

*Wireless*

## FCC's National Broadband Plan:

# L3/Netflix v. Comcast, Free TV, Net Neutrality confirm national need for 100+ Mbps FTTH.

Nordahl's NEW 105-page Report "The Future of the U.S. Television Business" details the issues.

### ▶ Netflix streaming service partner Level 3 Communications accuses Comcast of charging "Toll" for broadband delivery.

A "Toll Booth" on the information super highway, charging for the delivery of OTT TV?. Early this week, Level 3 accused Comcast of demanding a fee from Level 3 reportedly because of a high level of streaming content to Comcast broadband/cable subscribers originating from Level 3 facilities. A recent study puts Netflix's portion of all U.S. internet streaming and download traffic as high as 20% at peak times. Note that this does not mean 20% of total internet bandwidth capacity. Let's do a little math:

There are a total of about 80 million "broadband" subscribers in the U.S. but only about 50 million have download speeds capable of HDTV streaming. Comcast has about 23 million cable subscribers of which 17 million are broadband subscribers. Netflix expects to have about 18 million "members" by end 2010 of which (let's say) 10 million are streaming customers, or 20% of all 50 million HDTV streaming capable broadband subscribers. Presumably, nearly all of Comcast's 17 million broadband subscribers are HDTV streaming capable **which means that Comcast controls 33% of all 50 million HDTV download capable U.S. broadband households.** Disturbing?

Netflix reportedly streams HD (720p24/30) content at 2.6 and 3.8 Mbps (selected by the customer), thus let's say that the overall average is 3 Mbps. The streaming service is true VOD meaning that each customer is supplied a dedicated stream. Starting next year, Level 3 will become Netflix's primary "content delivery network" (CDN), although Netflix reportedly will continue to also stream through Limelight Networks and Akamai Technologies.

If Netflix simultaneously streams to 5 million TV households (10% of 50 million) at peak times, the total U.S. internet traffic due to Netflix adds up to 3 Mbps x 5 million = 15 Tbps. Proportionally Comcast then carries 33% or 5 Tbps on the average to 1.7 million Comcast subscribers at the local level.

At any local cable system neighborhood hub/node (let's say each node serving 1,000 subscribers), 10% or 100 subscribers would be streaming Netflix at a total downstream bitrate of 300 Mbps at at peak times. We do not know the architecture of the ISP interconnect with Comcast's many individual cable systems, but Internet connectivity is often made at the local or regional head end. Looking at a cable system with 100,000 broadband subscribers, at peak times, Netflix may concurrently stream to 10% or 10,000 households consuming a sustained 30 Gbps of the cable systems Internet portal capacity. It is a lot, but a cable system promising up to 15 Mbps download speed per broadband subscriber should not reach overload at 3 Mbps each for any number of subscribers. **BUT overall it does illustrate a real need for 100+ Mbps download broadband speed through independent FTTH connectivity to all U.S. households. Overbuild? You bet . . .**

## What will happen to Free Television?

Not long ago, TV broadcasters were adamant about Free Television. Now they seem willing to trade DTV spectrum and share a 6 MHz channel for FCC promises of monetary compensation. A 3 MHz assignment means less than HD, and the choice to do OTA-to-Homes **OR** Mobile TV. 50 million people rely on today's free OTA DTV service in full or in part, in about 20 million households. We need to rethink the Free Television issues, how a **national priority for independent FTTH to every U.S. household can support the free television delivery to many millions of Americans, including market leading 1080p60 and 3-D, without needing new formats and hardware.**



Just released by nordahl.tv LLC on October 10, 2010

## The Future of the U.S. Television Business

A 105-page in-depth Report detailing the current and future TV business in the face of FCC's National Broadband Plan

**A nordahl.tv HDTV Business/Technology Report:**

# The Future of the U.S. Television Business: (It's 3-Screens – Not 3-D)

This 105-page Report has been carefully assembled in the wake of the release of FCC's National Broadband Plan, for the purpose of detailing the current financial status of the U.S. Television Business, to analyze the value of the 600 MHz TV Broadcast spectrum, to discuss and present likely future scenarios of the U.S. Television Business, and to propose a NEW National Broadcast/ Broadband Plan.

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**This Report is essential reading for:**

- TV Broadcast Executives
- Cable TV/DBS/IPTV Executives
- Television Programming Executives
- Wireless Broadband/Telecom Executives
- TV Equipment Supplier Executives

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