

Americas Summit

# Enhancing the Mobile Experience with Connectivity

**PETERS TIMOTHY,**  
Sr. Director, Product Management  
Qualcomm Atheros



## Connectivity Expands Qualcomm's Impact Beyond Mobile

### Mobile



### Computing



### Consumer Electronics



### Networking & Infrastructure



#### WIRELESS

Wi-Fi • Bluetooth • Location • FM • NFC

#### WIRED

Powerline • Ethernet • PON

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## A Growing Demand for Mobile Connectivity

### Content

**Accessing content  
anywhere, on any  
device**

### Context

**Knowing where  
you are, as well as  
who and what is  
around you**

### Convenience

**Making life easier  
with mobile  
services – beyond  
communication**

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## Mobile Data Traffic Growth

GLOBAL DATA TRAFFIC GROWTH

**~2x**

FROM 2010- 2011\*

PREPARING FOR

**1000x**

DATA TRAFFIC GROWTH



\*Global growth, some regions grew more/less

## Solving the 1000x Challenge



**MORE  
SPECTRUM**



**NETWORK  
EFFICIENCY**



**SMALL  
CELLS**

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## Wi-Fi Offload Improves Network Efficiency

**802.11ac**

**Passpoint™**  
(Hot Spot 2.0)



**Peer-to-Peer**  
(Miracast™)

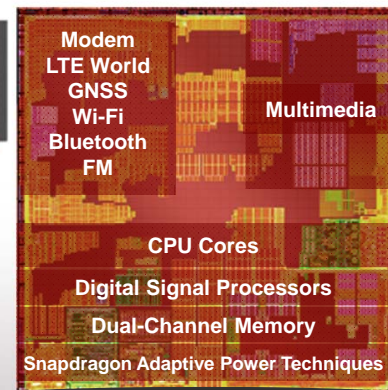
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## Only Qualcomm Integrates Wi-Fi, Bluetooth, FM and Location into 3G/LTE

- ▶ Enhanced Wi-Fi / LTE Coexistence
- ▶ Improved Performance, Lower Latency
- ▶ Wi-Fi connects directly to the WAN core
- ▶ Always-on positioning without added power
- ▶ WAN connection assists location
- ▶ Pin Compatible WCN3660 → WCN3680

**WCN3680**  
802.11n/ac  
BT/FM  
Radio

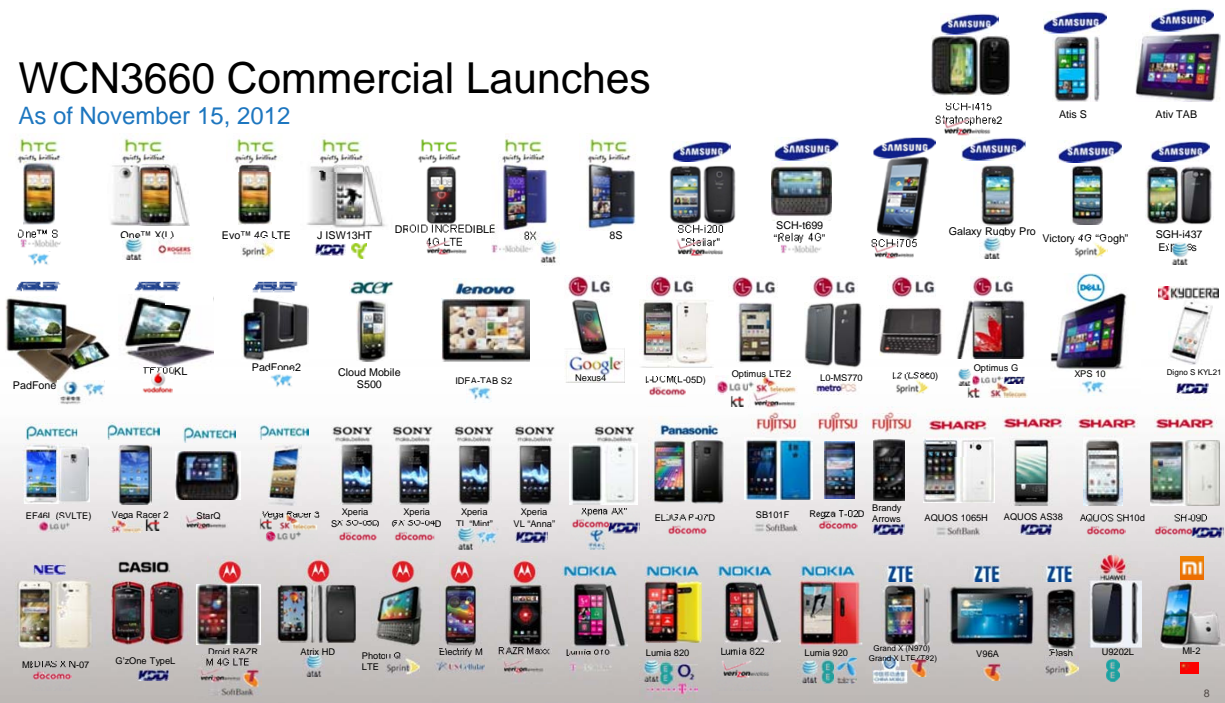
Qualcomm  
**snapdragon**



Over 300 28nm Designs in Development with Integrated Connectivity

# WCN3660 Commercial Launches

As of November 15, 2012





## Industry-Leading Mobile Wi-Fi Performance

"Unsurprisingly the One X posts the highest WLAN throughput I've seen from a smartphone to date."

