

# Open Service Provider Networks

An Overview

# Current broadband model is broken

- Just selling bandwidth, as we have since the Internet became popular, no longer works
- The business is “backward” (or upside down)
  - An ISP makes the most money if a customer uses the Internet a little or not at all
  - An ISP makes the least money if a customer likes the service (Internet access) and uses it a lot
- So we have the strange situation in which ISPs try to discourage their customers from using the service

# Characteristics of Open Service Provider Networks

- The community or a regional consortium (like a broadband coop) owns the network infrastructure
- Many private sector service providers compete to sell services
  - A level playing field for all providers
  - Layer 3 end to end provisioning of services, instead of Layer 2 VPNs
- Low cost for service providers to enter new markets (communities) and offer competitive services
- No cost or very low cost to connect to the network

# Comparison of Business Models

| Characteristics        | Current approach<br>(Leave it to the private sector)                                | Municipal Retail                                                      | Pseudo Open Access                                       | True Open Service Provider Network                                                                          |
|------------------------|-------------------------------------------------------------------------------------|-----------------------------------------------------------------------|----------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|
| Basic Concept          | Old-fashioned triple play.                                                          | Old-fashioned triple play.                                            | Limited choice of services.                              | Unlimited choice of services and providers.                                                                 |
| Government             | Not involved.                                                                       | Government directly competes with private sector.                     | Government ownership may cause problems.                 | Government does not sell services and does not compete with private sector.                                 |
| Competition            | Little or none.                                                                     | None.                                                                 | Limited by high cost of providing services.              | Lots of competition. Service providers have to drive down costs and provide great service to get customers. |
| Service options        | Only triple play.                                                                   | Only triple play.                                                     | Limited. High cost of providing services limits options. | Unlimited. Low cost of market entry attracts new service providers and encourages innovation.               |
| Revenue                | Limited by low returns on the individual services.                                  | Limited by low returns on the triple play services.                   | Limited by low returns on the triple play services.      | Unlimited. Revenue directly linked to demand for services. As demand increases, revenue increases.          |
| Service area expansion | Limited to high density population areas. Rural areas at a structural disadvantage. | Limited by triple play approach, which keeps funds for expansion low. | Limited by small number of service providers.            | Unlimited. Cost of build out completely supported by revenue sharing model.                                 |

# What is broadband?

- Definition of broadband is:
- You have as much bandwidth as you need to do whatever it is you want to do
- “Broadband needs” studies tend to focus on “*How much bandwidth do you want?*” rather than “*What do you need to do?*”
- It is the second question that drives community and economic development
  - If businesses can’t do what they need to do because broadband is defined as a certain amount of bandwidth, local businesses suffer and new businesses won’t move to the region

# OSPN Principles

- **Build to everyone**
  - Universal access is critical to the future of the community. Without it, economic development is choked off
  - A key role of communities is to ensure equality of access--to roads, to clean water, to sanitation systems
  - Universal access to broadband services makes the community a better place (to live, and to work)
  - Universal access creates a marketplace with a critical mass of customers that makes the digital road system financially viable
- **Give “broadband” away, only sell services**

