BROADBANDUSA

The Business of Broadband – Getting Started

Prepared for USDA SET Program Recipients

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Conference Line: 888-790-3445

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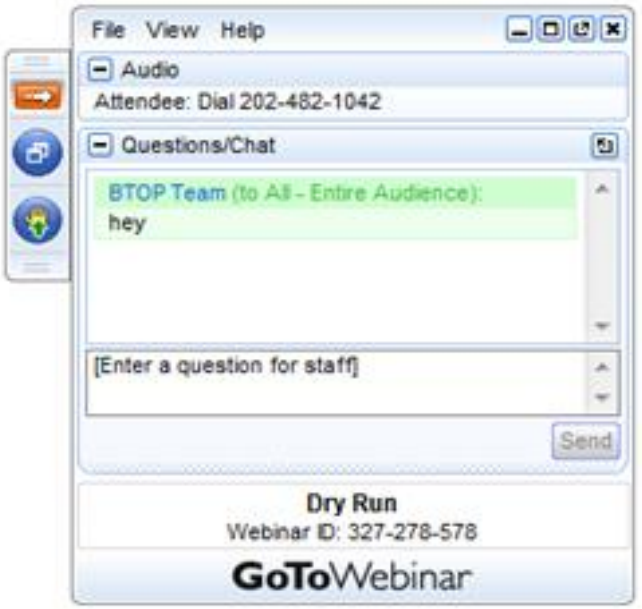
Question & Answer Instructions

- During Q&A, press *1 to speak with the operator
- Or type your question into the chat box throughout the presentation:



Today's Speakers

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Responsibilities

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NTIA Overview

Agenda

- NTIA Overview
  - ARRA Investments and Outcomes
  - BroadbandUSA
- Broadband Business Models
  - Introducing Broadband Models
  - Private Investments
  - Public Investments
  - Public-Private Partnerships
  - Cooperatives
- Finding the Right Model

About NTIA

- Part of the U.S. Department of Commerce
  - NTIA is responsible (by law) for advising the Executive Branch on telecommunications and information policy issues

- Specific NTIA activities:
  - Managing the Federal use of spectrum
  - Administering programs that further the deployment and use of broadband
  - Developing policy on issues related to the Internet economy
  - Performing cutting-edge telecommunications research and engineering with both Federal government and private sector partners

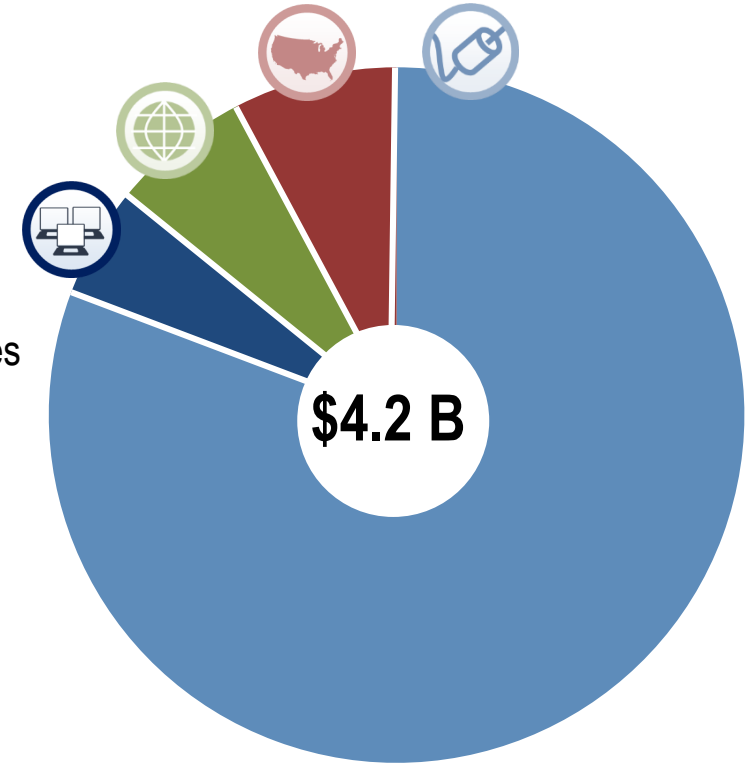
ARRA Grant Programs: 275 Awards, 4 Portfolios

Infrastructure - $2.9B - 109 Grants
Construct or upgrade broadband networks to connect unserved and underserved areas

Public Computer Centers - $201M – 66 Grants
Provide access to broadband, computer equipment, computer training, job training, and educational resources

