
Definition of Broadband

2015 Technology Policy
Challenge

Problem

- ❖ The FCC would like input on establishing minimum service standards used to define “fixed broadband service” that is eligible for the Lifeline program

FCC 2015 Broadband Progress Report

- ❖ Annual evaluation whether “advanced telecommunications capability” is being deployed in reasonable and timely fashion
 - ❖ “High-speed, switched, broadband telecommunications capability that enables users to originate and receive high-quality voice, data, graphics, and video telecommunications using any technology”
- ❖ Conclusion: “advanced telecommunications capability” requires access to actual download / upload speeds of at least 25 Mbps / 3 Mbps (100 Mbps / 1000 students in schools; 1 Gbps in future)
 - ❖ Considers needs of multiple users (average household is 2.5 people, average family household size is 4.3)
 - ❖ Considers services that providers are offering today, as well as the services that American consumers are choosing
- ❖ Next inquiry: Examine other factors of availability, including usage allowances and price, latency, whether service at the relevant speed is available on a consistent and reliable basis, and whether the network is secure

History

- ❖ Last three FCC Reports found advanced telecommunications capability was not being deployed in a reasonable and timely fashion
- ❖ In 2010 FCC increased speed to 4 Mbps / 1 Mbps, up from 200 kbps / 200 kbps
- ❖ Last two Reports relied on the National Broadband Map data, but the data regarding mobile and satellite were not sufficiently reliable to support a conclusion