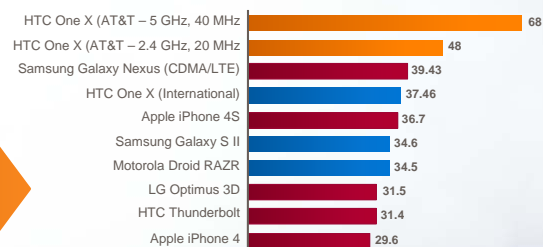
**Brian Klug**  
Sr. Smartphones Editor

**Superior performance and power  
are driving broad acceptance**



**The HTC One X (MSM8960 + WCN3660)**

Wi-Fi Throughput (Mbps)



QUALCOMM Wi-Fi  
COMPETITOR 1  
COMPETITOR 2

## Qualcomm 802.11ac

**Complete 11ac ecosystem:** Mobile, computing, CE, and networking

**Seamless migration** from 11n to 11ac in mobile devices

Designed for **efficient Gigabit performance** in wireless networks

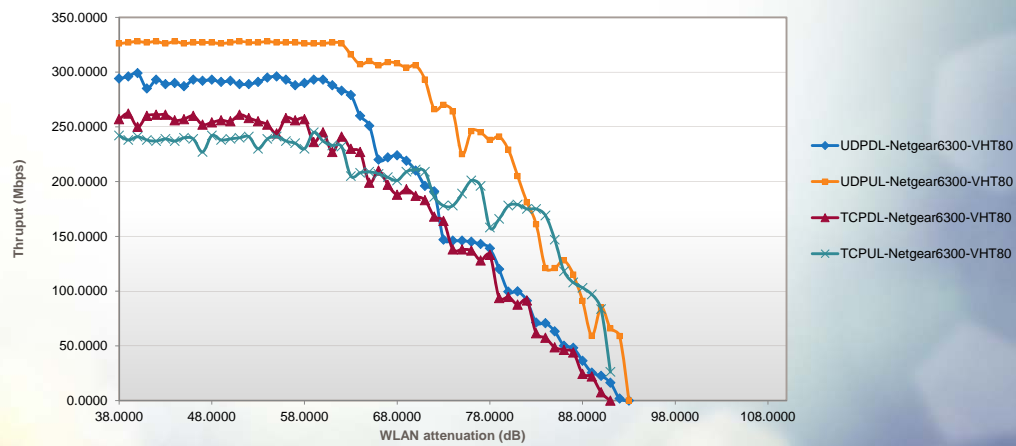
High level of system integration **lowers power and solution cost**



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## Qualcomm Atheros 11ac for Mobile

### Rate over Range Performance



Measured on APQ8064, Netgear R6300 AP Open Mode Default Settings

## Improving Wi-Fi Offload with Hotspot 2.0 Features

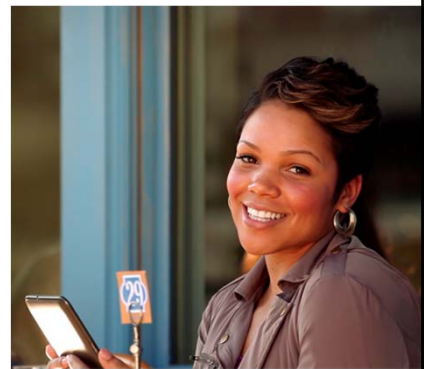


**Passpoint™**

Simple, Seamless Roaming

Automates Hotspot Discovery  
& Security

Roaming Agreements Streamline  
Wi-Fi Offload for Operators



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## Peer-to-Peer Connections Add Simplicity and Convenience

### Wi-Fi Direct™ and Miracast™

- ▶ Sharing content and mirroring screens
- ▶ Aligns with industry standards and certification programs

Videos and Games  
Presentations  
Web Pages  
Photos  
Social Networking



AllJoyn™

- ▶ Open source application framework
- ▶ Makes proximal peer-to-peer easy for app developers

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## Qualcomm IZat™ Platform



## Use Cases for Precise Indoor Location

Enabling New Context-Aware Applications in Public & Private Venues

- ▶ More precise navigation
- ▶ Local services discovery
- ▶ Proximal “push” advertising and content
- ▶ Finding people and items of interest
- ▶ Consumer analytics



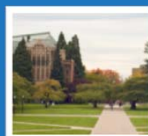
Shopping Malls



Stadiums



Airports



University Campuses

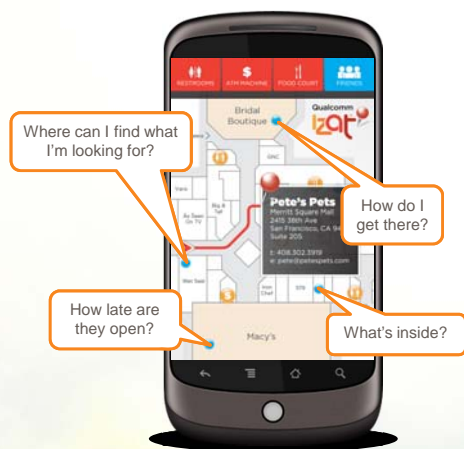


Museums



Convention Centers

## Qualcomm Brings Unique Value



- ▶ Combined mobile, GNSS and Wi-Fi leadership
- ▶ End-to-end platform satisfies all indoor and outdoor use cases
- ▶ Higher accuracy and consistency
  - Advanced Wi-Fi measurements (RTT + RSSI)
  - Without labor-intensive fingerprinting or site surveys
- ▶ Fostering relationships across the ecosystem (including Cisco and Meridian)

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# Thank You

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Qualcomm Technologies, Inc  
5775 Morehouse Drive  
San Diego, CA 92121-1714