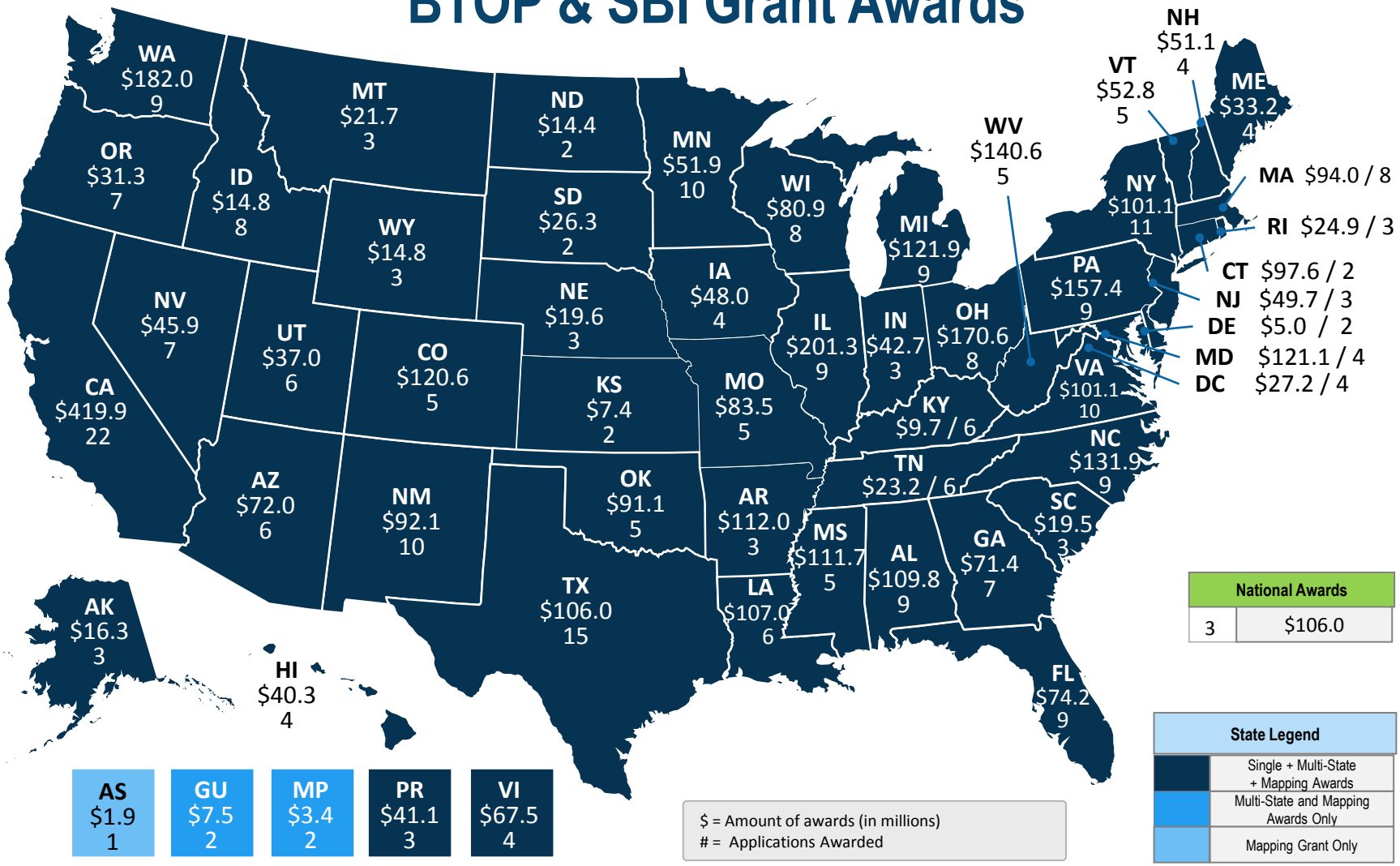
Sustainable Broadband Adoption
$250.7M – 44 Grants
Promote broadband adoption, especially among vulnerable population groups

State Broadband Initiative - $292.6M – 56 Grants
Gather data for use in the publicly searchable, interactive National Broadband Map



BROADBANDUSA
CONNECTING AMERICA'S COMMUNITIES

BTOP & SBI Grant Awards



National Awards	
3	$106.0

$ = Amount of awards (in millions)
# = Applications Awarded

State Legend	
	Single + Multi-State + Mapping Awards
	Multi-State and Mapping Awards Only
	Mapping Grant Only

Polling Question #1

Have you worked with the BTOP and SBI recipient(s) in your state:

- ❑ Comprehensive Community Infrastructure (CCI)
- ❑ Public Computing Centers (PCC)
- ❑ State Broadband Initiative (SBI)
- ❑ Sustainable Broadband Adoption (SBA)
- ❑ N/A

Please check all that apply!

BROADBANDUSA
CONNECTING AMERICA'S COMMUNITIES

BTOP impacted 7,674 communities across the nation: deploying infrastructure and teaching digital skills

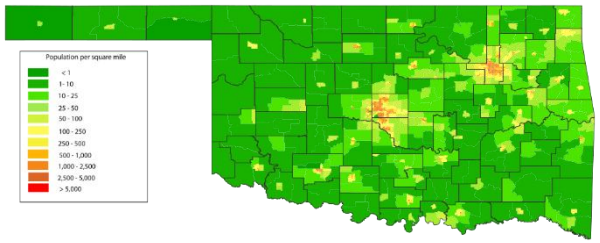
Deployed More Than 113,000 Network Miles

