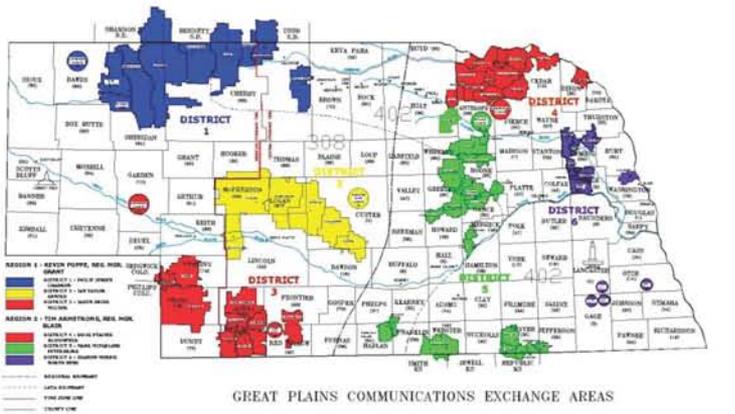


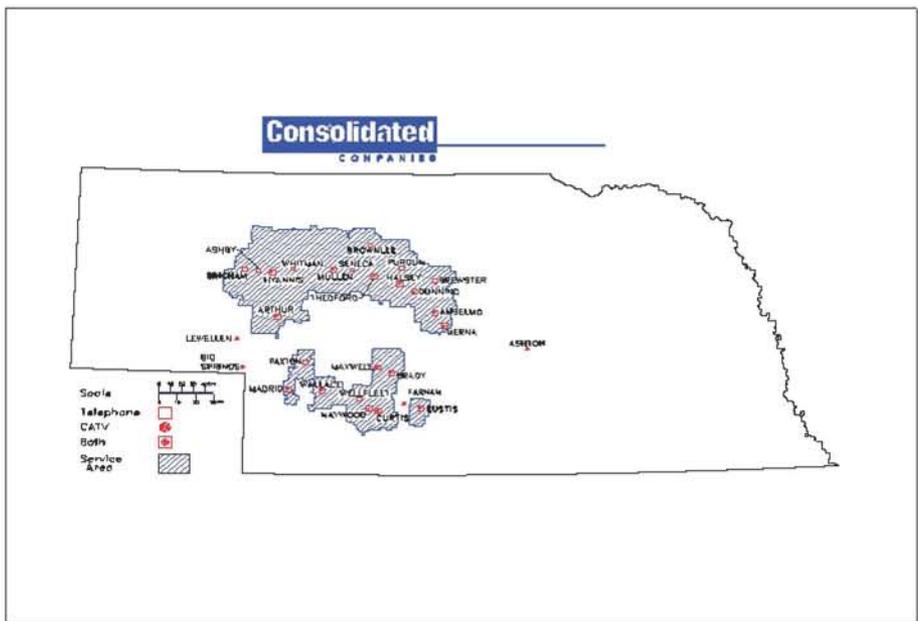
# Universal Service in a Broadband World

Ken Pfister and John Jordison, Great Plains Communications  
Wendy Thompson Fast, Consolidated Companies  
Harold Furchtgott-Roth, Furchtgott-Roth Economic Enterprises

December 2009



14,000 square miles  
 2 customers per square mile  
 1,700 miles of transport



9,000 square miles  
 0.75 customers per square mile  
 530 miles of transport

# In Sparsely Populated Areas, End User Charges Alone Will Not Support Broadband

- Network support is insufficient and unstable.
  - Network costs are higher for broadband than for circuit switching.
  - Access minutes are decreasing.
  - Universal service support is under attack.
- Operating Costs are higher in rural areas.
  - Middle mile costs are high because of the distance to reach the Internet backbone.
  - Bandwidth demand continues to increase, driving up middle mile and backbone costs.
  - “Windshield” time is significant.
- Customer charges are generally comparable already.
  - Without external support, rates will become unaffordable and certainly not comparable.
  - Business plans that work for more populated areas are irrelevant in extremely low-density areas.

# Different Carriers Have Different Circumstances and Incentives

- Without outside support for high cost areas, rural companies cannot afford to install and maintain plant.
  - 95% of our customers can receive terrestrial broadband.
  - Although small, rural companies have deployed at least 200 kbps<sup>1</sup> to most customers, much of that plant will not meet tomorrow's broadband needs.
  - About half of small, rural companies' customers are in rural areas.
  - Unless revenues are sufficient and stable, investment in additional broadband-capable plant will be curtailed.
- Financial constraints of price cap carriers cause deployment to be nearly exclusively in urban areas.
  - RBOCs and mid-sized carriers receive 39% of total ILEC support<sup>2</sup>, yet over 80% of their customers are in urban areas.
  - RBOCs have not even fully deployed broadband in their urban areas.
  - Support is needed for high-cost areas; however, restrictions need to be applied so that support is only spent in those areas.

