic Wireless** [https://republicwireless.com/](https://republicwireless.com/)
  - Wi-Fi only calling plans
  - Wi-Fi followed by cellular calling plans
- **Scratch Wireless** [http://www.scratchwireless.com/](http://www.scratchwireless.com/)
  - Wi-Fi first
  - Paid cellular backup
- **Freewheel** [http://www.FreeWheel.com](http://www.FreeWheel.com)
  - Wi-Fi only calling plans
  - Unlimited data, text and talk

### Comcast's Hot Spot Signal for Sprint: WSJ Article

- Comcast and Sprint Wi-Fi battle and potential partnerships.
Wi-Fi Offload

Market Opportunities Available

Wi-Fi Call to Action

• Growth of "Unconnected Generation" loyal to experience Mobile Centric
  – Mobile data usage growing exponentially
  – Licensed spectrum squeeze
  • More data consumed on limited licensed frequencies
  • Growth of small cells and Wi-Fi offload
  – Wi-Fi is the new Access Line Network
• Growth of Cable Wi-Fi Networks
• Growth of MVNOs for Wi-Fi Calling
• What is your Wi-Fi Strategy?

Wi-Fi Offload

Effects on Traditional Communications Infrastructure
**Situation**

The power has shifted to the subscriber.
- One click choices, a diet of free fast Wi-Fi and little loyalty to brand means the mobile user has the power

**How to respond?**
- Allow subs to roam across a large virtual network of fast, secure inter-connected hotspots whether at work, home, play or across footprint—like other counties.
- Create Sticky Services, and premium high margin mobile data options for prosumers.
- Defend by deploying a Carrier Class version of Wi-Fi to support new customers and applications.

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**Wi-Fi Offload**

Adding Wi-Fi Offload to Existing Communications Infrastructure

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**Diagram**

- Wi-Fi Offload
- Control/Signaling
- Client Data Path
- Internet
- SP Wi-Fi Service Manager
- Mobile
- RADIUS
- MAP/M3UA
- RADIUS
- CoA
Service Provider Wi-Fi Architecture

SP Wi-Fi Deployment Steps

Service Provider Monetization Roadmap
Step One
SP Wi-Fi Deployment Business Verticals

- Hotspot/Hotzone
  - Land Grab: Set your network position
- Customer Retention
  - Mobile device strategy
- Value Added Services
  - Public Wi-Fi
  - Municipalities
  - Chamber of Commerce

Step One
SP Wi-Fi Deployment Business Verticals (continued)

- Timed Non-Customer Access (hour, day, week, month)
- SMB/MDU
  - Network Footprint Expansion
  - Fixed Broadband Expansion
  - Customer and User Analytics
- Hospitality
  - Managed Services (NOC and Call Center)
- Education
  - Managed Services (NOC and Call Center)

Step Two
SP Wi-Fi Deployment Business Verticals

- Regional Wi-Fi Footprint
  - Consortium model
  - Consortium roaming agreements
- MNO Data Offload
  - Regional scalability
- Captive Portals
  - Walled gardens and analytics