Enough to circumnavigate the globe 4.5 times

Delivered 20 Million Training Hours

Equivalent to taking classes 24/7 for more than two centuries

Trained More than 4 Million People



150k more people than the entire population of the State of Oklahoma

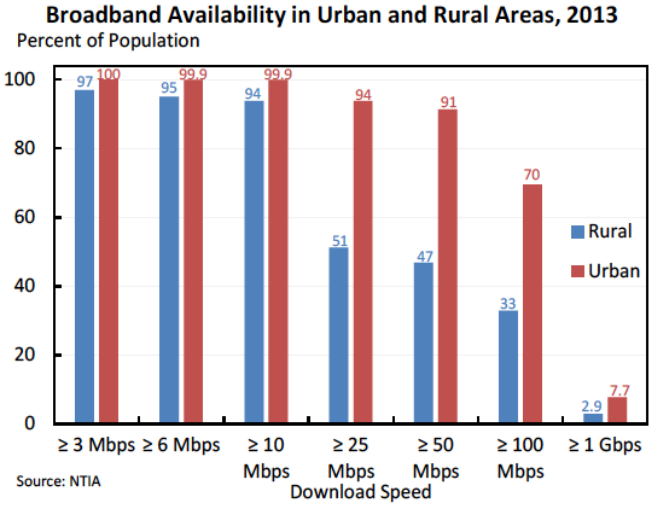
Positive Economic Outcomes from NTIA's Broadband Programs

- Increased levels of employment: A one percent increase in broadband availability increases employment .2 to .3 percent per year.*
- Increased wages: Workers who upgrade their information and communication technology skills see average wages increases of $111 per month.**
- Value to new broadband subscribers: Individuals who use the internet at home and work make $1.40 more per hour than non-users.***
- Increased social, health, and educational benefits: For example, by accessing health information online, 35 percent of new broadband users saved $217 per year on healthcare expenses.***

*Crandall, Lehr, and Litan, *The Effects of Broadband Deployment on Output and Employment: A Cross-Sectional Analysis of U.S. Data*
***A.T. Kearney: Assessing the Economic Benefits of Digital Inclusion (2011)*
**** DiMaggio and Bonikowski: Make Money Surfing the Web? The Impact of Internet Use on the Earnings of U.S. Workers.(2010*
*****Connected Nation:The Economic Impact of Stimulating Broadband Nationally. (2008)*

Our Work Isn't Done!

- Broadband is no longer an amenity, it is a necessity
- A quarter of Americans – approximately 78 million people – still do not have broadband at home
- Industries across America rely on broadband to help them advance their missions
- Broadband Applications are vital to rural communities (Education, Small Business, Telehealth…)



Polling Question #2

What is the biggest challenge you have encountered expanding broadband access in your region(s):

- ❑ Funding
- ❑ Lack of Support from the Community, Politicians, etc
- ❑ Legal / Regulatory Barriers
- ❑ Lack of Adoption of Existing Broadband

Please select only your biggest challenge!

NTIA created BroadbandUSA to provide assistance to communities that want to improve their broadband capacity and use broadband more effectively.

NTIA provides expert, impartial advice and field-proven tools for assessing broadband adoption, planning new infrastructure, and engaging a wide range of partners in broadband projects.

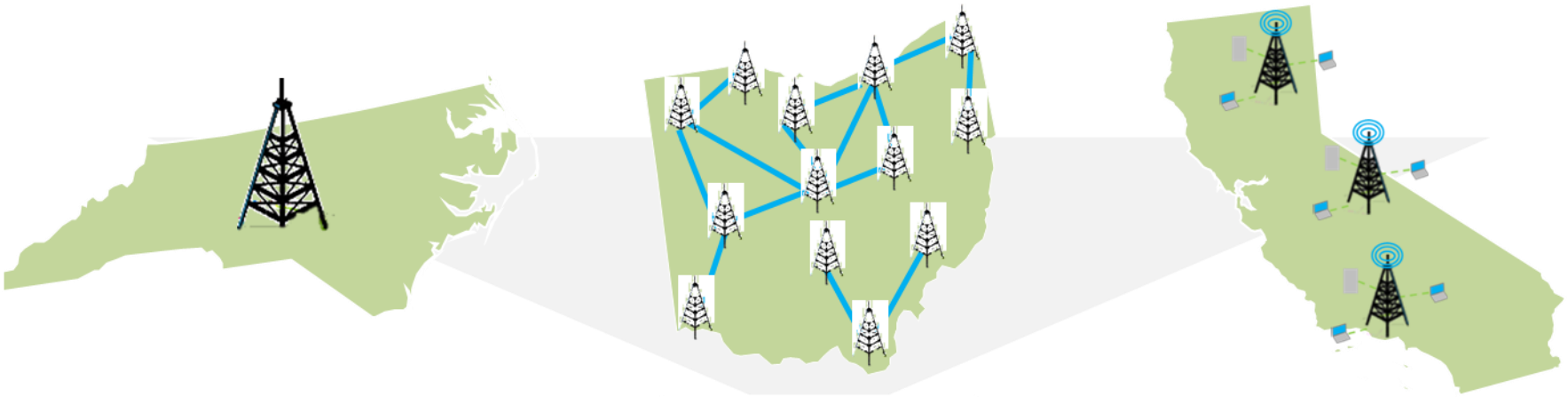
BroadbandUSA brings stakeholders together to solve problems, contribute to emerging policies, link communities to other federal agencies and funding sources, and address barriers to collaboration across agencies.

