

Debunking the “Broadband Competition Can’t Work” Myth

Unfounded pessimism and fear about the future of broadband competition is behind the call for Net Neutrality. Huge demand, declining costs, vibrant innovation & exploding spectrum availability fuels future competition. No entity has the means to control convergence bypass or inter-modal competition to restrict supply long term.

Demand is huge – rewarding new suppliers with huge growth opportunities.

- Broadband creates mainstream and “Long Tail” niche demand by enabling: convenience and productivity; functional utility; lower prices; more portability; new features/applications; customization; personalization; increased quality; and more diversity of choice in content and entertainment.
- Demand is driving everything analog to digital, everything communications to IP broadband and mobile
- Evidence of this exploding demand is overwhelming – for example:
 - ~50 million Americans have upgraded to broadband Internet access; ~190 million to digital wireless; ~100 million to mobile handsets with web access; ~60 million to digital TV; ~30 million to HDTV; and over 50% of all PCs sold are laptops, of which 95% are WiFi enabled.

Declining costs are lowering the cost of market entry and challenging incumbents.

- The rapidly declining cost of the core input in digital communications, microchip processing power, continues to fall per Moore’s Law -- i.e. that processing performance ~doubles about every 24 months.
 - Moore’s Law has held true for ~35 years and recent breakthroughs in bridging photonics and silicon (i.e. lasers in silicon chips) suggest Moore’s Law can continue for decades more.
- Moore’s Law efficiencies in performance/cost have been the single biggest enabler of competition:
 - Lower modem and electronics costs drove down the cost of DSL to enable \$15-20 pricing.
 - Wireless broadband models used to be uneconomic, like Winstar/Teligent, however they are now profitable: Verizon Wireless, Sprint, AT&T/Cingular, T-Mobile-WiFi, Clearwire-WiMax.
 - The formerly intractable interference problems of transmitting over electrical power lines (BPL) have been overcome by cheap powerful OFDM modems capable of bypassing interference.

Vibrant innovation rewards competitors with growth from new products, services and content.

- The three major dimensions of convergence: digital, mobility and IP combine to create exponential permutations of potential features, functions, uses, and innovations for products, services and content.
- IP convergence with discrete addresses for everything rewards mass customization/personalization.

Exploding spectrum availability enables more competitors and more competitive applications.

- Compression/OFDM technologies continue to multiply the capacity/efficiency of existing spectrum for licensed/unlicensed wireless spectrum; and for physical media: copper, coax, electrical, and fiber lines.
- Cable and telcos are pushing fiber closer to the home multiplying the capacity of existing plant.
 - The U.S. is the only country with a nationally-built-out cable infrastructure to the home.
- Previously under-utilized spectrum like MMDS, UWB and others is being put to more and better uses.
- FCC just completed its biggest spectrum auction ever; FCC will auction extremely powerful analog TV spectrum in 2008, and FCC is exploring expanded use of “White Spaces,” WiFi, and WiMax spectrum.

Convergence fuels competitive bypass undermining potential bottlenecks or gatekeepers.

- Digital and IP convergence (any-to-any connectivity) increasingly enable, encourage and force broad-based, inter-modal and vertical competition for broadband products, services and content.
- The bypass of potential bottlenecks/gatekeepers continues to get easier because of: Moore’s Law declining costs; the self-healing and re-routing nature of the Internet; multiplying IP-enabled broadband technologies; exploding availability of spectrum; and flourishing inter-modal competition.