<sup>1</sup>Source: NTCA Broadband/Internet Availability Survey

<sup>2</sup> Includes HCL, LSS, HCM, IAS and ICLS

# Broadband Support Should Be Designed to Attain Policy Goals

- Policy goals
  - Deployment of ubiquitous broadband
  - Support efficient networks
  - Promote adoption through affordable rates
- Broadband Support should be
  - Sufficient and stable to encourage investment
  - Reflective of the costs required to provide service
  - Targeted to areas more granular than study areas or exchanges
  - Directed to areas, not types of companies
  - Provided only with greater accountability

# Target Support and Apply Regulation Based on Market Conditions

- The nation cannot afford to support multiple networks. Our analysis shows:
  - Two-thirds of existing USF dollars are being used to subsidize competition in areas where service already exists.
  - Needed support nearly triples when competition is funded.
- Existing structures that attempt to define market areas will not work, e.g. exchanges, study areas, MSAs.
- Support and regulation should be targeted to where the market will not work.
- Areas should receive universal service support, regardless of the carrier serving the customer.
  - In truly rural areas, broadband competition will be minimal no matter how much stimulus money is provided.

- Develop different approaches for
  - **Competitive Market Areas (CMA)** — Areas where the costs associated with broadband deployment will *not* deter provision of broadband services.
  - **Market Failure Areas (MFA)** — Areas where the high costs of deployment will deter the provision of broadband services.

Market Areas 1-4 are Cities or Towns with higher density than the surrounding area—generally CMAs.

Market Area 5 is a lower density area **outside** of Cities or Towns—generally MFAs.



- A reasonable transition is necessary to allow companies to plan and recover investment on existing plant.

# Broadband Goals Should Be Realistically Set

- FCC Staff Finding: “end-to-end fiber networks offer nearly unlimited scalability and performance.”
  - Fiber has significant technical advantages over competing technologies. Upgraded electronics allow for higher speeds.
  - The cost of FTTN is usually significantly less than FTTP. FTTN provides a stepping stone for FTTP.
  - Wireless is not a viable broadband solution. Increased spectrum will help urban areas, but will not solve rural broadband problems.
- Speeds and deployment goals should evolve over time.
  - The definition of broadband access should evolve based on the service generally available in a sample of urban areas.
  - As long as the proper incentives are in place, fiber will be pushed farther into the network.

# Increased Accountability Will Ensure That Broadband Is Deployed

- As a condition of receiving universal service support, a provider should be subject to Title II regulation and earnings review.
- The receipt of universal service support is optional, but if accepted the carrier must provide broadband to all households in the MFA.
- If incumbent carriers are not willing to accept the increased accountability, other providers may be willing with adequate support.

# Models Using Actual Cost Are Preferable to Proxy Models

- Proxy models work when...
  - no actual data is available,
  - the data is too difficult to gather,
  - the quantity of data is too large,
  - the “law of large numbers” applies, or
  - the variance in the data is relatively low.
- None of these characteristics applies to small, rural ILECs.
- A proxy model should not be used when actual data is available and can be statistically modeled.
- An econometric model based on sampled actual costs of deploying fiber in rural areas is a better way to estimate costs.
- Regardless, a waiver process must be in place to handle demonstrable exceptions or outliers.

# Our Approach Aligns with FCC Findings

- Key FCC Staff Finding:
- A single broadband network capable of 100 mbps would cost about \$350 billion
  - Multiple networks would significantly increase the cost
  - Private Investment + USF + BTOP + BIP < Congressional Objectives
  - These costs are often driven more by opex than capex
  - The opex challenge is magnified in rural areas due to difficult transport economics
  - Low density rural areas may be 10 times more costly to serve than urban areas
- FTTP provides far higher bandwidth and is far more future-proof than other technologies
- Different treatment is needed for the highest cost areas

- The United States cannot afford to support more than one network.
- The current methods of funding are inadequate.

- Funding must address not only CapEx but also OpEx, including transport.
- Costs in some areas are extremely expensive.
- Fiber is scalable, versatile and provides the best service.
- Scarce support resources must be targeted to the highest cost areas that need the funding most.