Introduction to Broadband Business Models

Statewide Networks

Interconnected Regional Networks

Local Independent Networks



Considerations

- Partnerships
- Technology Type
- Operator Type
- Network Build
- Economies of Scale
- Geographic Target

Network, Product, and Customer Strategy

Business Model Overview

- **Strategy**
- Marketing & Sales
- Financial Modeling
- Operating Plan

Local Conditions

- Existing Infrastructure
- Expansion vs. Upgrade vs. New Build
- Terrain, Weather, Other Construction Considerations

Product Strategy

- Service Offering (Voice, Data, Video)
- Value-Added Services
- Value Proposition (Speed vs. Cost)

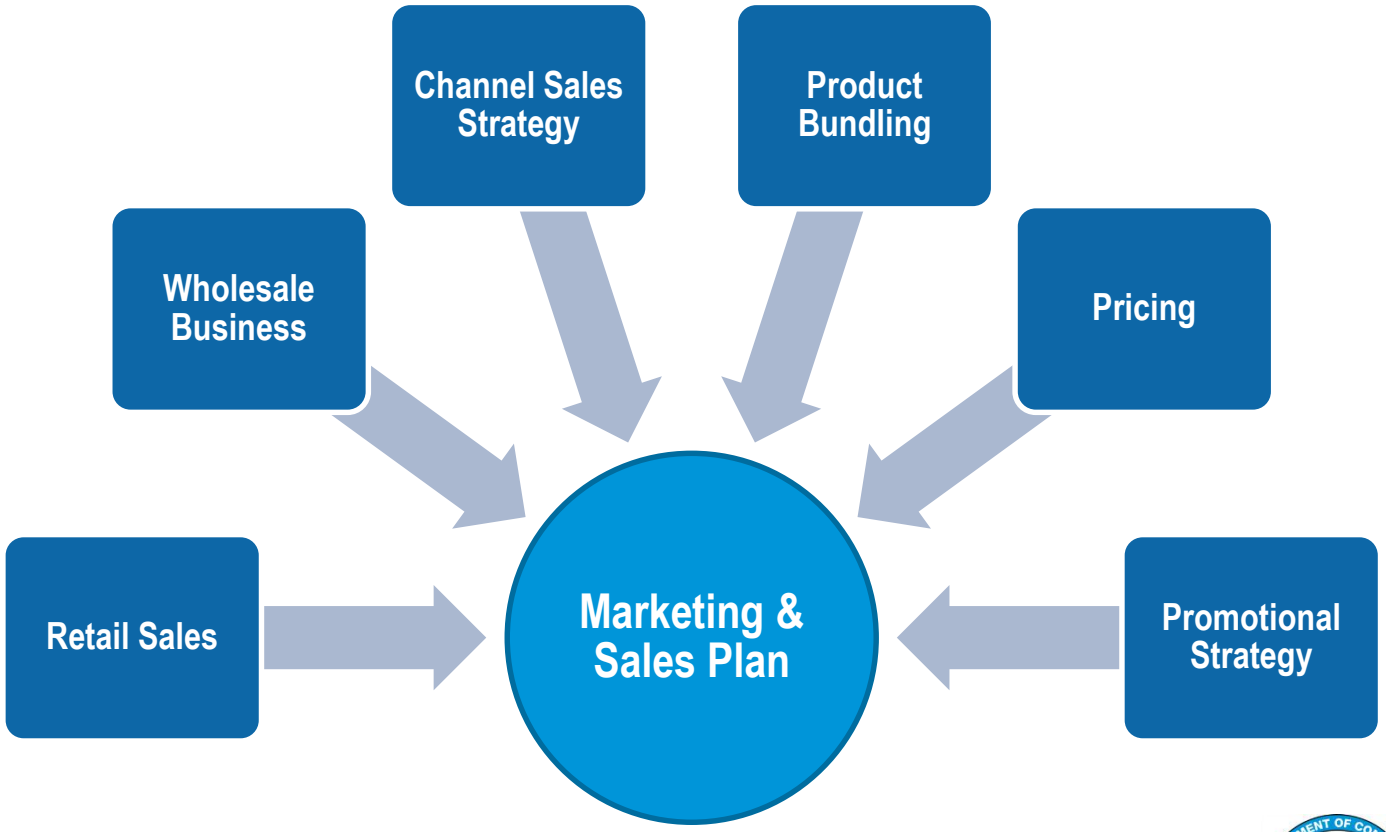
Market Segmentation

- Residential vs. Enterprise
- Market Sizing by Product
- Wholesale & Retail Services
- Competitive Assessment (SWOT)

