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TITLE: Measuring Deployment and Uptake of LTE and Other Advanced Mobile Technologies

Measuring Deployment and Uptake of LTE and Other Advanced Mobile Technologies

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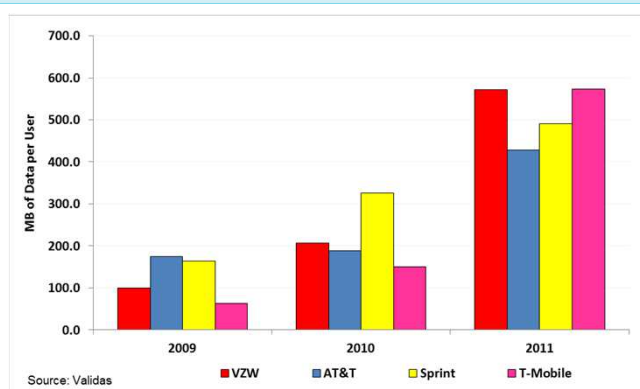
Overview of LTE in the U.S.

- ▶ Verizon Wireless launched in December 2010
 - As of Nov. 2012, Verizon Wireless' LTE network covered more than 250 million POPs with plans to expand LTE nationwide in 2013
 - As of Nov. 2012 AT&T's LTE network covered 150 million POPs with plans to expand the network to 80% of U.S. population in 2013
 - In September 2012, Sprint offered LTE in 19 cities with plans to expand to 100 additional cities and then to complete its LTE build-out by the end 2013
 - In November 2013, T-Mobile announced its LTE network covers 203 million people in 254 markets

Mobile Data Traffic

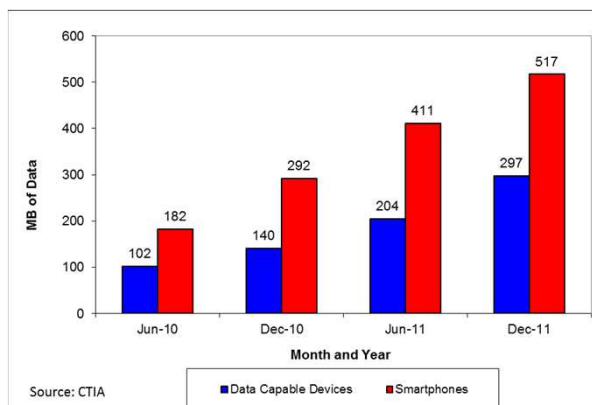
- ▶ Industry estimates show that U.S. mobile data traffic increased 62% from 2011 to 2012, and that mobile data traffic in 2012 was approximately 73 times the volume of U.S. mobile traffic in 2007
- The average U.S. mobile user consumed an estimated 568 MB of data per month in 2012
- An estimated 11% of U.S. mobile data users consumed over 2 GB of data per month

Average Monthly Data Consumption Per User, 2009–2011



Source: Validas, *3 Year View of US Wireless Data Consumption: 2009–2011*, Prepared for the FCC by Validas. FCC, *Mobile Wireless Competition Report*, Sixteenth Report, Chart 27 (March 2013).

Average Monthly Data Consumption Per Device 2010–2011



Source: *CTIA Year-End 2011 Wireless Indices Report*, at 233. FCC, *Mobile Wireless Competition Report*, Sixteenth Report, Chart 25 (March 2013).

Why Collect Data?

- Data collected by the FCC play an essential role in our work. We use the data to:
 - Meet statutory obligation to assess annually the state of broadband availability
 - Update and monitor our universal service policies
 - Meet public safety obligations
- We also make data available to states, researchers, and the public.

FCC Data Reform Efforts

- ▶ The 2010 National Broadband Report recommended that the FCC revise its data collections to better monitor broadband availability, adoption, and competition
- ▶ In response, the FCC launched its Data Innovation Initiative
 - Focused on modernizing and streamlining how we collect, use, and disseminate data
- ▶ Proceeding culminated with June 2013 Order modernizing the FCC Form 477 data program

What is Form 477?