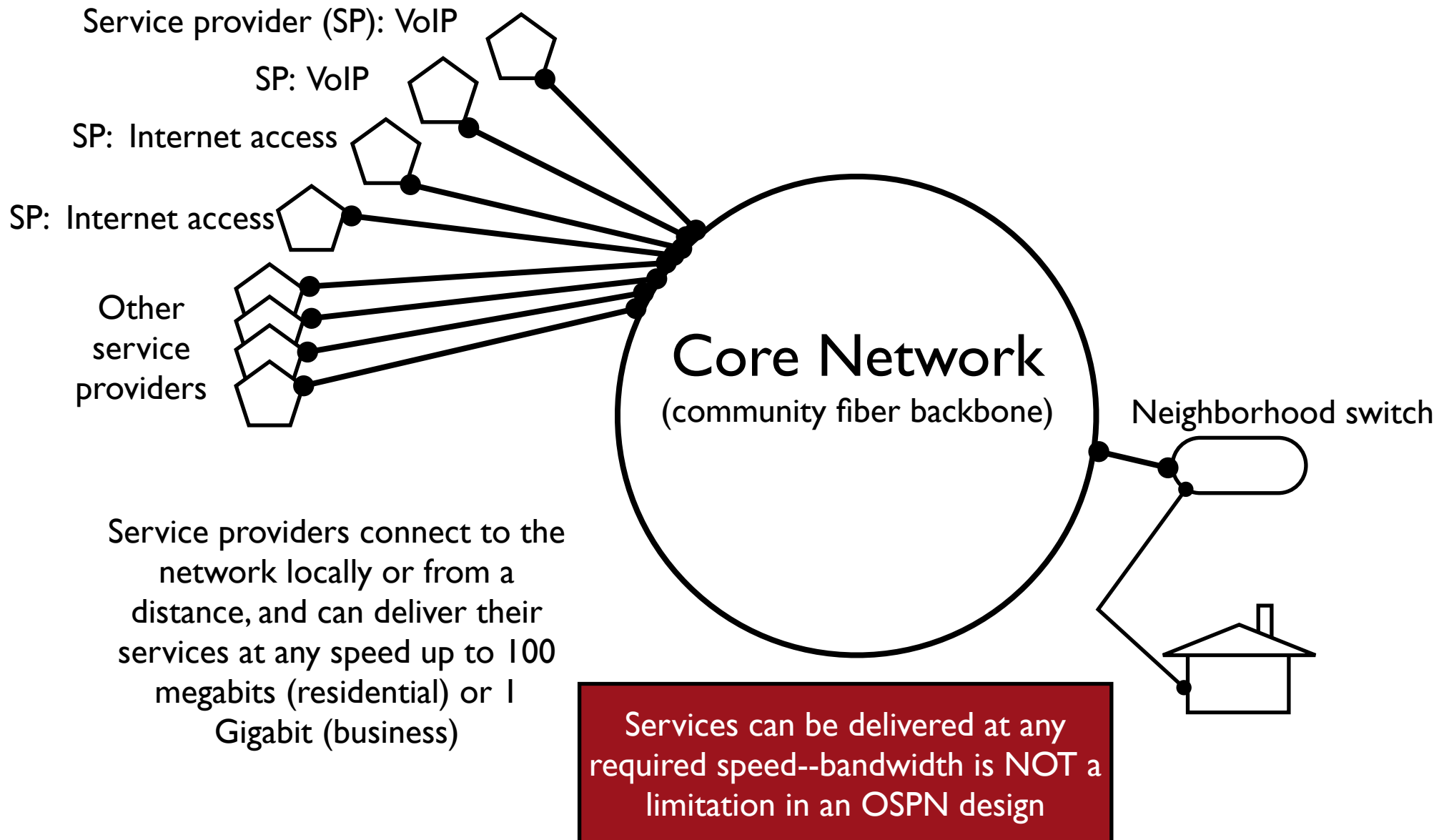
# Connection to the network is free

- Local transport is free
- Anyone can connect to the network for access to community services--without a service charge
  - Local government services
  - Local school learning resources (ALL children have free access to online learning)
  - Local community resources (community Web portal, other community and social services)

# Everything is a service

- Users buy services, not bandwidth
  - OSPN systems are fundamentally different because you are NOT selling broadband at all--unlike every other business model
- Services include...
  - Internet access (provided by existing local companies)
  - Voice over IP telephone services (VoIP)
  - TV programming packages
  - Home security
  - Management and backups of home, business computers
  - Gaming, movies on demand
  - Telemedicine, telehealth, visiting nurse services

# Network Design



# Do the math

|                              | Moderate to low income household                                                    | Moderate to high income household                                                     |
|------------------------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| Number of households         | 5000                                                                                | 5000                                                                                  |
| Typical monthly telecom cost | Local phone: \$25<br>Long distance: \$25<br>Cable TV \$45<br>Dial up Internet: \$20 | Local phone: \$25<br>Long distance: \$25<br>Cable TV \$55<br>Broadband Internet: \$40 |
| Total monthly cost           | \$115                                                                               | \$145                                                                                 |
| Total annual cost            | \$1,380.00                                                                          | \$1,740.00                                                                            |
| Telecom costs over 20 years  | \$27,600.00                                                                         | \$34,800.00                                                                           |
| Regional cost over 20 years  | \$138,000,000.00                                                                    | \$174,000,000.00                                                                      |
| Total 20 year telecom cost   | \$312,000,000.00                                                                    |                                                                                       |

# Do the math

|                                                                                                                 | Residential community | Rural community |
|-----------------------------------------------------------------------------------------------------------------|-----------------------|-----------------|
| What the community will spend over 20 years on telecom services (old fashioned monopoly service)                | \$312,000,000         | \$312,000,000   |
| Savings from using an OSPN system are (conservatively) 15%--put back in the pockets of businesses and residents | \$46,800,000          | \$46,800,000    |
| What the community will spend on telecom with an OSPN system                                                    | \$234,000,00          | \$234,000,000   |
| Average revenue share (25%) on \$234,000,000                                                                    | \$58,5000,000         | \$58,500,000    |
| Cost of building an OSPN system in a residential community                                                      | \$20,000,000          | \$35,000,000    |
| Cost of borrowing (10%)                                                                                         | \$2,000,000           | \$3,5000,000    |
| Total system cost                                                                                               | \$22,000,000          | \$38,500,000    |
| Net revenue over 20 years                                                                                       | \$36,500,000          | \$20,000,000    |

# Fiber to the premise financing options

- \$2,000 to \$3,500 per home passed
- Increases property value by \$7,000 to \$10,000 (up to 3 to 1 return on investment)
  - A better home investment than any other kind of remodeling
  - Homeowners routinely spend thousands on remodeled kitchens and baths, which provide, at best, 1 to 1 return
- Roll the cost into the existing mortgage
  - Raises the mortgage \$5 to \$10 per month
- Sweat equity--homeowner digs trench and installs duct to street/road (can cut cost by 1/2)

# Make residents shareholders

- Broadband coop makes customers part owners of a telecommunications company
- When initial system cost is paid off (about 7 years), shareholders begin to receive dividends
- Every homeowner and business in the community becomes an investor/owner
- Money stays in the community, instead of leaving the state every month

# How it works

- Local government does not sell services to the public or compete with private sector service providers
- Local government serves as an anchor tenant to help finance the network
- All existing service providers are invited to offer services on the network, including incumbent providers
- Service providers compete with each other, not the government

# How it works

- Prices go down for telecom services
  - Competition drives telecom prices down in the community
  - A shared system lowers the cost of doing business to ALL service providers
- Service provider shares revenue with the network owner
  - Service providers can reach new and expanded markets with much less cost, so revenue sharing is attractive
  - Net revenue can be used for community, economic development