Marketing & Sales Approach

Business Model Overview

- Strategy
- **Marketing & Sales**
- Financial Modeling
- Operating Plan

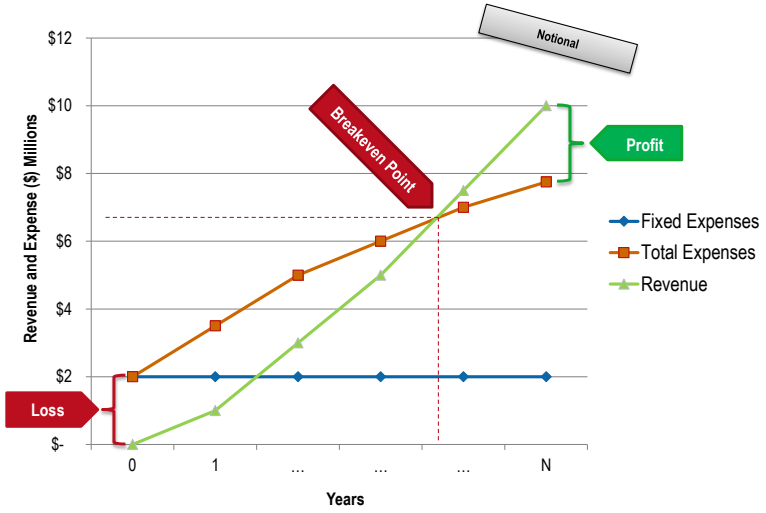


Financial Modeling & Planning

Business Model Overview

- Strategy
- Marketing & Sales
- **Financial Modeling**
- Operating Plan

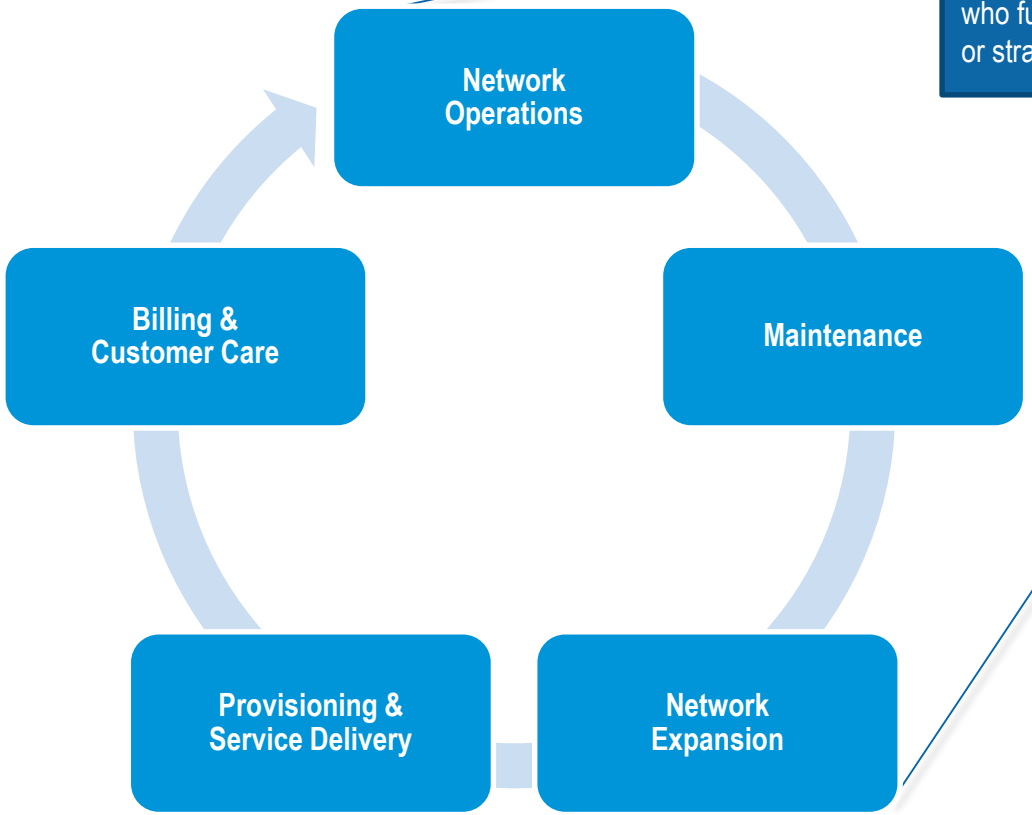
- Investment Plan
  - Funding Strategy
  - Debt & Investor Obligations
  - Ownership structure
- Capital Requirements
  - Up-Front (Construction, Build-out)
  - Working Capital Needs
  - Expansion Plan / Phased Approach
- Operating Budgets
- Financial Forecasting and Modeling