- The FCC established Form 477 in 2000 to provide the Commission with uniform and reliable data about broadband Internet access connections to households and businesses not comprehensively available elsewhere.
- All facilities-based providers of broadband and mobile voice services and all providers of fixed voice and interconnected VoIP services must file Form 477.
- Information is collected as of June 30 and December 31 each year.
- The FCC reports summary statistics of subscriber data in its *Internet Access Services* reports.

Summary of Changes from the Form 477 Modernization Order

		Current	New
Deployment		Data submitted voluntarily to SBI state entities, which then submit data to NTIA.	Mandatory filing with the FCC.
	Fixed Broadband:	Report speed tier of maximum advertised upload/download speed by census block.	Report maximum advertised upload/download speeds (not in tiers) offered in each census block.
		No distinction of residential from non-residential.	Distinguish residential from non-residential services where appropriate.
	Mobile Broadband:	Coverage areas by speed tier based on maximum advertised upload/download speed, with spectrum indicated. List of census tracts where service is advertised and available to actual and potential subscribers, by speed tier.	Coverage areas by technology, minimum advertised upload/download speed, and spectrum band. List of census tracts where service is advertised and available to actual and potential subscribers.
	Mobile Voice:	No data collected.	Coverage areas by technology and spectrum band.
Subscription	Fixed & Mobile Broadband:	Number of connections by speed tier, based on maximum advertised upload/download speed.	Number of connections by advertised upload/download speeds (not tier) associated with each product subscribed to in an area, census tracts for fixed and states for mobile.
	Fixed Voice & Interconnected VoIP:	Number of subscriptions by state and list of ZIP codes where service provided to end-user customers.	Number of subscriptions by census tract.
Both		Separate filings by state	Single, nationwide filing Provide Emergency Contact information, Form 499 Filer ID, and Study Area Code(s) served.

Changes to Data Collection for Advanced Mobile Technologies

- Previously Form 477 focused on *subscription data*, but beginning in 2014, the FCC will assume responsibility for the collection of data on broadband *deployment*.
 - Currently, the National Telecommunications & Information Administration (NTIA) collects deployment data.
- The Order makes a number of changes to reduce reporting burdens and enhance the usefulness of data collected.

Changes to Data Collection for Advanced Mobile Technologies

Specifically:

- We no longer collect data based on speed tiers.
- We will collect more granular deployment data, with information on coverage by technology and spectrum band.
- We create a single, uniform format for deployment data and replace state-by-state voluntary collections under differing methodologies.

Network Deployment Data - Coverage Areas

- Mobile broadband and mobile voice providers will provide data showing their **network coverage areas by technology, speed, and spectrum band**.
- Providers must also file a list of census tracts where service is **advertised and available** to actual and potential subscribers.
 - Allows us to determine accurately availability in cases where a provider's mobile network deployment footprint differs from its service footprint.

Network Deployment Data – By Technology and Frequency Band

- For each mobile broadband **network technology** (e.g., EV-DO, WCDMA, HSPA+, LTE, WiMAX) deployed in each **frequency band** (e.g., 700 MHz, Cellular, AWS, PCS, BRS/EBS), mobile broadband providers will submit polygons representing the nationwide coverage area of that technology.
- Data for each coverage area will show boundaries where users should expect the minimum advertised upload and download speeds associated with that network technology in that frequency band.

Network Deployment Data – By Speed

- Filers are no longer required to submit broadband deployment data in predetermined speed tiers (as they were under NTIA data collection).
- Providers of broadband services will provide advertised speeds—the **minimum advertised speed in each coverage area** for mobile broadband.
- Gives the FCC greater flexibility to group and analyze broadband speed data in useful ways.
 - Consistent with ITU data collections.

Subscription Data

- As with broadband deployment data, providers are no longer required to submit data in predetermined speed tiers.
- Providers will report number of broadband connections by advertised speeds associated with each product subscribed to in the relevant geographic area – states for mobile broadband.
- Mobile broadband providers will report connections by **minimum advertised upload and download speeds**.