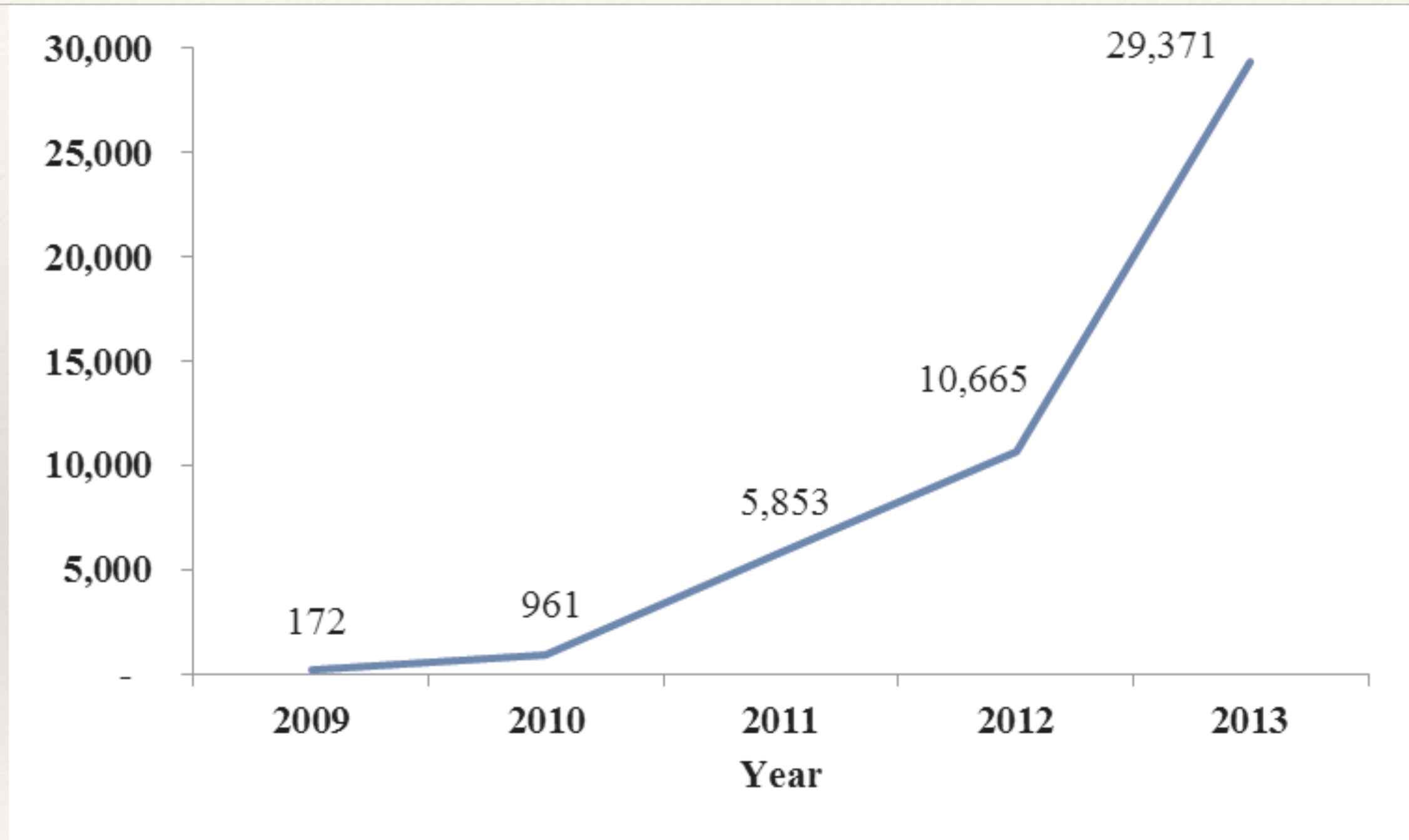
FCC Approach to *Advanced*

- ❖ Goes to Dictionaries for definition of “advanced” as applied in global context
- ❖ European Union — 30 Mbps Basic Broadband, 30-100 Mbps Fast Broadband
- ❖ FCC: availability of “highly developed or progressive services”
- ❖ Declines multiple benchmark approach, instead applying single benchmark of speed

Why Speed? Why 25 Mbps?

- ❖ Congressional intent of “advanced”, “high-speed”, and “high-quality” all imply speed
- ❖ FCC has reliable data on speed
- ❖ Broadband ISPs advertise recommend households get 25 Mbps (Comcast), 30 Mbps (Time Warner Cable), and 45 Mbps (AT&T)
- ❖ Needs of “high-quality” applications
 - ❖ Streaming video accounts for 67% of downstream traffic during peak
 - ❖ Emergence of Ultra HD requiring 25 Mbps or more
 - ❖ Telemedicine, distance education...
- ❖ Reflects current consumer adoption rates...

Residential 25/3 Mbps Connections (000s)



Source: FCC, 2015 Broadband Progress Report, p. 28

Other Points of View

- ❖ High broadband speed requirements could obsolete or disadvantage local access technologies (e.g., ADSL and satellite)
- ❖ Video requirements are well below 25 Mbps
 - ❖ 5 Mbps for HD (Dish and Netflix), 6-8 Mbps for HD (Apple)
- ❖ Web browsing, VoIP, social networking, cloud applications, machine-to-machine applications generally low bandwidth
- ❖ Other metrics than speed may better define advanced

Other Benchmarks?

- ❖ Latency: time for a packet to travel from source to destination in a network, measured in milliseconds (ms)
- ❖ Usage allowances: volume of data end user may send / receive as part of broadband subscription, measured in gigabytes (GB) per month
- ❖ Advertised speed: whether end user speeds are consistent with advertised speeds; measure is percentage of time that actual speeds meet or exceed advertised levels during peak usage hours
- ❖ Security: level of network security; measure?
- ❖ Price: price to end users for broadband subscriptions; measure?

Interesting Aside

- ❖ Open Internet NPRM (2010): Definition of “broadband Internet access service” is any “Internet Protocol data transmission between an end user and the Internet.”
- ❖ FCC rules for Preserving the Open Internet (2015):
 - ❖ *“A mass-market retail service by wire or radio that provides the capability to transmit data to and receive data from all or substantially all Internet endpoints, including any capabilities that are incidental to and enable the operation of the communications service, but excluding dial-up Internet access service”*
 - ❖ Declined to specify technical standard