Operating Plan

Business Model Overview

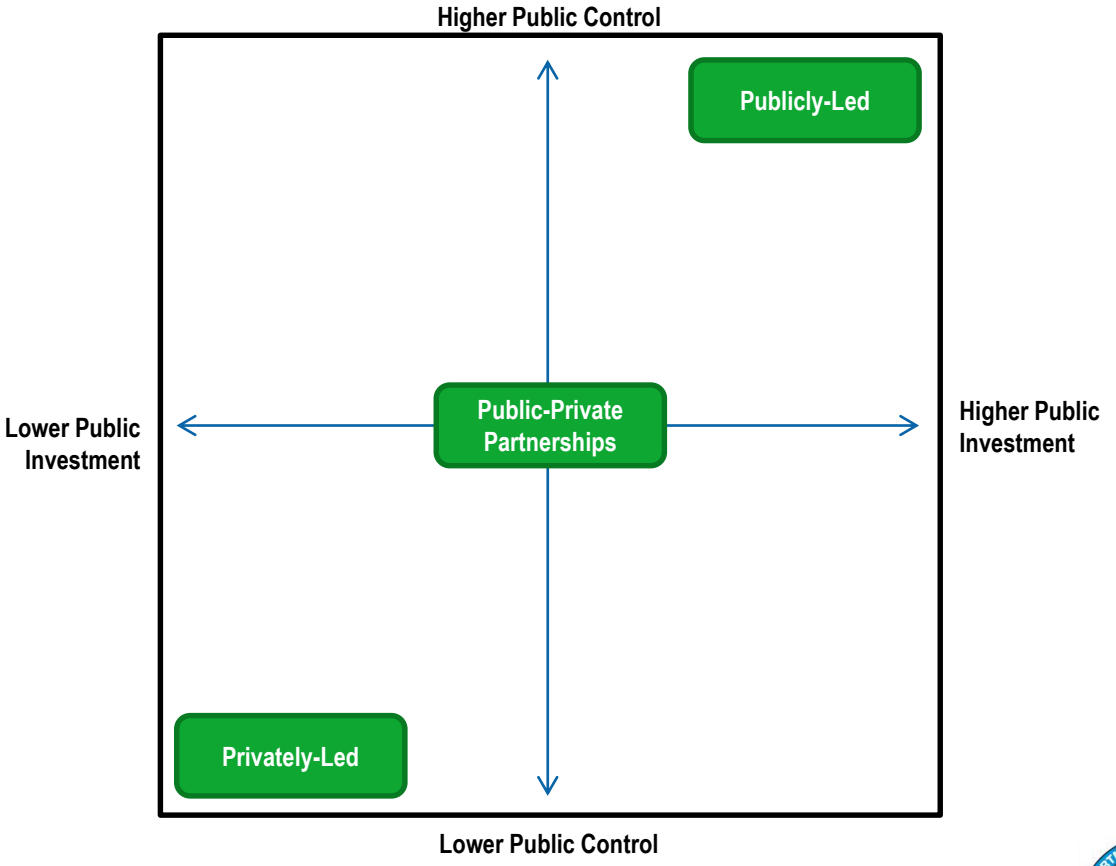
- Strategy
- Marketing & Sales
- Financial Modeling
- **Operating Plan**



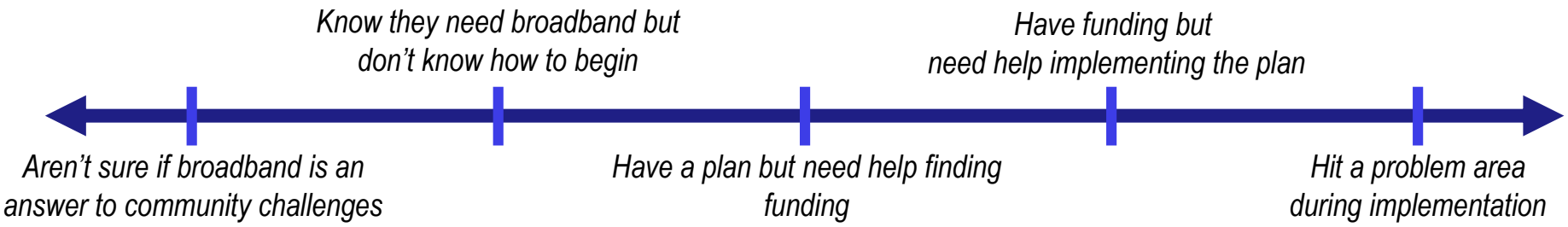
The operating plan needs to account for these functions *and* who fulfills them (staff, vendors, or strategic partners)!

Business Models: Balancing Cost & Control

Selecting a business model means balancing costs, risks, business realities, available partners, and more!



Polling Question #3



Implementation Continuum

Referring to the Implementation Continuum above, please select the description that most closely matches the state of your current broadband project?

Please select only one!

Business Models In Depth

Privately-Led Broadband Projects

Business Model Overview

- **Investment, Ownership & Governance**: A commercial operator (private or non-profit) builds, owns, and operates the network. Funding is generally private, but may be augmented by grants.
- **Network Operation**: The network is operated by the commercial operator.
- **Community Role:** Community feasibility studies and planning by CAIs and economic development authorities may contribute to the business case. Commitment from, and aggregating demand among, community entities and CAIs can also support the project's financial success and future expansion

Benefits

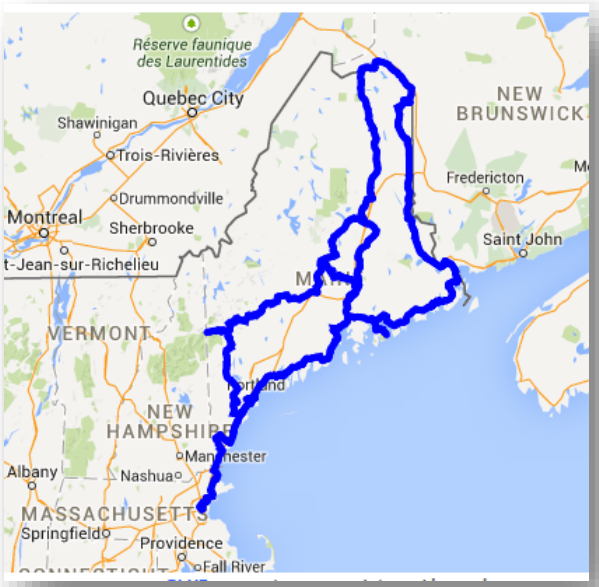
- ✓ Capital from private investor(s) reduces the risks associated with public financing
- ✓ Generally led by incumbent service providers or existing providers entering new markets

