# Covad Communications Company

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- Small Business Broadband Plan
  - Increase availability of innovative services at reasonable prices
  - Support job creation to improve US economy
- Next-Generation Build-out Plan
  - 100 megabits per second to US households and businesses
  - Target date of 2015

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- Increase productivity and economic output of small businesses in the US
  - Nearly half of private sector employees work for small businesses
  - Small business created 60-80% of net new jobs this past decade

- Expand small business access to faster, more reliable broadband
  - Increase use of higher-bandwidth services
    - Only 4% of small businesses purchase T1s (2007)
    - The rest rely, at best, on best-efforts consumer broadband
  - Reduce prices through increased competition
    - The average cost of a T1 for small business is $720 per month (2007)
      - Many areas of the country lack competitive alternatives
      - Helps explain the low adoption rate
  - Need for higher speeds at reasonable prices
    - The average cost for a slightly faster 2 Mbps symmetrical service is $2,500 per month (2007)

- Leverage existing assets, including copper
- Encourage innovation and competition

- Copper is key for most small businesses
  - Fiber only serves approximately 12% of buildings, generally in the urban core
  - Ubiquitous fiber build-out unlikely in the next 3-5 years
  - Cable plant does not connect to many small businesses
  - Cable services are “best efforts” and do not provide business-class QOS
  - Nearly all small businesses are connected to copper last mile
  - Copper is the main broadband medium for the next several years

- Copper supports innovative business-class broadband products
  - T1s and bonded T1s
    - 1.5 to 12 Mbps
    - Less than $200 per megabit, in markets that have competitive alternatives
  - Ethernet over copper
    - 1 to 20 Mbps

- Preserving the copper
  - Local phone companies want to remove existing copper in many cases
    - Socially inefficient to remove copper
    - Removal of copper results in customer that can only use local phone company's fiber
  - Copper should be kept in place
    - Enable continuing competition over copper
    - Allow regulators to find public interest is served by removal in unusual cases
  - If copper decommissioned, offer competitive carriers option to maintain the copper
    - Maintenance charges often included in existing rates

- Cost-based wholesale access to bottleneck facilities
  - Maintain TELRIC to ensure reasonable profit for local phone company
  - Bottleneck facilities include loops, transport, and collocation
    - In most cases, no alternative exists
    - “Market based” pricing, requested by local phone companies, makes no sense when there is no market
  - Eliminate disruptive forbearance process
    - Waste of FCC and companies’ resources
  - Reasonable “Sec. 271” rates for delisted elements
  - Oversight of special access rates

- Competition fosters innovation
  - Covad introduced retail DSL, prompting local phone companies to respond
  - MCI introduced low priced long distance services, prompting AT&T to respond

→ Customers benefit

- How to encourage competition and innovation?
  - Eliminate monopoly bottlenecks
    - Reasonable access to copper and other bottleneck facilities
    - Reasonable access to next-generation networks, using actual cost methodology
  - Without bottlenecks, innovation will thrive
    - VOIP
    - Bonded T1s
    - Ethernet over copper
    - High definition video and video-conferencing

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- 100 Mbps to US customers by 2015
  - 20 Mbps guaranteed bandwidth for two-way video
    - E.g., video-conferencing, distance learning, and telemedicine
  - Upgradeable to 1 gigabit per second, without the need to upgrade the last-mile
  - 10 Mbps for locations that cost more than $2,000 in installation costs or $75 per month in operating expenses
    - To make total social cost more reasonable
- Non-discriminatory and actual cost-based open access to the next generation networks
- Competitive market with multiple providers

- Total public/private cost is likely between $100 billion and $125 billion
  - Private cost likely approximately $50 billion
    - Using Verizon's FiOS build-out as a proxy
  - Public funding likely between $50 billion and $75 billion
    - $2,000 cap, with higher cost locations eligible for 10 Mbps, should keep total cost below $125 billion

- $50 billion, over 5 years, comes from private financing
  - Public funding of the additional $50 billion to $75 billion should improve chances to raise the initial $50 billion
  - If funds are scarce, government could provide financing at market-based rates

- $50 billion to $75 billion, over 5 years, comes from public sources
  - As an illustration, $50 billion, over 5 years, could come from $5 monthly USF charge on all broadband lines
    - Would apply to all broadband lines, including DSL, cable modems, T1s, and higher speeds
  - $25 billion, over 5 years, could come from reallocation of $5 billion of yearly federal USF to broadband
  - Broadband users would finance build-out – no general taxpayer funds needed

- Regional bidding process, with a single recipient of public funds for each region
  - Any technically feasible technology that meets the 100/20 Mbps requirements is eligible
- Leverage existing networks
  - Private and public entities allowed to bid
  - Depending on the market, lowest bid could come from telco, cable company, public entity, other entity, or combination
    - Open access ensures that parties that do not win bid can still provide services and innovation

- Non-discriminatory and cost-based access to the 100/20 Mbps
  - 100 Mbps are best efforts
  - 20 Mbps are guaranteed, with video level QOS
  - Resale of any other speeds offered by network provider
  - For locations subject to $2,000 cap, access to 10 Mbps
- Wholesale rates based on just and reasonable actual costs, plus reasonable rate of return
  - Tariffed rates
  - Similar to the electric utility model
  - Appropriate because the investment is new

- Open access to existing fiber networks, including hybrid copper-fiber networks
  - Wholesale rates based on just and reasonable actual costs, plus reasonable rate of return
    - Appropriate because the investment is new or extremely recent
    - Supported by the federal Telecommunications Act, including Sec. 706
  - Access to prequalification information segmented by type of network

- Japan and South Korea
  - 48% (Japan) and 43% (South Korea) of broadband lines are served by fiber
  - Government funding and encouragement
  - Open access requirements in Japan
- Australia
  - $30B fiber build-out plan, with open access for multiple providers
- Sweden
  - 20% of broadband lines served by fiber; open access in several cities, including fiber network in Stockholm

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- US customers will benefit from innovative products provided by a robust set of companies over the built-out 21st century network
- Small businesses will benefit from higher speed and lower cost business-class broadband services
- The US will maintain its competitive position in the global economy