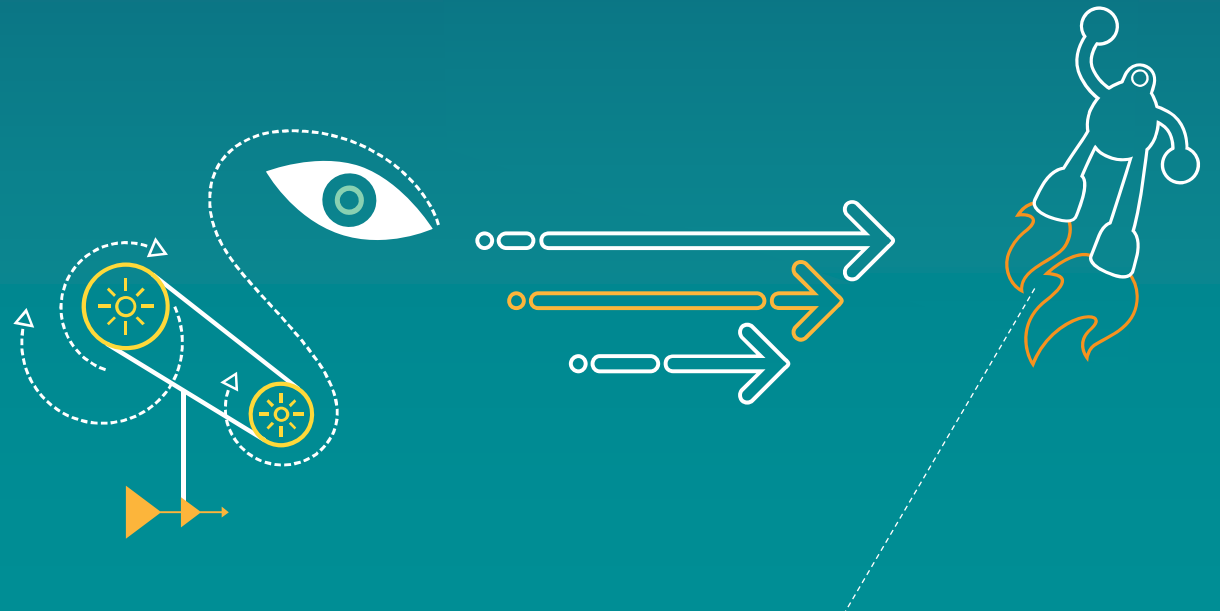

FCC Panel on Importance of GPS as National Infrastructure

QUALCOMM®

June 20, 2014

Cormac Conroy, PhD
Vice President Engineering and Product Management



Importance of GPS for E-911 and Enhanced Location Services

Carrier Mandates

GPS plays a key role in the operators' compliance with the FCC's E-911 Phase 2 Mandate

- All US carriers today rely on GPS to satisfy the FCC E-911 Phase 2 Mandate



Standards

Standards are key to wide industry support

- CDMA: Hybrid of A-GPS and AFLT per IS-801-1 protocol
- GSM/WCDMA: A-GPS per RRC protocol
- LTE: Hybrid of A-GPS and OTDOA (LTE trilateration) per LPP protocol



Services

GPS is foundation for many LBS services

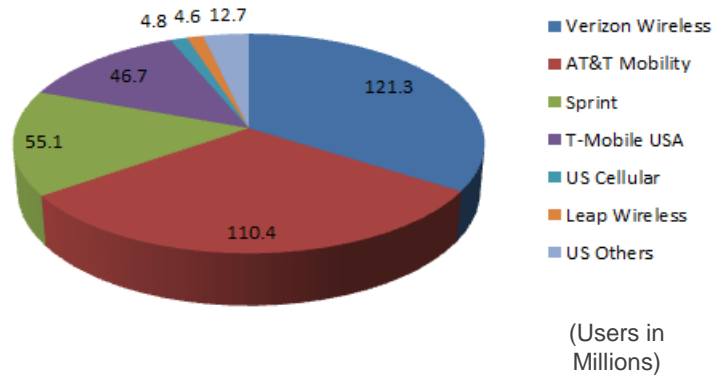
- Turn-by-turn navigation
- Outside pedestrian navigation
- Location-based alerts and reminders
- Location as context in mobile apps



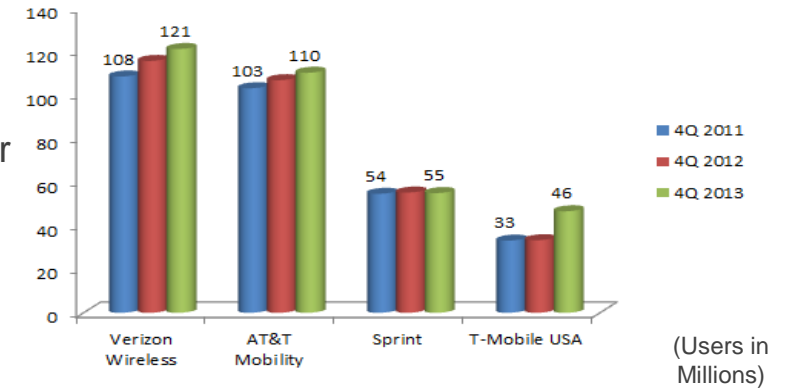
Subscriber and Smartphone growth in North America

N. America Operator Subscriptions (Q4, 2013)

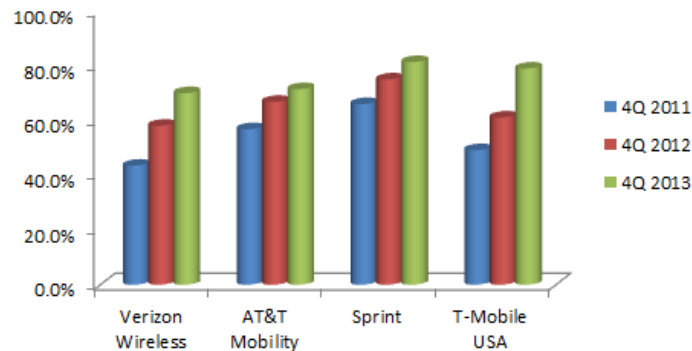
Total Subscribers = 356.4 M



N. America Subscriber Growth (2011-2013)



Smartphone Share of Subscriptions



- Number of handsets shipped in US will reach 177.4M, up 2.1% from 173.7M shipped in 2013.
- All handsets sold in N. America across all wireless operators are required to support E-911 services
- Smartphone penetration was greater than 70% across all 4 major operators as of Q4, 2013
- GPS technology is a core/essential feature across all phones used for emergency and Location Services

Source: Strategy Analytics - Wireless Operator Performance Benchmarking Q4 2013 and IDC World Phone Tracker

Thank you

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