Challenges

- ✓ Network planning does not center on community need
- ✓ Communities have little control over implementation and operation
- ✓ Financial success, not community goals, drives future expansion
- ✓ Networks are unlikely to be open access without some form of community financing

Case Study: Maine Fiber Company, Maine

- Maine Fiber Company (MFC) is a private company that was formed in 2010 to oversee the construction, maintenance and leasing of a high-capacity fiber optic network
- Business model is designed around leasing dark fiber to other broadband providers throughout Maine, with connections into Canada, New Hampshire and Massachusetts
- A unique collaboration between a state government and a private company to remove barriers to market entry, the State of Maine and its legislature collaborated with the project, providing regulatory certainty to MFC by passing a bill that created a specific type of dark fiber public utility. This action allowed MFC to enter the marketplace.
- NTIA provided a $25.4 million grant, and the company contributed $6.1 million in investor-funded cash to deploy a 1,211 mile network connecting 100 anchor institutions.



MFC Three Ring Binder - Core Network

Publicly-Led Broadband Projects

Business Model Overview

- **Investment, Ownership & Governance**: A public entity (e.g., state, county or city government or municipal electric utility) owns the network. The public entity may either use an existing organization, such as a municipal electric system, or create an entirely new one. State and Federal grants may augment public funding sources.

- **Network Operation:** Operation may be public or private depending on community capabilities.

- **Community Role:** Community financing is the key driver, be it local, State, or Federal (or a combination). Communities may engage private partners in the construction, operation, and/ or maintenance of the network. Support from CAIs and economic development authorities, including demand aggregation, is critical to sustainability

Benefits

- ✓ Goals, objectives, and network design are generally architected around community needs
- ✓ Publicly-led does not mean public-only! Implementation and operation may be publicly-led, contracted to private entities, or a hybrid

Challenges

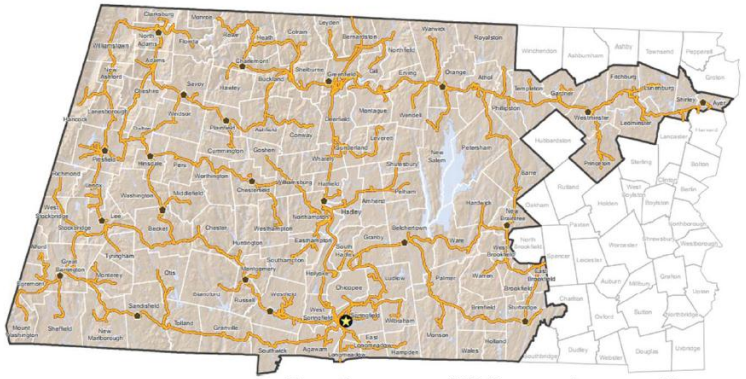
- ✓ Communities must raise the capital – and take the fiduciary risk – necessary for construction and build-out of the network
- ✓ Public finances and network operating revenues drive future expansion

Case Study: MassBroadband 123, Massachusetts

- Massachusetts Technology Park Corporation (MTPC) is a state economic development agency responsible for promoting growth in technology-based sectors in Massachusetts. MTPC recently completed a fiber project that connects 123 towns and over 1,100 community anchor institutions across Western Massachusetts. NTIA provided a grant of $45.4 million, and MTPC contributed $44.2 million.

- In this project, the state government owns the network and develops strategic priorities but authorizes commercial operators to deliver service. The "open access" architecture allows any Internet service provider to purchase wholesale services and backhaul capacity. To avoid potential conflicts of interest, MTPC does not offer any retail services.

- Through a competitive procurement process, MTPC contracted a private firm to operate the network and market wholesale services. A profit-sharing arrangement incentivizes this firm to execute as many wholesale agreements as possible. MTPC's profits are used to expand the network to unserved areas. This effort, combined with this revenue-sharing open access model, has attracted over 20 broadband providers to purchase capacity.



MASSBROADBAND123 SERVICE AREA AND NETWORK POINTS OF INTERCONNECTION

Public-Private Partnerships

Business Model Overview

- **Investment, Ownership & Governance**: One or more commercial operators (private or non-profit) and one or more public enterprises jointly invest in the network and share capacity. Either party may own the assets (or share ownership). State and Federal grants may augment other funding sources.
- **Network Operation**: The network is generally operated by the commercial partners.
- **Community Role:** Community financing is a key driver, while community feasibility studies, planning, and regulatory support are also critical to success. Communities must have a long-term commitment to the partnership. Support from CAIs and economic development authorities is important for sustainability

Benefits

- ✓ Risk is shared among public and private investors
- ✓ Public objectives will contribute to the network design, subject to its overall financial success
- ✓ Provides many options for the method and economics of implementation, operation, etc

Challenges

- ✓ Network planning decisions must balance community and private-sector needs
- ✓ Partnerships are subject to market conditions, the success of private partners, mergers & acquisitions
- ✓ Public and private entities will likely share ownership of assets, complicating some transactions

Broadband Cooperatives

Business Model Overview

- **Investment, Ownership & Governance**: Cooperatives may be public-centric utilities or consortia of private entities.
- **Investment**: Investors are generally public and may include State or Federal funding.
- **Community Role:** Community financing is the key driver, be it local, State, or Federal (or a combination). Communities may engage private partners in the construction, operation, and/ or maintenance of the network. Support from Community Anchor Institutions (CAIs) and economic development authorities, including aggregating demand among community entities, is critical to sustainability

Benefits

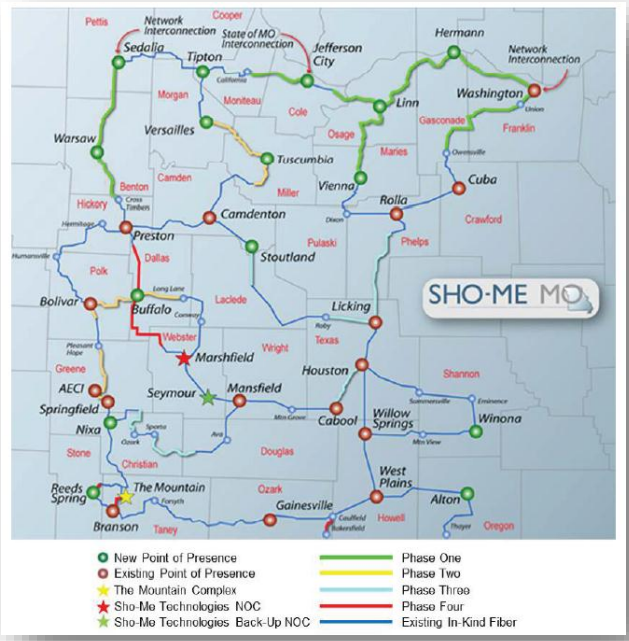
- ✓ Capital from outside investor(s) reduces the risks associated with public financing
- ✓ Generally led by experienced utilities that understand infrastructure projects

Challenges

- ✓ Network planning is designed around sustainability, not community need
- ✓ Cooperatives are not known for explosive growth; expansion is likely based upon the reinvestment of earnings and may be slow
- ✓ Networks are unlikely to be open access without some form of community financing

Case Study: Sho-Me Technologies, Missouri

- The project's origins date back to 1997, when Sho-Me Power Electric Cooperative, a public entity, created a technology subsidiary, Sho-Me Technologies, to leverage its existing internal advanced optical communications network to offer high quality, high bandwidth connections to both internal and external customers, particularly rural communities.
- South-central Missouri relied on copper-based broadband access and needed significantly higher speeds to enable distance learning, telehealth and public safety applications.
- NTIA provided a $26.6 million grant to Sho-Me Technologies to deploy a 1,494 mile (mostly fiber) network connecting 101 anchor institutions across 30 counties.
- Sho-Me collaborated with the State of Missouri to develop the project's network design and identify the unserved and underserved areas to target its network build.



Finding the Right Model

It's About the Business Case!

Planning

- Variations in local government structures, private sector firms, community forces, state laws and local conditions bring a unique set of circumstances to each broadband deployment.
- Communities should initiate a comprehensive planning process that hat identifies all unserved and underserved areas and seeks to leverage existing resources.

Making the Case

- The business case uses all of the information gathered during the planning phase to develop a strategy and financial model for the project.
- A community should always keep the goals it previously identified, combined with the knowledge of its own assets and limitations, at the forefront of any decision.

Evaluating Partnerships

- Partners can take on important roles financing, deploying, operating, and maintaining networks.
- While strategic partnerships may not fit every community environment, communities should assess the ability of partners when building a broadband business case.

Regardless of the Model, Partners Play Important Roles!

Government Leadership and Catalyst	Private Sector Ingenuity and Funding	Community Outreach and Demand
Local and state government entities may serve as leaders and catalysts to garner community support, identify needs, develop innovative solutions, and attract private investment	The private sector – network service providers, equipment vendors, developers and technology firms – bring expertise, resources and innovation in network deployment and operations, customer support and broadband applications	CAIs, non-profit groups, research, education and government networks can drive initial demand and promote capacity building in the long-run

Polling Question #4

What broadband topics would be most helpful to you in a future webinar?

- ❑ Developing Partnerships
- ❑ Aggregating Demand
- ❑ Building Support for Community Broadband Programs
- ❑ Improving Broadband Adoption

Please check all that apply!

Next Steps…

Follow-Up

- These slides will be made available
- Polling results
- Attend a Future Webinar!

For More Information…

- Contact Andy or Jenn
- Email BroadbandUSA (BroadbandUSA@ntia.doc.gov)

Broadband Resources

Resource	Website
BroadbandUSA	http://www2.ntia.doc.gov/
State Broadband Initiative	http://www2.ntia.doc.gov/SBDD
National Broadband Map	http://www.broadbandmap.gov
NTIA Broadband Adoption Toolkit	http://www2.ntia.doc.gov/toolkit
BTOP Economic & Social Impact Study	http://www2.ntia.doc.gov/btop-reports#evaluation
NTIA Public-Private Partnership Guide	http://www2.ntia.doc.gov/files/ntia_ppp_010515.pdf
White House Broadband Opportunity Council	http://www.whitehouse.gov/the-press-office/2015/01/13/fact-sheet-broadband-works-promoting-competition-local-choice-next-gener

Thank You!